

# cycling & trails

## MASTER PLAN

### EXPERIENCE REPORT

June 2020





## WHAT WE HEARD

- Provide more signage and pavement markings as wayfinding, particularly where trails intersect with major streets
- On trails, make it clear which users are permitted and what routes are accessible
- Winter maintenance will open up the trails network to more people year round instead of only seasonally
- Need to clear priority routes of snow first in winter, similar to road plowing. These are the community trails that link between communities
- Enhanced communication of winter maintenance practices. Consider an app - users can report issues, receive a turnaround time for repair. Others can see the report/updates.
- Create and mark trails that connect the ION to existing trail networks
- Make transit and sustainable transportation options more feasible/ appealing than taking a car

## EXPERIENCE

For cycling and trail use to become more attractive and competitive ways to move around the City, they need to be as safe and convenient as possible. Strategies aimed at improving the user experience relate to how cycling routes and trails are integrated into neighbourhoods as well as the types of supporting infrastructure that is needed to support the convenient and comfortable use of the network across the city. The strategies and actions under the theme of experience focus on achieving the second goal of the Cycling and Trails Master Plan which is to **provide a safe and high quality experience**.

A key focus of this theme is to ensure that using cycling routes and trails in Kitchener is easy, stress-free, and as seamless as possible. This can be done through a variety of approaches, such as providing short-term and long-term bicycle parking, wayfinding, and maintaining the network year-round. This theme also identifies the importance of land use and considerations regarding future technologies and new ways to travel around.

Through the public engagement process, input was collected noting the importance of maintaining the cycling and trails network year-round and providing more information about snow and ice clearing and maintenance practices. Having an easy and intuitive way to report maintenance concerns to the City was also identified.

Wayfinding and signage were also identified as critical to making the cycling and trails network easy to navigate and connecting people to the destinations they want to go. Branding and route naming were suggested as a way to make routes more recognizable throughout the City.

Providing a convenient and high quality experience for people every time they use cycling routes or trails will help to make walking, rolling, and cycling more desirable transportation options.

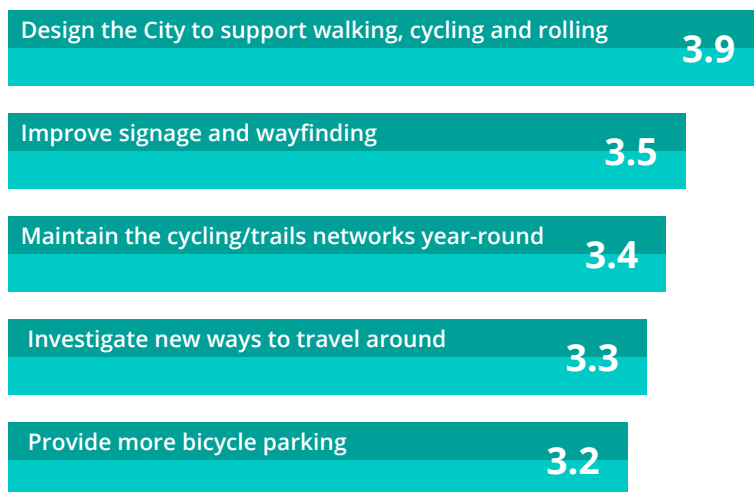
There are five strategies that focus on improving the experience for people using cycling routes and trails in Kitchener:

- **Strategy 2A:** Ensure Land Use Supports Walking, Rolling, and Cycling
- **Strategy 2B:** Provide More Bicycle Parking and Other End-of-Trip Facilities
- **Strategy 2C:** Maintain the Cycling and Trails network Year-Round
- **Strategy 2D:** Make it Easy to Find the Way
- **Strategy 2E:** Investigate New Technologies

Through the public engagement process, there was strong support for all five strategies. Online survey respondents were asked to rank the importance of each strategy on a scale of 1 (least important) to 5 (most important). All five strategies under this theme received scores of at least 3.2 out of 5, showing overall support. Designing the city to support walking, rolling, and cycling was the highest ranked strategy.

#### LEVEL OF SUPPORT FOR STRATEGIES TO IMPROVE EXPERIENCE

Rated on a scale of 1 (least important) to 5 (more important)



## Strategy 2A: Design the City to Support Walking, Rolling, and Cycling



### ACTION IS IDENTIFIED UNDER STRATEGY 2A:

- **Action 2A-1:** Ensure future development areas are connected to and include cycling and trail infrastructure to meet future community needs as identified within the Cycling and Trails Master Plan.

Land use planning can play a significant role in shaping how people travel around a city, as it can impact how convenient and feasible it is to walk, roll, or cycle to destinations. Even when streets have comfortable cycling routes and trails, residents will be deterred from using them if the route is indirect, circuitous, or if destinations are too far to access.

Land use planning and development throughout the city presents opportunities to ensure that safe and attractive cycling routes and trails are provided, that these facilities are integrated with the broader cycling and trails network, and that they align with the Official Plan and the Planning Round Rapid Transit Stations report, among other planning documents.

Action 2A-1: Ensure existing and future development areas are connected to and include cycling and trail infrastructure to meet future community needs as identified within the Cycling and Trails Master Plan.

In 2019, the City adopted the Complete Street Guide. The approval of this guide is a commitment by the City to consciously design streets that consider the needs and safety of all road users. The Complete Streets Guide can help to better balance accommodation for all modes of travel within the public right-of-way for new or retrofit road projects. For newer areas, the guide can be used to shape the City's street design standards. The City should work to ensure that all street reconstruction projects and streets within new developments follow the recommendations of the Cycling and Trails Master Plan and the Complete Streets Guide to incorporate cycling routes and trails within development sites.



Ensuring that existing neighbourhoods and future development areas have cycling route and trail connections to the city-wide network is key to promoting more trips on trails and by bicycle. It is important to ensure that there are adequate access points that provide direct connections to adjacent areas for all road users, both to support direct and short trips between neighbourhoods.

The Cycling and Trails Master Plan recognizes that a key component of expanding and enhancing the cycling and trails network is to provide connections to existing neighbourhoods within the City, as well as future population and employment areas, as they are often areas of high activity and are generators of trips by active modes. The cycling routes that connect these major destinations have been identified as City Spine routes. The City should prioritize projects that provide cycling and trail connections to these important destinations, both existing and proposed as future development areas.

The City should ensure that cycling routes and trails connect with growth and development areas identified in the Official Plan and also align with the Planning Around Rapid Transit Stations (PARTS) report.

The City should also continue to work with developers and other stakeholders and examine existing policies and standards to ensure the development of new walkable and bikeable neighbourhoods and employment areas.





## ACTIONS ARE IDENTIFIED UNDER STRATEGY 2B:

- **Action 2B-1:** Provide high quality bicycle parking and end-of-trip facilities at City of Kitchener owned and operated facilities
- **Action 2B-2:** Provide more bicycle parking and end-of-trip options throughout the city and at special events

## Strategy 2B: Provide More Bicycle Parking

End-of-trip facilities encourage people to bicycle as a primary mode of transportation by providing a secure place to leave their bicycle and a place to tidy up and/or change upon arriving at their destinations. Short-term and long-term bicycle parking is provided at various locations throughout the city, including destinations such as downtown Kitchener, community centres, and golf courses. It was noted through the engagement process that limited bicycle parking is provided in the public right-of-way.

