

# cycling & trails

## MASTER PLAN

### IMPLEMENTATION REPORT

June 2020



**connecting**  
KITCHENER





## IMPLEMENTATION AND ADMINISTRATION STRATEGY

The strategies and actions developed as part of the Cycling and Trails Master Plan are intended to guide Kitchener’s capital, operations, maintenance, policy, and programming decisions as well as on-going resource requirements in support of cycling and trail use over the next 20 years and beyond. While the Plan has been developed as a long-term plan, it will require financial investment, staff resources, and an implementation strategy to prioritize improvements over the short-, medium- and long-term.

This report presents an implementation plan, including prioritization of the actions and network improvements identified over the immediate-term, short-term, medium-term, and long-term.

The implementation and administration strategy is action-oriented and recognizes the need to make early and on-going investments to build a culture for cycling and trail use in Kitchener. These early and on-going investments are identified as immediate-priorities over the next 3 years and other short-term priorities within the next 10 years that are intended to act as catalysts to build momentum for cycling and trail use through strategic investments in engineering as well as education and encouragement measures. The primary focus of the implementation and administration strategy are the steps that the City should take over the next 10 years. It is recommended that the City conduct a comprehensive review and update of the Cycling and Trails Master Plan after 10 years to monitor progress and review its priorities.

### COVID-19 STIMULUS FUNDING

As a result of the COVID-19 outbreak, it is anticipated that there will be significant stimulus funding opportunities from senior levels of government. The City should seek all opportunities to leverage additional funding sources and to accelerate implementation of the Cycling and Trails Master Plan.

## 1.1 IMPLEMENTATION PRINCIPLES

There were several guiding principles that were followed to develop the implementation and administration strategy for the Cycling and Trails Master Plan:

- **The Cycling and Trails Master Plan is one step towards achieving the long-term vision, but it is not the last.** The strategies and actions outlined in the Plan lay the groundwork for implementation. To see them achieved, additional capital and operational investments and resources are required. This includes investments in new infrastructure, upgrades to existing infrastructure, ongoing maintenance of existing and new facilities, resources for development of new standards and policies, funding for new programming and public education, and staff resources. Achieving the vision and goals will require the ongoing support of Kitchener and its partners, along with sustained investments.
- **The implementation and administration strategy focuses on short-term actions over the next 10 years.** The Cycling and Trails Master Plan is intended to be an action-oriented document, with the emphasis in the implementation and administration strategy on those early and on-going investments required in the 10 years to act as catalysts and build momentum for cycling and trail use. After 10 years, the City should conduct a comprehensive review and update of the Plan to monitor progress and revisit its priorities.
- **The Cycling and Trails Master Plan is a flexible and living document.** The Plan is intended to be a flexible document. For the proposed cycling and trails network there is some level of flexibility regarding the specific corridors that are recommended. The Plan presents recommendations and suggestions based on the engagement process and technical analysis; however, Kitchener will need to review the feasibility and desirability of each infrastructure project. The







- implementation of the Plan will also require ongoing public engagement as new projects are considered.
- **Kitchener will monitor, review, and update the Cycling and Trails Master Plan on a regular basis, as needed.** As the City begins implementing the strategies and actions of the Plan, a monitoring and reporting strategy will be needed to measure and communicate progress towards achieving the vision and goals. Reporting back on the indicators identified in the monitoring plan in Strategy 3E is one of the ways Kitchener will report on progress made in implementing the Plan. As Kitchener moves forward with implementing the Cycling and Trails Master Plan, the document will need to be updated to reflect the changing priorities and conditions over time.
- **Kitchener will engage in further public consultation to implement many recommendations of the Cycling and Trails Master Plan.** Many of the initiatives in the Plan require more detailed input and technical work. Kitchener will need to work closely with partners, residents and stakeholder groups to move forward with priorities in the Plan.

1.2 PRIORITIZING ACTIONS

Strategies for implementing each of the Plan actions are outlined in **Tables 1 – 3** on the following pages. These tables provide guidance with respect to:

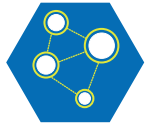
- **Timeframe.** Each action is identified as either:
  - **Immediate-term** – Within 3 years (implementation between 2020 and 2022)
  - **Short-term** – Within 3-10 years (implementation between 2023 and 2030)
  - **Medium-term** – Within 10-20 years (implementation between 2030 and 2040)
  - **Long-term** – 20 years and beyond.

Many actions will be implemented on an ongoing basis, in which case they are shown under each timeframe. It should also be noted that these priorities may change over time. If an opportunity arises to implement an action identified as a medium or long-term priority, such as through a redevelopment opportunity or other capital project, Kitchener will seek to maximize the opportunity.

- **Method of Implementation.** This column identifies how each action will be implemented: as a capital project, through ongoing operations and maintenance, or as a policy or programming initiative.
- **Responsibility.** This column suggests the primary and secondary responsibility for each action. Many actions are the primary responsibility of Kitchener (including the Transportation, Parks & Cemeteries, Roads & Traffic, and Communications departments, while other actions should be led by external agencies, such as Grand River Transit and the Region of Waterloo.
- **Order of Magnitude.** The assumed order of magnitude cost for each action has been provided. These costs include capital and/or operational depending on applicability. The number of dollar signs indicates a high-level cost assumed for each initiative:
  - **\$\$\$** – Major projects (\$1 million plus)
  - **\$\$** – Moderate (\$100,000 to \$999,000)
  - **\$** – Low (less than \$100,000)