Some businesses in the past have requested bicycle racks from the City. There is currently no formal process for responding to requests for bicycle racks from private businesses. Decorative bicycle racks were installed downtown in partnership with economic development and short-term bicycle parking exists at most transit stations, but there is currently limited secure, long-term bicycle parking throughout the city.

The City operates three secure bicycle parking facilities in the downtown core and two additional facilities have been funded. Several public bicycle maintenance stations are found within Kitchener, including at City Hall, the Kitchener Market, and on Queen Street at the Iron Horse trail. Input received from the public and stakeholders through the planning process for the Cycling and Trails Master Plan found that provision of more safe and secure bicycle parking would help to encourage more cycling in the city.

Bicycle parking is typically broken down into two types: Class A and Class B. A description of each is provided below:

- **Class A bicycle parking** means a bicycle locker or an enclosed, secure area with controlled access in which a bicycle may be parked and secured for the long-term in a stable position with at least one point of contact with the frame of the bicycle. Long-term parking is generally



oriented towards cyclists needing to park a bicycle for an entire day or longer. Major employment areas, transit stations, and areas with high cycling activity are ideally suited to long-term bicycle parking facilities. They can also be required in private developments which will help to increase the supply of indoor secure parking.

- **Class B bicycle parking** means an area in which a bicycle may be parked and secured for the short-term in a stable position with two points of contact with the bicycle frame. This type of parking often takes the form of bicycle racks which are oriented toward residents and visitors stopping in an area for shopping or other personal business. They should be located as close to destinations as possible, in convenient locations that are highly visible for users. Where possible, Class B bicycle parking should be covered and protected from weather.

The City is undergoing a comprehensive review and update of its Zoning Bylaw. The new bylaw includes details on Class A and Class B bicycle parking stall provisions as well as shower and change facilities for new developments. The bylaw includes dimensional requirements for bicycle parking, the minimum area for shower and change facilities, and a minimum number of showers that must be provided. The number of bicycle parking stalls required differs based on the development use and zoning, but often is determined by the gross floor area, the number of dwellings or guest rooms, or may be a set number.

**Action 2B-1:** Provide high quality bicycle parking and end-of-trip facilities at City of Kitchener owned and operated facilities

The City has taken steps to demonstrate leadership by providing Class A and B bicycle parking as well as end-of-trip facilities at several City owned and operated facilities. Providing additional, and improving existing, bicycle parking and end-of-trip facilities at City of Kitchener buildings





reinforces to residents, developers, and private business owners that bicycle parking is important. Residents and stakeholders noted throughout the engagement process that a lack of secure bicycle parking and concerns of bicycle theft were factors that prevented them from cycling more.

Providing adequate bicycle parking at libraries, recreation centres, and other civic centres will benefit employees, residents, and visitors; and support travelling to these facilities by cycling routes and trails. Providing bicycle parking and end-of-trip facilities at municipal sites would require identifying the type and quantity of facilities required and appropriate for each of the buildings. This can include the provision of short-term facilities at locations that see a lot of visitor activity. Longer-term bicycle parking and other end-of-trip facilities should be considered at locations where there are high concentrations of employees.

**Action 2B-2:** Provide more bicycle parking and end-of-trip options throughout the city and at special events

There are several ways in which the City can work to provide more bicycle parking and end-of-trip facilities. Some of these include working with partners such as the Cycling and Trails Advisory Committee and other stakeholders, and other organizations, businesses, and developers. Kitchener should consider the following strategies to provide more bicycle parking options throughout the city and at special events.

- **Public Rights-of-Way:** The City often receives requests for additional bicycle parking located within the public right-of-way. There is currently no process in place to confirm ideal bicycle parking locations or if they are a priority. The City should develop a program for identifying locations, prioritizing and implementing bicycle parking within the public right-of-way and at trail locations.
- **Business Partners:** The City can work with business



groups, the Downtown Action and Advisory Committee, and other partners to develop a program that supports businesses in the implementation of short-term bicycle parking, bicycle corrals, and other end-of-trip facilities. It is recommended that additional staff resources and funding would be required to develop and implement this type of program.

- **Building retrofits:** The City can develop a program to encourage businesses in existing developments to retrofit existing buildings to provide bicycle parking and other amenities such as storage and change room facilities to support employee's cycling to work year-round. Adding these facilities would likely require a reallocation of existing motor vehicle parking to bicycle parking.
- **On-street bicycle corrals:** Bicycle corrals refer to a grouping of bicycle racks located on the street. They are typically located in a parking space that was traditionally allocated to motor vehicles. Because they are often located within the roadway, bicycle corrals minimize sidewalk clutter, free up space for other uses, and increase bicycle parking at locations with high demand. Bicycle corrals can also be easily adapted to host bikeshare systems.
- **Developers:** As the City's Zoning Bylaw outlines the requirements for bicycle parking and end-of-trip facilities in developments based on zone classification, it will be important for the City to ensure that the developers are following the requirements of the bylaw to provide more bicycle parking throughout the City.
- **Region and Neighbouring Municipalities:** The City can consider advocating for neighbouring municipalities and the Region to enhance parking and end-of-trip facilities so that out-of-city trips become more attractive.
- **Bike Check:** The City of Kitchener's BikeKitchener operates a bicycle valet called BikeCheck at many festivals and events. BikeCheck is a free service run by





## ACTIONS ARE IDENTIFIED UNDER STRATEGY 2C:

- **Action 2C-1:** Implement service standards for maintenance of cycling routes and trails based on trail type and the Minimum Maintenance Standards
- **Action 2C-2:** Review and consider giving streets with bicycle facilities a higher snow clearing priority
- **Action 2C-3:** Design cycling routes and trails to facilitate drainage, snow removal, and snow storage
- **Action 2C-4:** Implement an inspection program to ensure adequate surface conditions and quality of cycling routes and trails
- **Action 2C-5:** Consider the development of an app or tool to allow users to report maintenance issues
- **Action 2C-6:** Provide information about snow clearing timelines and practices for cycling routes and trails to provide clarification on which routes are winter maintained

volunteers and City staff. Building on the success of the existing Bike Check service, the City may consider looking for partnership opportunities to expand BikeCheck service.

## Strategy 2C: Maintain the Cycling and Trails network Year-Round

Maintaining cycling routes and trails is an important component of ensuring that walking, rolling, and cycling is a viable and accessible transportation option for people of all ages and abilities year-round. Year-round maintenance was identified by residents and stakeholders throughout the planning process of the Cycling and Trails Master Plan as a factor that influences the decision to travel on cycling routes and trails.