THEME 1 | CONNECTIONS


 THEME 1   CONNECTIONS	TIMEFRAME				METHOD OF IMPLEMENTATION			RESPONSIBILITY		MAGNITUDE
	Immediate (0-3 years)	Short (3-10 years)	Medium (10-20 years)	Long-Term (20+ years)	Capital	Operations / Maintenance	Policy / Programming	Primary	Secondary	
Strategy 1A: Develop an Integrated Cycling and Trails Network										
Action 1A-1: Implement a downtown grid network of cycling facilities that are comfortable for people of all ages and abilities by 2022 - <i>Committed: 2019-2022 Strategic Plan</i>	√				√	√		Transportation	Parks & Cemeteries / Roads & Traffic	\$\$\$
Action 1A-2: Implement a city-wide grid network of cycling routes and trails based on the Complete Streets Guidelines		√	√	√	√	√		Transportation	Parks & Cemeteries / Roads & Traffic	\$\$\$
Action 1A-3: Work with other agencies to provide new grade separated crossings of major barriers to ensure regular spaced connections for cycling and trails are provided	Ongoing				√			Transportation	Parks & Cemeteries / Roads & Traffic	\$\$\$ w/other contributors
Action 1A-4: Develop a spot improvement program and work with the Region to make safety and network connectivity improvements throughout the city	√	√			√			Transportation	Roads & Traffic / Region of Waterloo	\$\$
Strategy 1B: Enhance and Expand the Trails Network										
Action 1B-1: Plan and design new and upgraded trails based on the recommended trail classification system and the Complete Streets Guidelines	Ongoing				√			Parks & Cemeteries	Transportation	\$\$ - \$\$\$
Action 1B-2: Implement a strategy to prioritize and upgrade walkways	√	√			√			Parks & Cemeteries	Transportation	\$
Strategy 1C: Improve Regional Connections										
Action 1C-1: Continue to work closely with neighbouring municipalities and the Region to ensure future cycling and trail connections are well integrated, high-quality, and maintained year-round	Ongoing				√			Transportation	City of Cambridge / City of Waterloo	\$
Strategy 1D: Improve Safety										
Action 1D-1: Continue to conduct safety studies of collisions involving people cycling and using trails to understand and monitor safety concerns and collisions	Ongoing						√	Transportation	Waterloo Regional Police	\$
Action 1D-2: Develop and implement a strategy for providing lighting on trails based on users, land use context, and trail classification.		√	√		√	√		Transportation / Parks & Cemeteries		\$\$\$
Strategy 1E: Improve Integration with Transit										
Action 1E-1: Ensure direct trail and cycling connections and that bicycle parking and micromobility stations are provided at ION rapid transit stations, iXpress bus routes, and GO stations	Ongoing				√			Transportation / Parks & Cemeteries	Grand River Transit	\$\$
Action 1E-2: Ensure the design of cycling routes and trails considers the location of, and access to, bus stops	Ongoing						√	Transportation	Grand River Transit	\$

Table 1 - Implementation Plan | Connections






 THEME 2   EXPERIENCE	TIMEFRAME				METHOD OF IMPLEMENTATION			RESPONSIBILITY		Magnitude
	Immediate (0-3 years)	Short (3-10 years)	Medium (10-20 years)	Long-Term (20+ years)	Capital	Operations / Maintenance	Policy / Programming	Primary	Secondary	
Strategy 2A: Design the City to Support Walking, Rolling, and Cycling										
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	Ongoing					√	√	Transportation, Parks & Cemeteries	Development Services	\$\$
Strategy 2B: Provide More Bicycle Parking										
Action 2B-1: Provide high quality bicycle parking and end-of-trip facilities at City of Kitchener owned and operated facilities	√	√			√			Transportation	Facilities Management	\$\$\$
Action 2B-2: Provide more bicycle parking and end-of-trip options throughout the City and at special events	√	√						Transportation		\$
Strategy 2C: Maintain the Cycling and Trails Network Year-Round										
Action 2C-1: Implement service standards for maintenance of cycling routes and trails based on trail type and the Minimum Maintenance Standards	√					√	√	Roads & Traffic / Parks & Cemeteries / Transportation	Region of Waterloo (where applicable)	\$\$
Action 2C-2: Review and consider giving streets with bicycle facilities a higher snow clearing priority		√				√		Transportation	Parks & Cemeteries / Roads & Traffic	Moderate
Action 2C-3: Design cycling routes and trails to facilitate drainage, snow removal, and snow storage	Ongoing						√	Transportation	Parks & Cemeteries / Roads & Traffic	\$\$
Action 2C-4: Implement an inspection program to ensure adequate surface conditions and quality of cycling routes and trails	√					√	√	Transportation / Parks & Cemeteries / Roads & Traffic	GIS	\$
Action 2C-5: Consider the development of an app or tool to allow users to report maintenance issues		√					√	Communications		\$
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	√						√	Parks & Cemeteries	Roads & Traffic	\$

Table 2 - Implementation Plan | Experience (1 of 2)




 THEME 2   EXPERIENCE	TIMEFRAME				METHOD OF IMPLEMENTATION			RESPONSIBILITY		Magnitude
	Immediate (0-3 years)	Short (3-10 years)	Medium (10-20 years)	Long-Term (20+ years)	Capital	Operations / Maintenance	Policy / Programming	Primary	Secondary	
Strategy 2D: Make it Easy to Find the Way										
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	Ongoing				√	√		Transportation / Parks & Cemeteries		\$
Action 2D-2: Continue to update the City's cycling and trails network map as new infrastructure is implemented	Ongoing						√	Transportation / Parks & Cemeteries		\$
Strategy 2E: Investigate New Ways to Move Around										
Action 2E-1: Continue to support a regional bikeshare and micromobility program and locate stations at high activity locations	√					√	√	Transportation	Regional Partners	\$
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		√					√	Communications / TIS / Third Party Providers		\$

Table 2 - Implementation Plan | Experience (2 of 2)




 THEME 2   CULTURE	TIMEFRAME				METHOD OF IMPLEMENTATION			RESPONSIBILITY		MAGNITUDE
	Immediate (0-3 years)	Short (3-10 years)	Medium (10- 20 years)	Long-Term (20+ years)	Capital	Operations / Maintenance	Policy / Programming	Primary	Secondary	
Strategy 3A: Raise Awareness and Promotion										
Action 3A-1: Use City and Region-wide campaigns to deliver positive messaging to promote cycling and trail use	√	√					√	Transportation / Parks & Cemeteries	Communications / Region of Waterloo	\$
Action 3A-2: Continue to look for opportunities to celebrate cycling and trail related events and new infrastructure projects	Ongoing						√	Transportation / Parks & Cemeteries	Communications	\$
Strategy 3B: Educate All Road Users										
Action 3B-1: Develop videos, pamphlets, and other tools to educate all road users on new cycling and trail infrastructure	Ongoing						√	Transportation / Parks & Cemeteries	Communications	\$
Action 3B-2: Continue to support programs and initiatives that educate and encourage people to use cycling routes and trails	Ongoing						√	Partners	Transportation / Parks & Cemeteries	\$
Action 3C: Integrate Policy and Funding										
Action 3C-1: Update the City's Development Manual to reflect and reference the Cycling and Trails Master Plan and other documents that support the implementation of cycling routes and trails	√						√	Transportation	Engineering	\$
Action 3C-2: Ensure adequate budget, funding, and staff resources are available to implement the Cycling and Trails Master Plan	Ongoing				√	√		City of Kitchener		\$\$\$
Strategy 3D: Establish Business Partnerships and Investments										
Action 3D-1: Work with partners to ensure research on the benefits of walking, cycling, and rolling are shared within the City organization and with local businesses		√					√	Transportation / Parks & Cemeteries	Communications	\$
Action 3D-2: Consider reviewing and updating the City's Transportation Demand Management Plan and TDM Checklist		√					√	Planning	Transportation	\$
Strategy 3E: Measure Success										
Action 3E-1: Develop a data collection and monitoring program, including a network of counters on cycling routes and trails to monitor activity	Ongoing				√		√	Transportation / Parks & Cemeteries		\$
Action 3E-2: Implement a reporting program to communicate results of the monitoring program on a biannual basis	√	√					√	Transportation / TIS	Parks & Cemeteries	\$
Action 3E-3: Develop a five-year action plan for implementing the Cycling and Trails Master Plan, to be updated on an annual basis to reflect changing priorities	Ongoing						√	Transportation	Parks & Cemeteries	\$\$

Table 3 - Implementation Plan | Culture





1.3 NETWORK PRIORITIZATION APPROACH

The Cycling and Trails Master Plan includes a long-term cycling and trails network. This section outlines the prioritization process used to identify priorities to improve the cycling and trails network over the immediate-term, short-term, medium-term, and long-term.

The identification of the network priorities was based on inputs from several sources, including the Community Working Group, stakeholders, and City staff. Additionally, an objective, systematic, GIS-based prioritization methodology was developed for the Plan. The prioritization methodology includes 13 criteria for the cycling and trails network. Each criterion contains scoreable information about a facility’s ability to address an existing or future need in Kitchener. Each criterion was scored on a 25-point scale as shown in **Table 4**. The results were combined to generate an overall score for each new or upgraded cycling route and trail in the City. By combining these criteria into an aggregated score, a ranked project list can be developed that reflects each project’s relative priority level for implementation. The results of the analysis as shown in **Figure 1**. It should be noted that these results were intended as an input to inform the decision-making process, and do not identify priorities on their own accord. The results of the analysis were not intended to be cast-in-stone but, rather, to provide a flexible tool to assist the City with its decision making.

Each of the criteria are described in further detail in the following section and summarized in the table below. This network prioritization sets the base score for the proposed projects.

- **Network Classification** – The cycling and trails network includes a classification system comprised of City Spine routes, a Downtown Grid network, and other connector routes. The classification of City Spines provides high quality All Ages and Abilities connections from various parts of the City and the Downtown Grid provides a connected network of All Ages and Abilities facilities within the heart of the City and is a short-term commitment from Council. Facilities located on routes that have been designated as City Spine and the Downtown Grid received the highest score.
- **Network Connectivity** – This criterion assesses the degree to which a proposed improvement completes the cycling and trails network. The network need was assessed based on a gap analysis that identified whether the proposed improvement filled a gap in the cycling and trails network.
- **Level of Protection** – The Cycling and Trails Master Plan focuses on developing a network that is comfortable for people of all ages and abilities. As a result, proposed cycling and trails facilities that provide the greatest level of protection for people cycling were assigned the highest score.

- **Type of Improvement** – The long-term cycling and trail network identifies routes where there are currently no existing facilities; however, there are locations where upgrades to existing facilities have been identified. This would typically be a location where the upgrade would make the facility comfortable for people of all ages and abilities. Upgrades to existing facilities received a higher score than new facilities.
- **Transit Integration** – The majority of transit trips begin or end by walking, rolling, or cycling. This criterion measures the degree to which the proposed improvement increases access to transit facilities. Improvements with the closest proximity to ION stations and transit stops received the highest score.
- **Population Density** – This criterion recognizes that areas with the highest population density are likely to have characteristics that promote more cycling and trail use. Based on Statistics Canada 2016 Census Data, proposed facilities located in census tracts with the highest population density received the highest score.
- **Walking and Cycling Demand** – This criterion assesses current levels of walking and cycling activity in each census tract in which the proposed cycling route or trail is located. This criterion is based on Statistics Canada 2016 Census Data, which provides data regarding the proportion of commute trips to work or school that are made by walking or cycling in each census tract. Improvements in areas with higher existing levels of walking or cycling are likely to result in higher usage.
- **Walking and Cycling Potential** – The Plan focuses on strategic investments in areas of the city with the highest potential for increased mode share for cycling and trail use in the future. This criterion assesses the greatest potential to increase based on diverse and mixed land use patterns, population density, and road network characteristics. Neighbourhoods with the highest potential are those that are the most supportive of walking, rolling, or cycling. In general, neighbourhoods with higher potential tend to be relatively dense with diverse land uses, are relatively flat, and have a dense and well-connected street network. Improvements in areas with these characteristics are likely to result in a higher demand cycling and trail use.
- **Equity** – The Plan focuses on strategic investments in areas with traditionally underserved populations. This criterion assesses the greatest potential to improve access to traditional underserved populations with a high equity need, including areas with a high concentration of lower income people, children, seniors, indigenous populations, and new immigrants. Areas with the greatest equity need were given the highest score.
- **Walkable Schools** – The City has identified schools that had the greatest percentage of students living within 1 kilometre of the school. Trails and cycling routes that are located within 400 metres of schools with a high proportion of residents within walking distance received the highest score.

- **Land Use Demand (Commercial and Growth Areas)** – Commercial areas and city nodes are important destinations for people walking, rolling, and cycling. This criterion examined whether proposed cycling routes and trails were located within or within 400 metres of the downtown, city nodes, community nodes, and neighbourhood nodes.
- **Land Use Demand (Schools, Parks, Community Centres, Arenas, and Libraries)** – Community facilities are also important destinations for people walking, rolling and cycling. This criterion examined whether proposed cycling routes and trails were located within 400 metres of these destinations. Facilities located within 400 metres of these destinations scored highest, followed by those located within 800 metres.
- **Piggybacking Potential** – This criterion recognizes that there are opportunities to implement the Cycling and Trails Master Plan as part of other already identified capital projects (i.e. road rehabilitation). Projects that are identified as part of the City's 10 year Capital Plan received the highest score, followed by projects that connect to a project in the City's 10 year Capital Plan.