The installation of new cycling routes and trails is often seen as the top priority to promote more trips by active modes. Through discussions with the public and stakeholders, however, it is clear that ongoing maintenance of existing infrastructure is equally, if not more important, than installing new infrastructure. The ongoing maintenance and operations of infrastructure needs to be considered at all stages of the planning and the design process. Maintenance is necessary to keep cycling routes and trails functional and usable throughout all seasons, which ensures that facilities are universally accessible throughout the year.

Communities such as Kitchener that have extensive trail networks and on-street cycling infrastructure have a substantial population that are interested in using these facilities for transportation and recreation year-round. An important component of a successful cycling and trails network is proper maintenance throughout all seasons; however, this is often challenging to achieve due to tight operating budgets and competing maintenance needs, a lack of appropriate equipment, changing maintenance best



practices, or an insufficient inventory of maintenance issues.

There are two key documents that determine baseline maintenance practices for cycling routes and trails in Kitchener. The City's Bylaw (Snow and Ice Removal) and the Provincial Minimum Maintenance Standards (MMS) for Municipal Highways (Ontario Regulation 239/02). The MMS was updated in May 2018 to include a greater focus on maintenance standards for active transportation facilities, including bicycle facilities and sidewalks (including Boulevard Multi-use Trails). The MMS outlines the standard for addressing snow accumulation on a sidewalk (and Boulevard Multi-use Trails) after the snow accumulation has ended or if a significant weather event has been declared.

Within the city, there are approximately 37 km of Boulevard Multi-use Trails and approximately 25.5 km Multi-use Trails that are maintained in the winter. All Boulevard Multi-use Trail are maintained, and an identified network of Multi-use Trails are maintained during the winter. Approximately 45 km of cycling routes are cleared in the winter.

The City also has a program for non-winter maintenance practices including street sweeping and vegetation management on trails. The City does not have a formal inspection program, although maintenance is completed based on inspections and information regarding the condition of trails provided by the residents/stakeholders. On-street bicycle routes are inspected through the Road Patrol program.

**Action 2C-1: Implement service standards for maintenance of cycling routes and trails based on trail type and the Minimum Maintenance Standards**

Service standards for cycling routes and trails within the City are governed under both the MMS and the Municipal Bylaw. This action outlines the year-round service standards





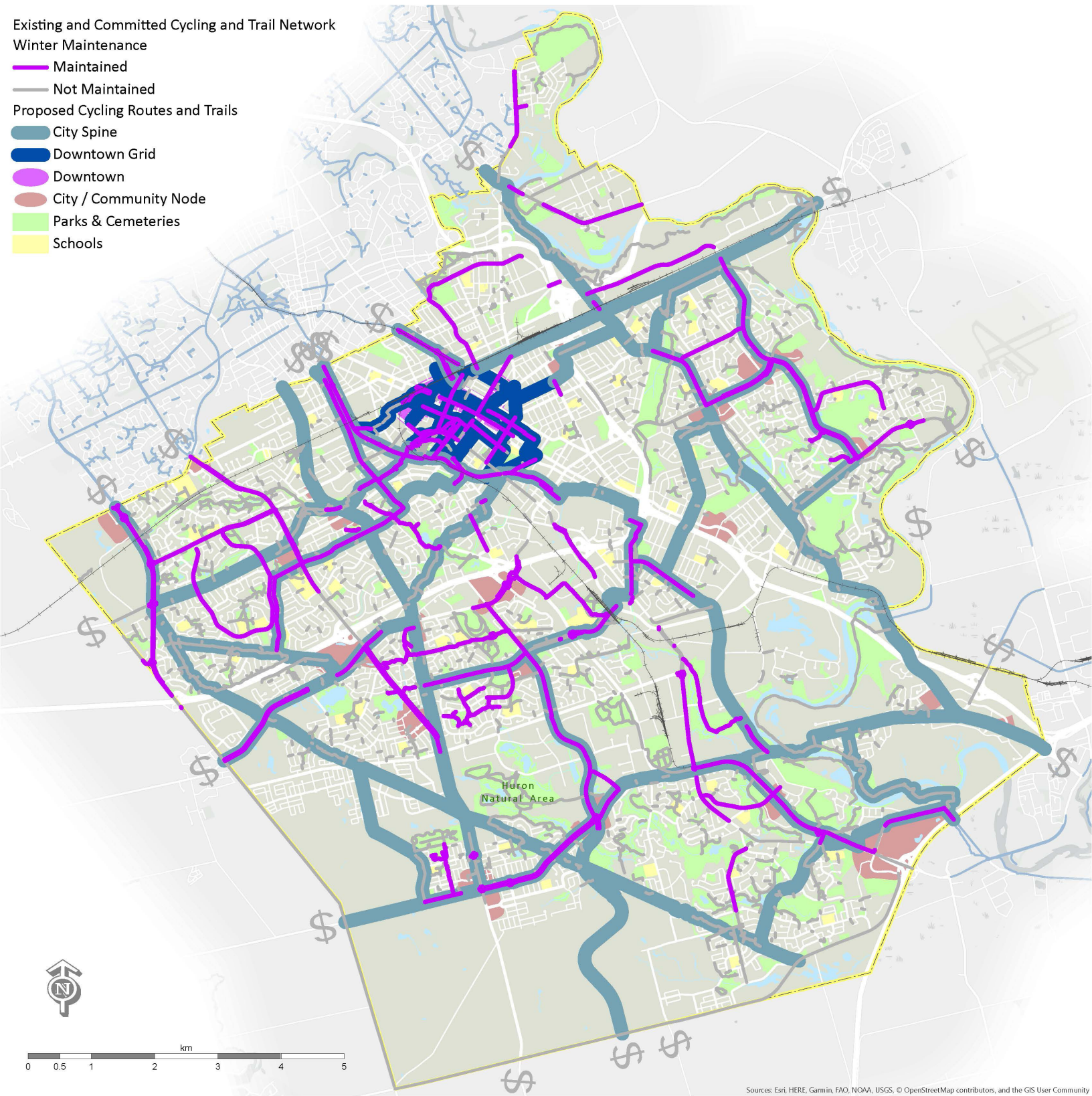
Figure 1 - Existing Winter Maintenance Network

Existing and Committed Cycling and Trail Network  
Winter Maintenance

- Maintained
- Not Maintained

Proposed Cycling Routes and Trails

- City Spine
- Downtown Grid
- Downtown
- City / Community Node
- Parks & Cemeteries
- Schools



Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



for cycling routes and trails in the City and presents the proposed winter maintenance network based on the short-term implementation plan for the cycling and trails network. **Figure 1** shows the existing winter maintenance network, and highlights all off-street trails and on-street cycling routes that are maintained during the winter.

### TRAIL WINTER MAINTENANCE .....

Currently, the City has an agreement with the Region to maintain Boulevard Multi-use Trails and the Spur Line trail. Major trails and minor trails typically are not maintained in the winter, but are maintained throughout the non-winter months.

The City has approximately 110 kilometres of off-street trails, approximately 21 kilometres of which are winter maintained. These trails are typically cleared within 24 hours of a snowfall. All other off-street trails are signed to indicate that they are not winter maintained. Off-street trails make up an important component of the City's transportation network and are used for recreational purposes year-round.

Maintaining all off-street trails during winter months will have a significant financial and operational impact. The Cycling and Trails Master Plan recommends that the City should continue to maintain the off-street trails that are currently maintained in the winter, plan to clear all new hard surface (asphalt or concrete) trails, and add approximately 5 kilometres of existing trails to the winter maintenance network.

Proposed winter maintenance practices for each trail type are outlined in **Table 1**, including snow clearing time frame, whether the process is reactive (applying de-icing material to the surface after a snow event) or proactive (applying de-icing material to the surface before a snow event), and the desired pavement condition. Trail service standards have been determined based on the MMS and the City's Bylaw. The governing document is dependent on the location of the trail.



Trail Type	Who	Timeframe	Winter Maintenance		Non Winter Maintenance	
			De-Icing Treatments (Reactive / Proactive)	Pavement Condition (i.e. clear to pavement)	Trail Grooming,	Pruning and Grass Cutting
Significant Trails	Parks Operations	24 hours or less	Monitor weather and patrol Treat for ice within 48 hours	Less than or equal to 8 cm to a 1 metre clear width	NA	1 metre clear width Every 2 to 3 weeks
Boulevard Multi-use Trails	Parks Operations	24 hours	Monitor weather and patrol Treat for ice within 48 hours	Less than or equal to 8 cm to a 1 metre clear width	NA	1 metre clear width Every 2 to 3 weeks
Multi-use Trails	Parks Operations	24 hours *	Monitor weather and patrol Treat for ice within 48 hours	Less than or equal to 8 cm to a 1 metre clear width	NA	1 metre clear width Every 2 to 3 weeks**
Major Trails and Minor Trails	NA	NA	NA	NA	2 to 3 times a year	0.5 metre clear width 2 to 3 times a year

\*All trails that are currently being winter maintained, all new Multi-use Trails, and 5 km of existing trails and cycling routes (**Figure 1**).

\*\*Prioritizing trails that provide direct access to schools or are part of the spine network

*Table 1 - Proposed Winter Maintenance Practices by Trail Type*





## ON-STREET CYCLING ROUTES WINTER MAINTENANCE .....

The MMS include a greater focus on maintenance standards for active transportation facilities, including bicycle lanes and sidewalks. Maintenance practices are based on the MTO road classification and facility type. The MMS requirements for addressing snow accumulation on bicycle lanes are as follows:

- After becoming aware of the fact that the snow accumulation on a bicycle lane is greater than the depth set out in the **Table 2**, to deploy resources as soon as practicable to address the snow accumulation; and
- After the snow accumulation has ended, to address the snow accumulation so as to reduce the snow to a depth less than or equal to the depth set out in **Table 2** to provide a minimum bicycle lane width of the lesser of 1 metre or the actual bicycle lane width.

If the depth of snow accumulation on a bicycle lane is less than or equal to the depth set out in **Table 2**, the bicycle lane is deemed to be in a state of repair in respect of snow accumulation. The formation of ice and de-icing practices specific to bicycle facilities is not separated out in the MMS. However, the section which sets out the standards for ice formation on roads does include text stating “this section applies in respect of ice formation on bicycle lanes on a roadway but does not apply to other types of bicycle facilities.”

Class of highway or adjacent highway	Depth	Time for bicycle lanes	Time for roadways
1	2.5 cm	8 hours	4 hours
2	5 cm	12 hours	6 hours
3	8 cm	24 hours	12 hours
4	8 cm	24 hours	16 hours
5	10 cm	24 hours	24 hours

*Table 2 - Snow Accumulation – Bicycle Lanes  
(Source: MMS for Municipal Highways)*





It is important to consider that through the implementation of the Cycling and Trails Network Plan several kilometres of new cycling routes and trails will be implemented. In order to achieve the MMS and the Municipal Bylaw, the City will need to consider operations and maintenance budgets, resources, and equipment.

**Figure 2** shows the proposed short-term winter maintenance network for cycling routes and trails. The proposed short-term winter network includes:

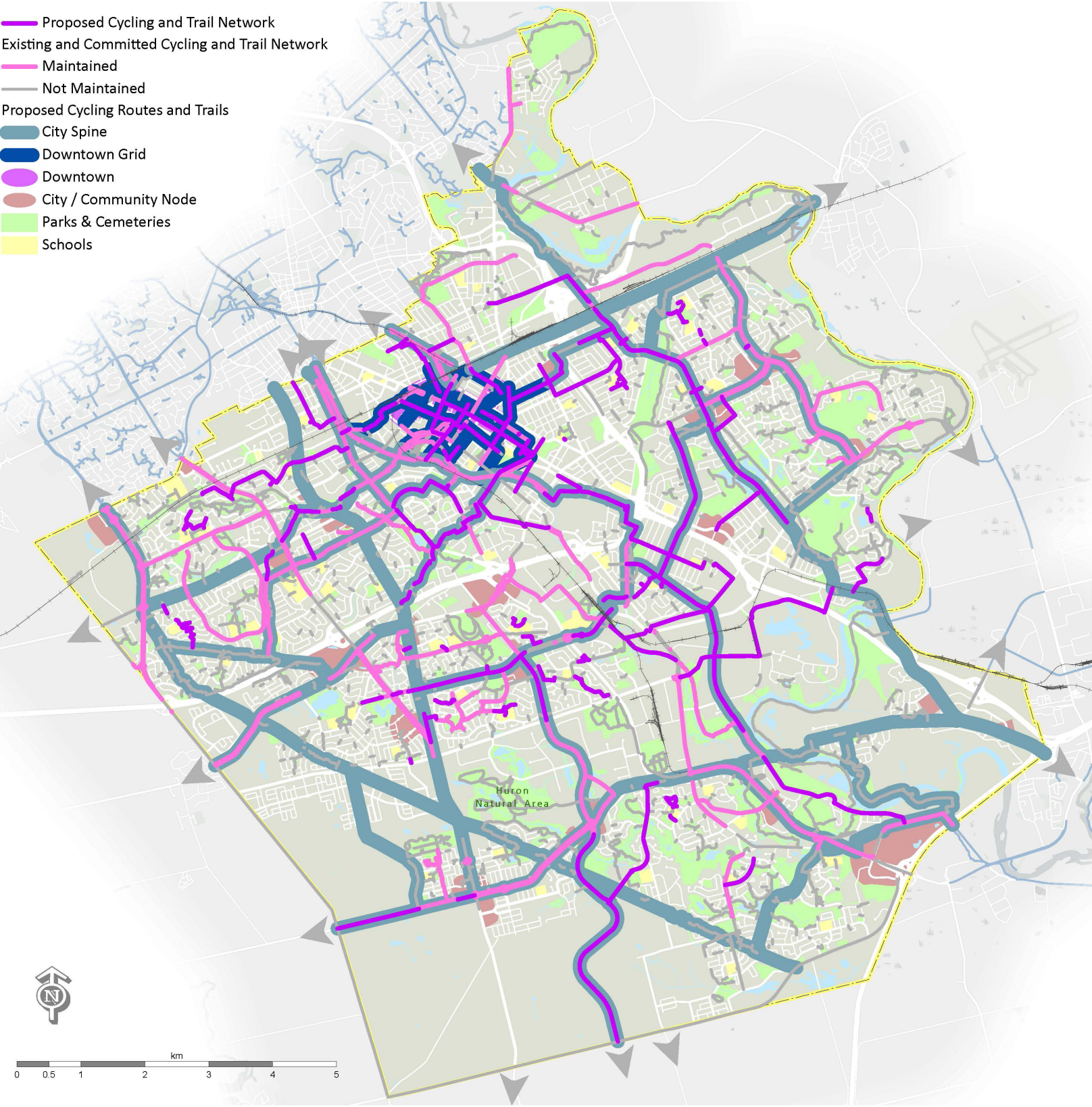
- All cycling routes and trails that are currently part of the existing winter maintenance network;
- An additional 5 km of existing cycling routes and trails have been added to the short-term winter maintenance network; and
- All cycling routes and trails that will be implemented as part of the short-term implementation plan.