Criterion	Indicator	Score
Network Classification	City Spine	25
	Downtown Grid	25
	Other	10
Network Connectivity	Connects directly to existing facility on both ends of project	25
	Connects directly facility on one end of project	15
	Does not connect to existing facility	5
Level of Protection	Separated Bicycle Lane (AAA)	25
	BMUT / MUT / New Crossing (AAA)	25
	Neighbourhood Bikeway (AAA)	25
	Major Trail	15
	Painted Bicycle Lane	10
	Constrained Corridor	5
Type of Improvement	Upgrade	25
	New	15
Transit Integration	Within 400 m of ION LRT station	25
	On Existing Bus Route	20
	Not On Bus Route, But Within 200 m of Bus Stop	15
	Not On Bus Route But within 400 m of Bus Stop	10
	Not On Bus Route But within 800 m of Bus Stop or ION LRT Station	5

Table 4 - Implementation Plan | Culture (1 of 2)

Population Density	Located in Area of High Density	25
	Located in Area of Moderate Density	15
	Located in Area of Low Density	5
Walking and Cycling Demand	Located in Area of High Walking and Cycling Mode Share	25
	Located in Area of Moderate Walking and Cycling Mode Share	15
	Located in Area of Low Walking and Cycling Mode Share	5
Walking and Cycling Potential	Located in Area of High Potential	25
	Located in Area of Moderate Potential	15
	Located in Area of Low Potential	5
Equity	Located in Area of High Equity Need	25
	Located in Area of Moderate Equity Need	15
	Located in Area of Low Equity Need	5
Walkable Schools	High Proportion (within 400m)	25
	Medium Proportion (within 400m)	15
	Low Proportion (within 400m)	5