It is important to note that the short-term winter network does not include facilities that will be implemented on all Regional roads, as the implementation plan for several of the proposed facilities is not known at this time. It is also assumed that through network planning and infrastructure design painted, bicycle lanes will be designed so that snow loading would not be required.



Figure 2 - Proposed Cycling and Trail Winter Maintenance Network

- Proposed Cycling and Trail Network
- Existing and Committed Cycling and Trail Network
  - Maintained
  - Not Maintained
- Proposed Cycling Routes and Trails
  - City Spine
  - Downtown Grid
  - Downtown
  - City / Community Node
  - Parks & Cemeteries
  - Schools







## YEAR-ROUND MAINTENANCE .....

Grooming, pruning, grass cutting, and landscape management can be especially important along cycling routes and trails, as they can become inaccessible due to overgrown vegetation. Significant trails, Boulevard Multi-use Trails, and Multi-use Trails are summer maintained every two to three weeks. Most Major Trails (stone dust) and some Minor Trails typically undergo turf management (grass cutting) during the summer two to three times a year. Recommended guidance for landscaping and vegetation management is seen in **Table 2**. Additional considerations are outlined below:

- Ensure that all landscaping elements are designed and maintained to ensure compatibility with the use of cycling routes and trails;
- Inspect and monitor cycling routes and trails to ensure they are clear of encroachment by vegetation, such as overgrown grass, bushes, or tree branches;
- Ensure that signage, bicycle signal heads, and sightlines are not obstructed by vegetation;
- After major damage incidents such as a flood or major storm, cycling routes and trails should be checked, and fallen trees or other debris should be removed as quickly as possible; and,
- Install root barriers during construction as a preventative measure to mitigate surface damages and hazards caused by plant roots.



### Action 2C-2: Review and consider giving streets with bicycle facilities a higher snow clearing priority

The cycling and trails network plan proposes approximately 38 km of neighbourhood bikeways on local streets within the city. These streets typically have a lower winter maintenance service standard as they are typically on Priority 3 snow clearing routes. Many of the routes identified on local streets have been identified as part of the City Spine network and provide connections to key destinations within the city. As these neighbourhood bikeways on local streets are implemented, the City should consider reviewing their current snow clearing priority to ensure that they are cleared within 8 hours (similar to a Priority 1 roadway).

It may not be necessary for all local streets dedicated as neighbourhood bikeways to be reprioritized. Therefore, as these new routes are implemented, the City can review each route and determine if reprioritization is required. It is suggested that the Transportation and Parks & Cemeteries departments work with the Roads & Traffic department annually to confirm the winter maintenance network. It is important to recognize that changes in snow clearing prioritization will have an impact on the annual operating budget. This will also need to be reviewed annually. Factors that should be considered when determining if a higher snow clearing priority is required include:

- Monitoring bicyclist volumes on neighbourhood bikeways in the summer to determine if the route is well-used as an indicator of winter use.
- Reviewing route connectivity:
  - Consider the role of the roadway within the network as a whole (i.e. is it part of the City Spine network?)
  - Does the street connect to other cycling routes and trails that are winter maintained?
  - Does the route provide a direct connection to a school, park, or community centre?





### Action 2C-3: Design cycling routes and trails to facilitate drainage, snow removal, and snow storage

The best way to facilitate the snow clearing and maintenance for cycling routes and trails is by incorporating it into roadway, bicycle facility, and trail design. The existing and proposed cycling routes and trails is made up of several different facility types, many of which have very different maintenance considerations, opportunities, and challenges. One of the most effective ways to mitigate snow storage and clearing is through the careful consideration of maintenance during the planning and design process.

The City's Complete Streets Guide, which provides design guidance on the different facility types, was developed based on input from the City's operations team to ensure year-round maintenance can be achieved in an effective and efficient manner. Following the recommendations of that document during the planning will help to ensure maintenance is considered early. Some of the planning and design elements that can be considered to accommodate year-round maintenance of cycling routes and trails are outlined below:

- **Design facilities to provide space for snow storage and for snow clearing equipment:** Facility width is a particularly important consideration for on-street cycling routes on both new streets and street rehabilitation projects. Space should be provided to allow for the desired width of the bicycle facility as well as a 1.8 metre storage space for snow on the side of the road and in the Furnishing Zone between the Pedestrian Through Zone and the bicycle facility. This will allow typical truck-mounted snowplows to plow snow into the designated storage space rather than the bicycle lane. It is also important that adequate space is provided to allow passage of snow clearing equipment.



- **Remove snow from the storage locations:** In some cases where a bicycle facility is adjacent to a sidewalk adjacent to a curb (curb face sidewalk) there is no space to store snow. Temporary storage can be located in the centre of the road along medians, in the boulevard and sidewalk buffer, and, in the case of protected bicycle lanes, in the road buffer, provided appropriate drainage is provided. Snow removal from these temporary storage locations may be necessary as part of efforts to reduce icing over of the bicycle facility due to freeze/thaw cycles. Snow removal can be particularly important in urban and city centre environments and can be completed using a variety of equipment, including loaders. However, snow removal can be very costly and wherever possible providing snow storage locations and strategic drainage in designs is preferred.
- **Restrict on-street parking during snow events:** Where a bicycle facility is located between on-street parking and the motor vehicle lane, parking along the road can be restricted during snow events to allow this space to become temporary snow storage space. While this may not be an option for all roads, it could be utilized along priority cycling routes in the winter. When motor vehicles are parked in the road during snow clearing the snow can accumulate in the bicycle lane but can also create a barrier making it challenging for smaller vehicles to exit their parking spot.
- **Design facilities to support the weight of maintenance equipment:** The designs of facilities, particularly Multi-Use Trails and Boulevard Multi-Use Trails, should be designed to include an appropriate base to support maintenance vehicles that will need to maintain this infrastructure. This base includes appropriate designed depths for granular as well as asphalt thickness along with appropriate specs.



**Action 2C-4:** Implement an inspection program to ensure adequate surface conditions and quality of cycling routes and trails

The City does not have a formal inspection program for trails, although maintenance is completed based on inspections, and information regarding the condition of trails is provided by the residents. On-street bicycle routes are inspected through the Road Patrol program; however, the issues they are patrolling for and identifying are typically done from the perspective of someone in a motor vehicle rather than a bicycle, which does not always recognize that what might be a hazard for a motor vehicle is different than what is a hazard for someone on a bicycle.



The City should consider combining the trails, cycling routes, and sidewalk inspection program. Inspecting these facilities on an annual basis would look specifically at maintenance considerations that impact people walking, rolling, and cycling. The City should consider developing a program that supports the use of volunteer inspectors.



Inspections for both cycling routes and trails should include surface condition, pavement markings, drainage, culvert crossings, bridges, vegetation, graffiti, and signage. Service standards would be required for the different facility types and the program description would need to be updated at regular intervals. Inspections must be properly documented to adequately stand up in a claims and court proceedings.



**Action 2C-5:** Consider the development of an app or tool to allow users to report maintenance issues

The City typically receives feedback on current maintenance practices including road and trail issues and hazards online or by phone call. Through feedback from residents and stakeholders, it was noted that the ability to report real time georeferenced maintenance issues through a mobile app would make reporting issues easier and more accurate. The City should look for opportunities to develop an app or mobile tool that allows users to report maintenance issues in real time while they are on-site and see the issue. This may require working with a third party to develop the tool.

**Action 2C-6:** Provide information about snow clearing timelines and practices for cycling routes and trails to provide clarification on which routes are winter maintained

Based on input from public and stakeholders, it was noted that there is a desire for more information on the current maintenance practices for cycling routes and trails within the City. The City has a webpage dedicated to winter maintenance that outlines current maintenance practices, identifies which trails are winter maintained, and provides timelines for snow clearing. The City should explore opportunities to enhance this information and look for opportunities, as technology comes available, to integrate real-time snow clearing information for cycling routes and trails. In the meantime, promoting the existing website and mapping tools can help ensure residents know where information on maintenance practices and snow clearing is available.





## ACTIONS ARE IDENTIFIED UNDER STRATEGY 2D:

- **Action 2D-1:** Implement the wayfinding strategy for cycling routes and trails that is consistent and integrated with surrounding municipalities and the Region of Waterloo
- **Action 2D-2:** Continue to update the City's cycling and trails network map as new infrastructure is implemented

## Strategy 2D: Make it Easy to Find the Way

Providing wayfinding and network information, including signage, pavement markings, and maps, that help people make decisions about how to navigate the cycling and trails network is key to help make it easy to find the way to destinations. Wayfinding is intended to make the cycling and trails network easier to navigate, identify the location of important destinations, and provide information about route type. Branding and naming routes in coordination with signage can also be an effective form of wayfinding. Wayfinding should be seamless, consistent and easy to understand to be effective. In 2019, the City developed the Wayfinding Guidelines for Parks & Trails and is currently piloting wayfinding signage on select on-street cycling routes in the city. Through the engagement process for the Cycling and Trails Master Plan, the public noted that a lack of consistency and integration across the region was a concern. Residents and stakeholders felt that the cities within the Region of Waterloo should have a consistent approach to cycling and trails wayfinding to avoid confusion.

**Action 2D-1:** Implement the wayfinding strategy for cycling routes and trails that is consistent and integrated with surrounding municipalities and the Region of Waterloo

The City adopted the Wayfinding Guidelines for Parks & Trails in 2019 and is currently piloting wayfinding signage on select on-street cycling routes in the City. The custom signs created are green signs with City's branding and provide directions to nearby destinations including the distance to destination and an estimate of travel time.

Throughout the development of the Cycling and Trails Master Plan, wayfinding had been identified as an important topic. It was a key theme and discussion topic at several public events and with the Community Working Group. The



key theme identified through this process was the desire for regional consistency throughout Waterloo Region to ensure that users have a seamless experience to travel to and from their destinations. This requires a consistent approach to wayfinding, including the colour and types of signs, destinations, and information provided. The cities of Cambridge and Waterloo currently use blue signs for bicycle wayfinding. To ensure regional consistency, it is recommended that Kitchener adopts the same colour and style and advocates for the Region to do the same.

This action includes the development of a wayfinding strategy that builds upon the City's current wayfinding practices as well as other practices within Waterloo Region to ensure regional consistency. Wayfinding is a decision-making process related to navigation and it is important to provide simple, clear, and intuitive information to help people navigate spaces effectively and intuitively. This helps people identify how they can navigate a city, neighbourhood, or active transportation network effectively from their present location to their destination.

A seamless, consistent, and easy-to-understand system of wayfinding for cycling is important. It can make a community's cycling and trails network easier to navigate, identify the location of important destinations, and provide information about facility type. Most importantly, wayfinding helps people make decisions about how to navigate a community. Wayfinding typically refers to signage and pavement markings which help to guide users to designated facilities and key destinations, along preferred routes, without the assistance of a smartphone or other mapping tools.

It is important to consider that many residents and visitors may not be familiar with the location of existing cycling routes or community destinations. A wayfinding system helps provide information about routes, but also helps to identify destinations that can be accessed via a given route or within a short walking or cycling distance. Wayfinding can also help





raise awareness of the distance and time that is required to travel to destinations within a community by walking or cycling.

## DESIGN PRINCIPLES

The wayfinding strategy is based on six overarching Design Principles:

- **Layout.** The layout of information should be duplicated for each sign type and the signage should clearly identify that the information is intended for people cycling. Layout features such as size, style, colours, and font choice, should be the same across the wayfinding network, even if it crosses multiple jurisdictions. This will help to make it clear which user the wayfinding is targeted to.
- **Simple.** The information that is being conveyed should be structured and presented to the intended audience in a clear and logical form. The information provided needs to be read quickly at the desired travel speeds. While people walking may have more flexibility and willingness to stop, people cycling need to be able to maintain an even pace as they take in the information and identify their desired route. Simple and easily read wayfinding signage should be provided over complex messaging, such as listing too many destinations or providing unnecessary additional text.
- **Predictable and Consistent.** When the information that is being shared is predictable, it can be quickly recognized, understood, and used. Predictability can relate to a number of aspects of wayfinding information, from the placement of a sign to the design of its contents. Predictability also means that understanding can be recalled for use in new situations and unfamiliar areas. In addition to predictable placement and content, the consistent use of an agreed list of road and destination names and references allows for users to confidently use wayfinding signage to reach destinations



and follow routes across different jurisdictions. A consistent set of references also helps users trust and learn the system and apply their knowledge to new journeys.