Land Use Demand (Commercial and Growth Areas)	Within Downtown	25
	Within City Node	20
	Within 400 m of Downtown or City Node	15
	Within Community Node	15
	Within 400 m of Community Node	10
	Within Neighbourhood Node	5
Land Use Demand (Schools, Parks, Community Centres, Arenas, and Libraries)	Within 400 m of a community facility	25
	Within 800 m of a community facility	15
	More than 800 m from a community facility	5
Piggybacking Potential	Part of City's 10 Year Capital Plan	25
	Connects to Project in City's 10 Year Capital Plan	15
	Does Not Connect to City's 10 Year Capital Plan	5

Table 4- Implementation Plan | Culture (2 of 2)

1.4 NETWORK PRIORITIES

The results of the network prioritization analysis (**Figure 1**) were intended to be used as a tool to inform decision-making. These results were reviewed alongside input received from stakeholders, the Community Working Group, and City staff to identify short-, medium-, and long-term priorities for the cycling and trail network (**Figure 2**). It should be noted that short-term priorities include the implementation of a downtown grid of cycling facilities as an immediate-term priority for implementation over the next 3 years.



Figure 1 - Network Prioritization Results

Proposed Bikeway and Trails  
Network Prioritization

- Total Score
- ≤125
  - ≤150
  - ≤175
  - ≤200
  - ≤295
- Urban Growth Centre  
(Downtown)
- City Node
- Community Node
- Neighbourhood Node
- Park
- Schools

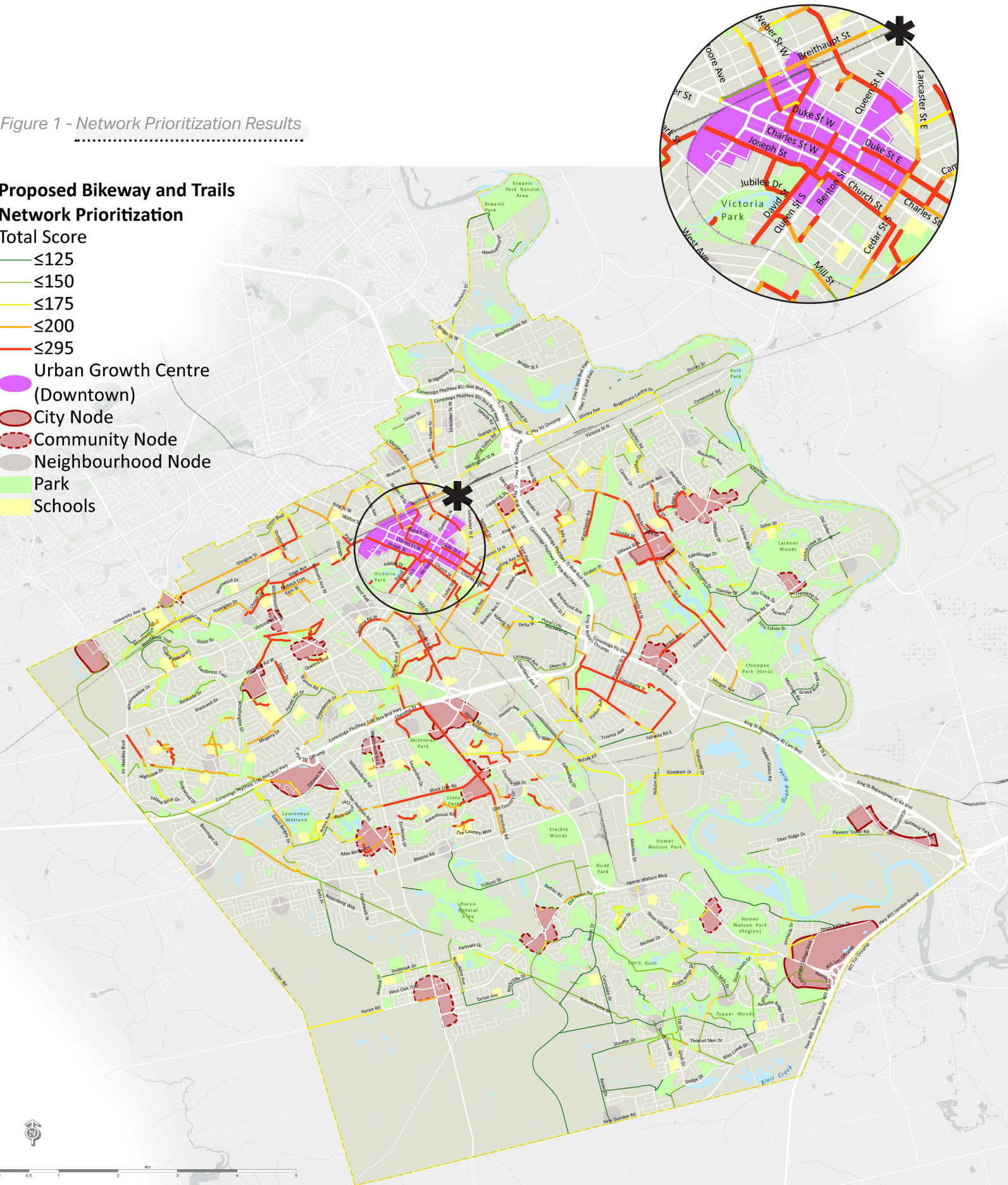
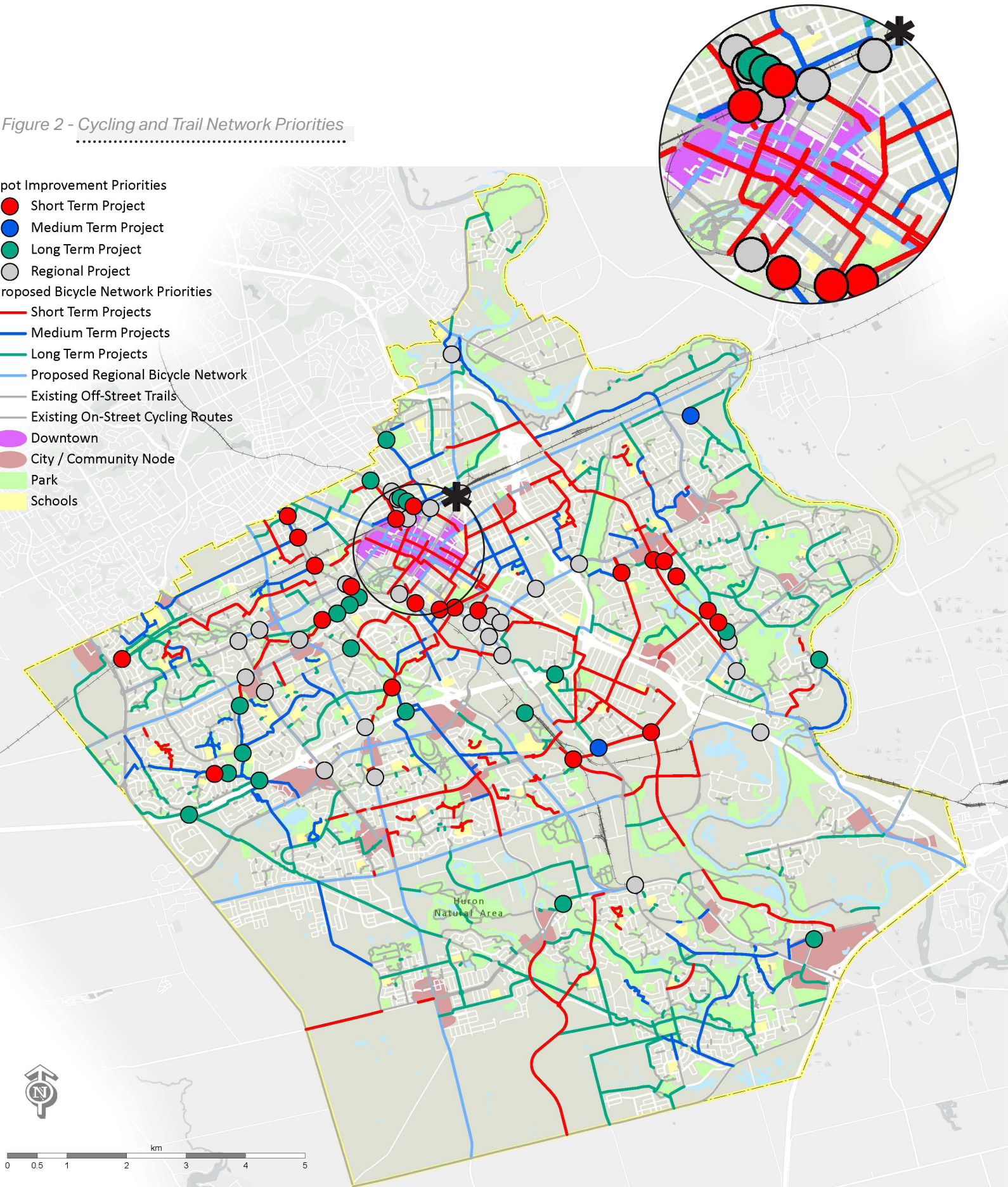