- **Branding.** A consistent brand along a corridor or network that is easily tied to local context is helpful to ensure that users know they are continuing along the same network. In some communities, the municipality's logo is often used to provide local community branding. Trail-specific branding could be considered for regional, provincial, and even national facilities that serve multiple jurisdictions, such as 'The Great Trail' (formerly known as the Trans Canada Trail).
- **Progression.** It is important to provide a manageable amount of information to people at one time, as too much information can be difficult to understand and be unnecessary. Too much information can make decision-making challenging and leave people second guessing themselves. In particular, wayfinding for cycling is similar to guide signing for drivers: information provided to riders who are moving must be provided in advance of where major changes in direction are required, repeated as necessary, and confirmed when the turning movement is complete.
- **Context.** The frequency and type of information that is provided on wayfinding materials will vary depending on the context in which the materials are being used. For example, there will be a difference between wayfinding that is being used along on-street cycling routes when compared to an off-street trail. On-street signage, for example, will typically be required at higher frequency due to the prevalence of intersections and opportunities for decision-making. Off-road facilities may require less frequent spacing serving to remind people walking and cycling of the pathway they are on and to communicate choices at intersections or where the pathway branches.





- **Maintenance.** As part of a wayfinding program, it is important to ensure that installed signage is inspected, maintained, and replaced when needed. The City must have a multi-year accessibility plan. Future sign maintenance/updates must be built into the plan to make sure that signs are kept up to date and are in working order. The capital and operational costs to maintain and replace signage needs to be incorporated into budgets. A GIS inventory of implemented signs identifying the location of different types of signage would be beneficial. Additional features that could be documented include, but are not limited to, maintenance dates, material type, and any other location details. This will help the City track operational and maintenance costs. This program will ensure that signage is free of vandalism, replaced if stolen, and maintained to address general wear and tear.

## SIGN TYPES

A comprehensive wayfinding system should consist of several types of signage and/or pavement markings to ensure a bicycle user is on the best route to their destination. The primary categories of cycling route and trail wayfinding signage are described below as is the context where they would be most appropriate.



- **Directional Signage (Cycling Routes and Trails):**  
On the approach of a decision point (typically an intersection), turn signage provides direction to select destinations through the use of directional arrows. Turn signage should not repeat information provided on signs for motorists to avoid information overload. Turn signage is particularly important when people cycling require different information than motorists, such as different destinations that may be of more interest to non-motorists or bicycle route decision. Turn signage should be located at a safe stopping distance before the



turn. To manage the amount of information provided on one sign, turn signs will typically contain up to three destinations.

- Confirmation Signage (Cycling Routes):** The confirmation signage is placed after decision points. These signs provide confirmation, reassure people cycling of their direction, and confirm additional destinations reached along the route. Confirmation signs will also provide information about other destinations that may be reached on the route. Confirmation signs should be located at 20–30 metres after turns and should be repeated for reassurance every 400 metres in urban areas and every 800 metres in rural areas. Because confirmation signs are located after turns where the information load is less distracting, it is possible to include more information about destination names and distances. Typically, three to four destinations would be shown in ascending order.
- Entrance Signage (Trails and Parks):** These signs are typically used at the entrance of a park or trail. They are used to greet visitors, let them know where they are, and identify that the City of Kitchener is owner of the park and/or trail. These signs are typically placed near the road entrance. The size of the sign will depend on the size of the park/trail. For example, a small parkette will have a small park identification sign. The main entrance will have a large sign with medium or smaller signs used at secondary entrances to identify the park/trail. The sign will include the name of the park or trail, the address, and the City of Kitchener logo.
- Identification Posts (Trails and Parks):** These signs have several functions, including highlighting interesting areas of the park or trail, identifying specific areas in the park like a sports field, splash pad or playground, and marking the distance on the trail. These posts can be used as the base structure to then be able to add other information signs. These signs are typically placed





beside the area that is to be highlighted and visible from the main path. Depending on the intended function of the sign there is a variety of information that can be included, such as:

- The area to be identified;
  - Address;
  - Distance;
  - Emergency and safety information;
  - Sponsor (if applicable);
  - Standard icon representing the area; and
  - City of Kitchener logo.
- **Tombstone Posts:** These posts provide simple and reliable information when visitors arrive to a park or trail. They show visitors where they are on the trail and explain what to expect when on the trail (sights to see, trail difficulty, services). These signs are located at arrival points in a park or at a trail, they should be easy to find, and are placed so people can get close to read the details. The information provided on the sign includes:

- *For Parks*

A list of amenities included in the park

Map (optional)

Address

City logo

- *For Trails*

Length of the trail  
How challenging it is – easy, medium, difficult

Average and minimum slope and cross-slope of the trail

Trail surface type

Amenities if any

Average and minimum width of the trail

Address

Map (optional)

City of Kitchener logo



## SPECIAL SITUATION SIGNAGE .....

- **Off-Network Waymarker (Cycling Routes):**  
Waymarkers can be used on non-designated routes to guide people cycling to the designated cycling network. They are intended to indicate short linkages to designated cycling routes from other roads or paths. They are not intended to be used to mark the route of a designated bicycle facility.
- **Interpretive/Interactive Signs (Trails and Parks):**  
These signs help people discover points of interest. They provide detailed information about a specific area, including historical information, nature facts, cultural interests, and interesting geography. These signs should be located close to the area being highlighted, and therefore may be along a trail but not actually on the trail. There needs to be room around the sign for small groups of people to get close without blocking the trail.
- **Signs Outlining Rules and Bylaws (Trails and Parks):**  
These signs inform trail visitors of the rules and bylaws, temporary changes in the parks and on the trails such as maintenance. They inform visitors of where they cannot park or where they can park with time limits, they identify street and stop signs, and other routes/cycling routes. Rules and Bylaws are posted in any area where rules and regulations need to be seen by visitors. Maintenance notices are put at the entrance to the park, at the parking areas and at the actual site that the maintenance is taking place. Street and stop signs are put where trails or paths intersect roadways or railroad tracks.

## SIGN PLACEMENT AND SITING .....

The frequency of signs and the provision of destination information will depend on the land use context and whether it is a cycling route or trail. It is important to ensure that signage is only provided when helpful, without creating sign overload.



## *Destination Hierarchy*

Connecting people to destinations is one of the key principles of providing wayfinding. A hierarchy of destinations allows transportation professionals to prioritize what information to include when all destinations will not fit on a sign. A destination hierarchy should be based on distance, the importance of a destination for riders in an area, and the provincial, regional, or local significance of a location. If a wayfinding program is being developed at a regional scale or intended to be consistent across neighbouring municipalities, then all municipalities should agree to the hierarchy.

### **Level 1 – Centres**

These can be regional, municipal, town, or urban centres depending on the context. They are characterized as being major centres of activity that offer a range of attractions and services and provide primary geographic orientation points. In Kitchener, these include, but are not limited to: downtown, Cambridge, Uptown Waterloo, and Fairview Park Mall. Level 1 destinations can be included on signs up to 8 kilometres away.

### **Level 2 – Major Attractions**

These trip attractors include rapid transit stations and exchanges, major tourist venues, regional parks, and post-secondary education institutions. Level 2 destinations are included on signs up to 4 kilometres away and can include, but are not limited to: destinations such as, Conestoga College, The Aud, Train Station (VIA/GO), City Hall, major parks, Kitchener Market, and hospitals.

### **Level 3 – Local Neighbourhoods**

These represent centres of a community with sub-regional/municipal/town importance. Local neighbourhoods provide a mixture of services used by local residents and visitors and should be determined in alignment with local Community Plans. They should be suitable reference points as they are well-known and unambiguous. Level 3 destinations are included on signs up to 2 kilometres away. Destinations on these signs can include, but are not limited to: community centres and recreation facilities, and public libraries.

### **Level 4 – Local Destinations**

In some contexts, the City may also wish to extend the wayfinding system to include local destinations. This may be useful to reflect the nature of lower density areas or to integrate cycling wayfinding with walking wayfinding on Multi-use Trails. They may also be useful to provide wayfinding signage on a route that does not connect Level 1–3 destinations. It is, however, important to consider the principles and in particular, the need to keep information simple and consistent. Overloading signs with information often has the unintended effect of



making them harder to understand and use. It is not practical to list all the possible local destinations across a community, but the following represents some classifications that may be useful:

- Secure bicycle parking facilities;
- Bikeshare stations;
- Recreational bicycle facilities;
- Shopping centres;
- Business parks;
- Parks, open spaces and sports facilities;
- High schools;
- Landmarks;
- Healthcare facilities;
- Public washrooms;
- Bicycle repair shops; and
- Civic facilities such as community centres, or libraries.

Level 4 destinations are included on signs up to 2 kilometres away.

### PAVEMENT MARKINGS

Some communities use pavement markings to supplement the wayfinding network. Such treatments can include coloured striping along the edge of trails, or symbols that show distances and remind people where the route goes. Shared lane markings (sharrows) can be used on neighbourhood bikeways to provide confirmation information. Wayfinding pavement markings can also be used at decision points. Wayfinding pavement markings should only be used as a supplement to signage, and not in place of it and regular inspection and maintenance should be conducted to ensure that the pavement markings have maintained their functionality with age.

### KITCHENER CYCLING AND TRAIL BRANDING

As the City expands upon the existing cycling and trails network, there are opportunities to brand complete and connected routes throughout the City. Branded routes should provide direct connections to destinations across the





City, be made up of high-quality AAA facilities, and be easy to navigate. It is suggested that routes that make up the City Spine network should be considered for branding. Branding could include colour coding and/or naming the routes. It will be critical to ensure that any branding, colour coding, and signage meets AODA requirements.

**Action 2D-2:** Continue to update the City's cycling and trails network map as new infrastructure is implemented

The City currently publishes a cycling and trails network map for the city. The intent of the map is to make planning bicycle trips easy and efficient. The map shows all of the on- and off-street cycling routes and trails, the location of secure bicycle parking facilities, and important information about cycling. The map is available online and in hard copy at City Hall and community centres. The City requests feedback from users on how the map can be improved in future versions. The City should continue to support on-going updates to the city-wide map, particularly as new infrastructure projects are built, and should look for opportunities to present route information that is more intuitive cyclists and trail users. In addition, as routes are branded, they should be incorporated into the network map. The City should also consider opportunities to share the network map through other emerging technologies to integrate other information and to publish the most recent information as quickly as possible.



## Strategy 2E: Investigate New Ways to Move Around

In recent years, the transportation sector has witnessed an unprecedented increase in both the pace and scale of new technological innovations. Included in these new technologies are Autonomous Electric Vehicles (AEVs), public bike share (both docked and dockless), e-scooter share, microtransit (or On-Demand Transit), and Mobility as a Service (MaaS). While these new technologies serve to offer an expanding suite of transportation choices, cities should be strategic in their implementation and strive to ensure these services support broader community goals. The City is currently conducting a Bike Share and Micromobility Feasibility Study looking at the opportunities for, and impacts of, scooters, e-bikes, and other new technologies within the City.

**Action 2E-1:** Continue to support a regional bikeshare and micromobility program and locate stations at high activity locations

Public bikesharing programs are well established in major urban centres throughout Canada. Within cities in the Waterloo Region, a pilot project is currently underway for a Public Bike Share system. Bike share programs provide community members with temporary access to a bicycle, through payment for short-term rental periods. Bike share programs around the world each have their own blend of unique characteristics which range from a variety of ownership and operation models, user experiences, distribution and integration with other modes and systems, among other factors. They can make it more convenient and enjoyable for those that walk or use transit daily and can also provide a service for tourists. The City should continue to work with partners to support the provision of a permanent, on-going, region-wide public bike share system.

## 2 ACTIONS ARE IDENTIFIED UNDER STRATEGY 2E:

- **Action 2E-1:** Continue to support a regional bikeshare and micromobility program and locate stations at high activity locations
- **Action 2E-2:** Work with partners to ensure sustainable trip planning information is widely accessible through an integrated transportation data system and innovative mobile applications

In addition to bike sharing, e-bikes and e-scooters are growing in popularity. Integrating a mix of different micromobility vehicles has been shown in other cities to attract a variety of users and maximize the investments in cycling routes and trails.

- **Electric-Assist Bike Share Equipment:** Companies that provide dock-based, dockless, and lock-to hybrid systems all have electric-assist models that can be integrated into a current or future bike-sharing program. All models require the rider to pedal the bicycle in order to receive an “assist” from the electric motor. The benefits of an e-bike-sharing system, or system that includes some e-bikes, include increased travel distance and assistance over hilly terrain.
- **Shared Electric Scooters:** E-scooters can vary in design, weight and speed, but are generally designed for an individual person and operated with a throttle. Shared electric scooters (“e-scooters”) are new to Canada and are currently allowed in Ontario through a provincial, five-year pilot program. Under the pilot, the province has set out the broad rules and requirements for e-scooters such as helmet requirements and minimum age. It is now up to the municipalities to pass bylaws to allow their use and determine where they can operate most safely in each unique environment.

**Action 2E-2:** Work with partners to ensure sustainable trip planning information is widely accessible through an integrated transportation data system and innovative mobile applications

Providing multi-modal trip planning information in one consolidated place can make planning trips by foot, bicycle, and transit convenient and effortless. As cities and communities are seeing new technologies that streamline the process of booking transportation to make it both convenient and trackable, many communities and agencies are making efforts to improve their services through the inclusion of new technologies. The City should work with partners such as Grand River Transit to research opportunities to support the development of a consolidated transportation database that can be shared. This type of tool may encourage the development of an innovative third-party mobile application for promoting transportation options and sharing existing data by allowing the data to be available in an open format. This could also include working with established providers of mobile applications to include the City of Kitchener in their existing applications. An example of some of the data that can be consolidated and shared includes walking, cycling and transit routes, trip planning and trip chaining information, bikeshare and micromobility stations, bicycle parking locations, bicycle repair stations, public washrooms, and real-time information on the availability of bicycle racks on approaching buses to name a few.







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**K I T C H E N E R**