Figure 2 - Cycling and Trail Network Priorities

- Spot Improvement Priorities
- Short Term Project
  - Medium Term Project
  - Long Term Project
  - Regional Project
- Proposed Bicycle Network Priorities
- Short Term Projects
  - Medium Term Projects
  - Long Term Projects
  - Proposed Regional Bicycle Network
  - Existing Off-Street Trails
  - Existing On-Street Cycling Routes
  - Downtown
  - City / Community Node
  - Park
  - Schools







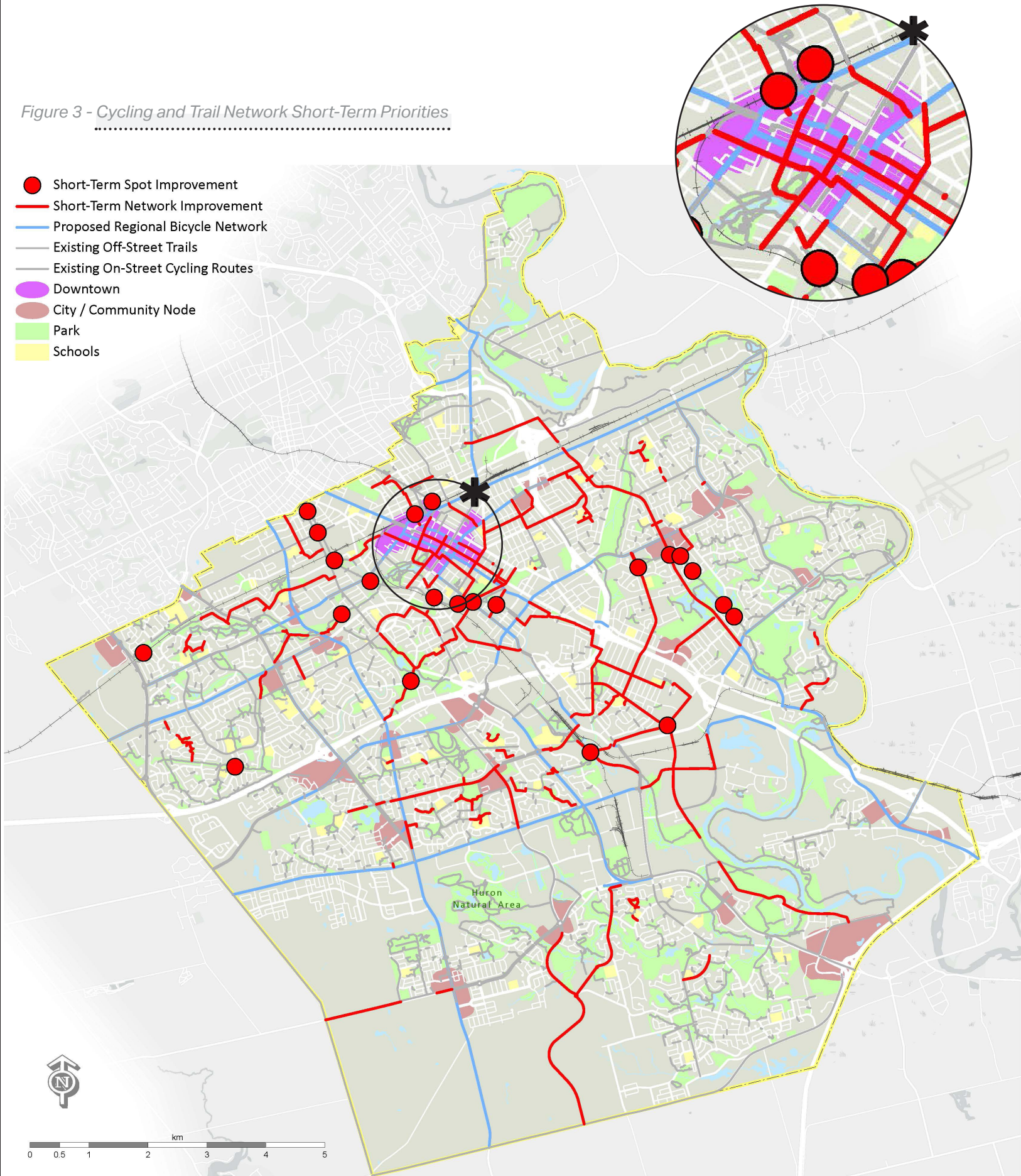
1.5 THREE-YEAR ACTION PLAN

The implementation and administration strategy is action-oriented and recognizes the need to make early and on-going investments to build a culture for cycling and trail use in Kitchener. This section summarizes a three-year action plan for the City and identifies the immediate-term priorities for the City to build rapid momentum for cycling and trail use. These three-year action plan includes a number of capital, operations, maintenance, policy, and programming initiatives for rapid implementation in each of the three themes of the Cycling and Trails Master Plan to ensure a combination of engineering, education, and encouragement initiatives.

CONNECTIONS

- Implement a **downtown grid network** of cycling facilities that are comfortable for people of all ages and abilities by 2022.
- Develop a **trails capital project plan** for implementing \$1 million of trails and walkways per year over the short-term (3-10 years) based on the short-term priorities.
- Ensure **cycling infrastructure is incorporated on projects** included in the City's 2019-2018 Capital Plan.
- Develop a **spot improvement program** and make safety and network connectivity improvements throughout the City, beginning with locations where trails cross roadways under City jurisdiction.

Figure 3 - Cycling and Trail Network Short-Term Priorities





## EXPERIENCE

- Ensure that **all new road projects and streets within new developments follow the recommendations of the Cycling and Trails Master Plan and the Complete Streets Guide.**
- Work with developers and other stakeholders to **ensure new developments are designed to accommodate walking, rolling, and cycling.**
- Install **high quality bicycle parking and end-of-trip facilities** at City-owned and operated facilities.
- Provide **more bicycle parking and end-of-trip options throughout the City** and at special events, including:
  - Develop a program for identifying locations, prioritizing, and implementing bicycle parking within the public right-of-way and at trails
  - Install bicycle parking at high activity bus stops and stations
  - Ensure bicycle parking recommendations outlined in the City's Zoning By-Law are implemented as part of new developments
  - Consider looking for partnership opportunities to expand BikeCheck service
- Implement **service standards for maintenance of trails and cycling routes** based on trail type and the Minimum Maintenance Standards.
- Develop and implement an **inspection program** to ensure adequate surface conditions and quality of bicycle and trail facilities.
- Provide **information about snow clearing timelines and practices** for trails and on-street bicycle facilities to provide clarification on which routes are winter maintained.
- Begin to **implement the wayfinding strategy** for cycling routes and trails.
- Continue to **update the City's cycling and trail network map.**
- Continue to **support a regional bikeshare and micromobility program** and locate stations at high activity locations.

## CULTURE

- **Promote new cycling and trail projects** to raise awareness of cycling and trail use.
- **Develop videos, pamphlets, and other tools** to educate all road users on new cycling and trail infrastructure.
- Support programs and initiatives that **educate and encourage people to use cycling routes and trails**, including:
  - Cycling into the Future
  - Active and Safe Routes to School
  - Cycling skills for adults
  - Grand River Accessibility Advisory Committee
- **Update the City's Development Manual** to reflect and reference the Cycling and Trails Master Plan and other documents that support the implementation of trails and cycling routes.
- Develop a **data collection and monitoring program**, including a network of counters on trails and bicycle routes to monitor activity.
- Implement a **reporting program** to communicate results of the monitoring program on an annual basis.
- Develop the first version of a **five-year action plan** for implementing the Cycling and Trails Master Plan, to be updated on an annual basis to reflect changing priorities.





1.6 COST ESTIMATES

Unit Costs

The Cycling and Trails Master Plan includes order-of-magnitude capital cost estimates and ongoing operating and maintenance cost estimates for the implementation and maintenance of cycling routes and trails. The cost estimates presented below are based on typical unit costs and recent construction and operation and maintenance pricing in the City of Kitchener and elsewhere in Waterloo Region and Canada. The unit costs that were used as the basis to generate cost estimates are shown in **Table 5**.

Facility Type	Capital Cost (per km)	Annual Operating and Maintenance Unit Cost (per km)
On-Street Cycling Routes		
Boulevard Multi-Use Trail (each-side)*	\$450,000	\$9,000
Separated Bicycle Lane / Cycle Track	\$1,000,000	\$60,000
Neighbourhood Bikeway	\$5,000	\$2,100
Painted Bicycle Lane	\$3,000	\$30,000 (loading and removal of snow off-site required) \$2,100 (loading and removal of snow off-site not required)
Paved Shoulder	\$3,000	\$2,100
Off-Street Trails		
Multi-Use Trail	\$450,000	\$8,500
Major Trail	\$150,000	\$1,500
Minor Trail	N/A	\$500
Walkway	\$450,000	\$8,500
Crossings		
Grade-Separated Crossing	\$20,000,000	\$7,500

\* Boulevard Multi-Use Trails are included as On-Street Cycling Routes as they are located within the road right-of-way.

Table 5 - Capital and Operating Unit Costs

Long-Term Costs

Cost estimates have been developed to identify the relative cost for implementing the Cycling and Trails Master Plan over the long-term. These cost estimates should be used only for planning purposes and should not be used for budgeting purposes. Cost estimates have been developed for all new and upgraded cycling routes and trails exclusively on City-owned roadways, and do not include any cycling routes or trails under the jurisdiction of the Region of Waterloo.

Additionally, the cost estimates only include projects requiring additional capital and operating and maintenance funding, and do not include projects identified and already budgeted as part of the City's 2019 – 2028 Capital Plan. The City should ensure cycling infrastructure is incorporated on projects included in the City's 2019 – 2028 Capital Plan, and should also continue to seek out new opportunities to work with developers, other agencies, and other levels of governments to establish cost-sharing agreements, or to seek grant opportunities in order to offset total project costs.

The capital cost for the City to implement the Cycling and Trails Master Plan is approximately \$80 million over the long-term, excluding projects included in the City's 2019 – 2028 Capital Plan and excluding grade separated crossings and other spot improvements (**Table 6**). In addition to the \$80 million cost of the plan for the network improvements, the City should create a spot improvement fund to budget for localized improvements. This includes approximately \$48.4 million for on-street cycling routes (including approximately \$20.8 million for Boulevard Multi-Use Trails), and \$30.7 million for off-street trails.

The annual operating and maintenance cost for the long-term cycling and trails network is approximately \$2.3 million of additional funding to maintain new and upgraded facilities (**Table 6**). It should be noted that this only includes the maintenance of City-owned facilities. For context, it is estimated that the current operating and maintenance costs





to maintain the existing network is approximately \$1.2 million annually. In addition, the City is responsible for maintaining facilities on roadways under the jurisdiction of the Region of Waterloo. It is anticipated that an additional \$1.9 million is required over the long-term to operation and maintain new facilities on Regional Roads. Although these long-term operating and maintenance costs are significant, it should be noted that it is anticipated that these costs will decrease on a unit basis over time as equipment and resources become more efficient. Nonetheless, annual operating costs are expected to increase relative to the overall plan as it is implemented.

A total cost of approximately \$80 million to implement the Cycling and Trails Master Plan translates to a cost of approximately \$34 million per 100,000 residents. As shown in **Table 7**, this per capita level of investment is similar to several other Canadian communities.

Facility Type	Km (Approx)	Capital Cost Estimate	Annual Operating and Maintenance Cost *
On-Street Cycling Routes			
Boulevard Multi-Use Trail**	46	\$20,870,000	\$440,000
Separated Bicycle Lane / Cycle Track	27	\$27,230,000	\$1,100,000
Neighbourhood Bikeway	36	\$200,000	\$80,000
Painted Bicycle Lane	31	\$110,000	\$70,000
Paved Shoulder	0	N/A	N/A
<b>Total On-Street Cycling Routes</b>	<b>140</b>	<b>\$48,410,000</b>	<b>\$1,690,000</b>
Off-Street Trails			
Multi-Use Trail	62	\$27,710,000	\$525,000
Major Trail	3	\$420,000	\$5,000
Minor Trail	0	N/A	N/A
Walkway	6	\$2,610,000	\$50,000
<b>Total Off-Street Trails</b>	<b>71</b>	<b>\$30,740,000</b>	<b>\$580,000</b>
<b>Total</b>	<b>211</b>	<b>\$79,150,000</b>	<b>\$2,270,000</b>

Table 6 - Long-Term Capital and Operating Cost Estimates

\* Cost estimates do not include operations and maintenance costs on Regional Roads.  
\*\* Boulevard Multi-Use Trails are included as On-Street Cycling Routes as they are located within the road right-of-way.

Municipality	Population	Proposed Plan Capital Cost	Cost per 100,000 people
Saskatoon	246,000	\$160,000,000	\$65,040,650
Cambridge*	130,000	\$66,000,000	\$50,769,230
Windsor	217,000	\$82,400,000	\$37,972,350
Winnipeg	705,000	\$262,000,000	\$37,163,120
Kitchener*	233,000	\$79,150,000	\$33,969,960

\* Kitchener and Cambridge are two-tier municipalities. In addition to these capital costs, it should be recognized the Region of Waterloo will also have investments on Regional roads which are not reflected as the overall cost estimate within the municipality.

Table 7 - Long-Term Capital and Operating Cost Estimates

The timeframe of the Cycling and Trails Master Plan depends on annual funding levels. Various funding scenarios were reviewed (**Table 8**). Based on existing funding levels of \$2.1 million per year, the plan would take nearly 40 years to implement. To achieve a 20-year horizon, the City would need to invest approximately \$4 million in new funding annually to implement the plan. However, it should be noted that the cost to the City can be significantly reduced by pursuing the funding strategies described in the following section.

To the extent possible, the City and Region should aim to invest in as many infrastructure improvements in the short-term as possible, because building a cycling culture in the City typically follows the implementation of high quality cycling infrastructure and, thus, to begin the building of that culture as soon as possible, near-term investments should be maximized.

Scenario	A (Current Funding Levels)	B (30-Year Plan)	C (25-Year Plan)	D (20-Year Plan)
Yearly Funding Allotment	\$2,100,000	\$2,640,000	\$3,166,000	\$3,957,500
Years to Complete Network	38 years	30 years	25 years	20 years

Table 8 - Long-Term Funding Scenarios



Prioritized Costs and Funding Strategy

As noted above, the long-term cost of the Cycling and Trails Master Plan is estimated to be approximately \$80 million over the long-term, excluding grade separated crossings. Cost estimates have also been developed based on the priorities shown in **Figure 2**. The prioritized cost estimates are summarized in **Table 9**. Based on these prioritized costs, the majority of the costs of the plan – approximately 70% - would be implemented over the medium-term or the long-term. The City can make significant progress with implementing the immediate-term and short-term priorities of the plan, which cost approximately \$24 million over the next ten years. The costs and funding strategy for the immediate-term and short-term projects are summarized below:

- **Immediate-term:** The implementation of the downtown grid network of cycling facilities that are comfortable for people of all ages and abilities is expected to cost approximately \$6.3 million in capital costs, along with approximately \$365,000 in annual operating and maintenance costs. It should be noted that, although the implementation of the downtown grid network is an approved Council priority, this network is not currently included in the City's 2019 – 2028 Capital Budget.
- **Short-term:** Additional short-term priorities for implementation within the next ten years are estimated to cost approximately \$17.7 million in capital costs, including \$12.2 million for on-street cycling routes and \$5.5 million for off-street trails, but excluding grade separated crossings. As noted previously, this does not include projects that are currently identified and budgeted as part of the City's 2019 – 2028 Capital Budget. This would result in a cost of approximately \$2.5 million in annual funding between 2023 and 2030. As noted previously, the City's current budget for cycling and trails is approximately \$2.1 million. As such, instead of requiring significant additional funding, the short-

term implementation can be achieved with a modest increase in current funding levels by strategically shifting how the City is prioritizing projects. To implement these short-term priorities, the City should identify a capital project list for off-street trails to be implemented within the trails capital budget of \$1 million per year, and a capital project list of on-street cycling routes to be implemented within a capital budget of \$1.5 million per year, including external sources.

	Proposed On-Street Cycling Routes *		Proposed Off-Street Trails		Total Combined Capital Cost
Timeline	Distance (km)	Capital Cost**	Distance (km)	Capital Cost*	
Immediate-Term	10	\$5,960,000	1	\$330,000	\$6,290,000
Short-Term	33	\$12,200,000	12	\$5,470,000	\$17,670,000
Medium-Term	33	\$12,880,000	17	\$7,630,000	\$20,510,000
Long-Term	61	\$17,370,000	40	\$17,310,000	\$34,680,000
Total	136	\$48,410,000	70	\$30,740,000	\$79,150,000

\* Includes Boulevard Multi-Use Trails  
\*\* Does not include some planned projects in the City's 2019-2028 Capital Budget (As identified by City Staff)

Table 9 - Prioritized Capital Costs

Along with the capital cost estimates for immediate-term and short-term projects, the City should ensure operating costs are included within the capital budgeting process. For every new capital project, the City should include an operating budget on a per kilometre basis for operating costs based on the unit costs in **Table 5**. It is anticipated that the annual operating cost to operate and maintain the cycling and trails network will be approximately \$2.9 million, an increase from approximately \$1.2 million today (**Table 10**).

	Existing (\$)	Immediate and Short-Term Projects (\$)
On-Street Cycling Routes	\$950,000	\$2,470,000
Off-Street Trails	\$230,000	\$380,000
Total	\$1,180,000	\$2,850,000

Table 10 - Immediate- and Short-Term Operating Costs





1.7 FUNDING AND LEVERAGE STRATEGIES

Although the Cycling and Trails Master Plan is estimated to cost approximately \$80 million over the long-term, these costs can be shared by pursuing external funding from other levels of governments, partnerships with other organizations and the development industry, and integration of cycling and trails projects with other plans and projects. This section describes several strategies that the City may consider to help leverage its investments and to maximize its ability to implement cycling and trail network improvements.

**COVID-19 FUNDING**

*As noted previously, it is anticipated that significant stimulus funding will be available from senior levels of government in response to the COVID-19 outbreak. The City should seek all opportunities to leverage this funding and to accelerate implementation of the Cycling and Trails Master Plan.*

Capital Planning

The City should incorporate the Cycling and Trails Master Plan recommendations into its Operating and Capital Budgets to ensure that projects are accounted for in the City's capital planning process. In this regard, the City should seek changes to its Operating and Capital Budget for 2020 and beyond to fund implementation of the Cycling and Trails Master Plan.

Integration

The City should integrate cycling and trail network improvements with other plans and capital projects, where possible. There are cycling and trail components associated with many upcoming and planned road renewal programs, development projects, and major capital projects which have been identified as a part of the City's cycling and trail network. The best opportunities to provide safe and convenient cycling

routes and trails is during the initial planning and design of these projects. Wherever possible, the City should seek out opportunities to integrate cycling routes and trails with new infrastructure or renewal and rehabilitation projects, such as major road resurfacing and servicing upgrades. The City needs to also make necessary amendments to existing policies and standards to ensure opportunities to integrate proposed cycling routes and trails are required as new developments occur.

External Funding Sources

The costs of implementing the improvements identified in the Cycling and Trails Master Plan can be significantly reduced by pursuing external funding sources and partnership opportunities for many of the identified projects. This section describes funding strategies and potential funding sources that the City may want to consider to assist in leveraging its investments, and maximize its ability to implement cycling and trail network improvements. The City regularly checks grant funding opportunities. The City should also pursue all available sources of funding for transportation infrastructure and programs, including the programs identified below (Note: as funding opportunities change regularly, the information in this section is subject to change):

- **Provincial Programs and Initiatives.** The Provincial Government administers the CycleON Action Plan 2.0 program, which promotes new, safe and high-quality cycling infrastructure through cost sharing with local governments. Some possible projects include new bicycle trails and bicycle lanes, improvements to existing cycling infrastructure, and providing bicycle lockers and other equipment that makes cycling a safer and more convenient option for travellers. The CycleON program provides funding for infrastructure which forms part of a bicycle network plan adopted by an Ontario local government.







- **Federal Funding.** There are several programs that provide funding for environmental and local transportation infrastructure projects in municipalities across Canada. Typically, the federal government contributes one-third of the cost of municipal infrastructure projects. Provincial and municipal governments contribute the remaining funds, and in some instances, there may be private sector investment as well.
- **Green Municipal Funds.** The Federation of Canadian Municipalities manages the Green Municipal Fund, with a total allocation of \$550 million. This fund supports municipal efforts to reduce pollution, reduce greenhouse gas emissions and improve quality of life. The expectation is that knowledge and experience gained in best practices and innovative environmental projects will be applied to national infrastructure projects.
- **Developers.** The City should explore opportunities for cycling infrastructure to be constructed as development occurs within Kitchener. This process could be formalized through an update to the City of Kitchener Official Plan or through individual negotiations.
- **Private Sector.** Many corporations wish to be good corporate neighbours — to be active in the community and to promote environmentally-beneficial causes. Bicycle routes and multi-use trails are well-suited to corporate sponsorship and have attracted significant sponsorship both at the local level and throughout North America.
- **Service Clubs.** In many communities, service clubs (such as the Rotary Club) have been involved in funding and building bicycle infrastructure and facilities including pathways and bicycle parking.
- **Advertising.** In regards to a bicycle route map, the City should continue to work with local business who are interested in providing advertising and therefore revenue to cover some or all of the cost of advertising.

1.8 IMPLEMENTATION RESOURCING

Based on experience in other cities, implementation of the Cycling and Trails Master Plan is anticipated to require approximately 3 Full-Time Equivalent (FTE) staff over the short-term. For the immediate-term and short-term implementation priorities being developed through the Cycling and Trails Master Plan, existing staff levels within Transportation and Parks & Cemeteries are anticipated to be sufficient to deliver collaboratively on the Cycling and Trails Master Plan. However, one of the existing staff - the Trails Project Manager (Parks & Cemeteries) - is currently a temporary position, with a finite contract end of December, 2020. To maintain the existing staff commitment and deliver on the plan, it is recommended that this position be made permanent.





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