

Appendix II. Implementation Plan

The implementation plan for the cycling network was developed by using a 20-year implementation timeframe, and aiming to coordinate most new infrastructure with scheduled road rehabilitation and major road construction projects. It takes into account the different funding streams for facilities along roadways, and those on parklands, as well as noting where facilities are funded by other parties, such as Metrolinx or a private developer.

The City of Mississauga funds its cycling infrastructure through two departments: Transportation and Works (within street rights-of-way), and Community Services (within parkland).

The total plan costs in **Table II-1** are based on stand-alone construction of all cycling facilities and upgrades:

Table II-1: Capital cost breakdown

Network Components	Cost
Primary Network	\$134,000,000
Secondary Network	\$34,000,000
Off-Road Trail Network (Community Services)	\$38,000,000
Off-Road Trail Road Crossings (Transportation & Works)	\$18,000,000
Major Crossing Structures	\$43,000,000
Total Network and Structures Cost	\$267,000,000

Note that all costs in this report are estimates expressed in 2018 dollars.

Bike Parking Program and Intersection Enhancement

The 2018 Cycling Master Plan recommends an annual bike parking program as well as intersection improvements. \$50,000 per year would allow the installation/replacement of approximately 100 bike parking spaces a year. \$150,000 would fund approximately three intersection improvements per year, at \$50,000 each, when coordinated with scheduled intersection improvements. There are approximately one to two intersection improvements programmed per year in the capital plan. The recommended funding could increase the rate of intersection improvements for cycling facilities.

Table II-2: Yearly cost of additional capital programs

Bike Parking Program	\$50,000
Intersection Enhancement Program	\$150,000
Total	\$200,000

Recommended Funding

The Active Transportation Office, within the Transportation and Works (T&W) department, funds cycling infrastructure on Mississauga-owned road rights-of-way. Funding for off-road trails outside of road rights-of-way is handled by the Community Services Department. **Table II-4** outlines the various funding scenarios for T&W, which would include most new cycling infrastructure in the primary and secondary networks.

A major consideration of these scenarios is the extent to which they take advantage of the T&W roads capital plan, which outlines scheduled road rehabilitation and major construction with a five-year horizon. Many proposed cycling facilities would realize cost savings by being coordinated with construction in the capital plan. These costs are most realized on projects that required moving curbs and adding new pavement, such as cycle tracks. Other cycling facilities, such as signed routes, or the addition of bike lanes where there is already sufficient pavement width, do not benefit as much from being implemented with the capital plan.

In addition to cost savings, building cycling facilities in conjunction with the capital plan would also mean faster implementation, less overall construction disruption, and less perception of “missed opportunities” and repeated road construction.

Table II-3: Plan costs (in conjunction with capital plan)

T&W network implementation cost (not coordinated with capital plan)	\$168,000,000
T&W network implementation cost (coordinated with capital plan)	\$135,000,000
Savings from full coordination with the capital plan	\$33,000,000
Length of new and upgraded primary and secondary routes	498 km

Table II-4: Funding scenarios

Scenarios:	A (current)	B	C	D
Funding level	21%	50%	75%	100%
Additional non-coordination penalty	\$26,070,000	\$16,500,000	\$8,250,000	\$0
Scenario network cost	\$161,070,000	\$151,500,000	\$143,250,000	\$135,000,000
Yearly capital cost	\$1,450,000	\$3,375,000	\$5,062,500	\$6,750,000
Years to complete	95	40	27	20
Parking and intersections	\$0	\$200,000	\$200,000	\$200,000
Yearly cost (with parking & intersections)	\$1,450,000	\$3,575,000	\$5,262,500	\$6,950,000
km per year (new and upgrades)	5	12	18	25

Scenario A (Current Funding)

This scenario represents how current capital funding to the Active Transportation Office affects the implementation of the proposed 20-year plan. It would represent a 21% funding level, resulting in taking 95 years to complete the network, and missing out on most of the savings in coordinating with the capital plan. This scenario does not include an extra annual \$200,000 for the parking and intersection programs.

Scenario B

This scenario represents a 50% funding level. At this level, much more coordination with road rehabilitation projects from the capital plan is

possible, and additional provincial and federal grants could potentially close the gap to full coordination. In this scenario, it would take 40 years to complete the entire network.

Scenario C

This scenario represents a 75% funding level. At this level, funding could be sufficient to take full advantage of coordination with the capital plan, though at the expense of building additional infrastructure outside of the capital plan. Additional provincial and federal grants could potentially bring this scenario in line with the full funding in scenario D.

Scenario D

This scenario represents full funding of the 20-year plan, realizing full savings from coordination with the capital plan, in addition to implementing infrastructure outside of scheduled road rehabilitation and major roadway construction. Any additional grants would accelerate completion to under 20 years.

Off-Road Trail Network Implementation

Trails through parklands are planned, budgeted and built by the Community Services Department, in coordination with the Active Transportation Office. Segments of trails which cross a street right-of-way are funded and built by the Transportation and Works Department.

Trail construction and rehabilitation has been consistent, and major network pieces are funded and under construction. Funding from the Region of Peel and Ontario Municipal Commuter Cycling program has been fairly consistent. Community Services seeks funding for construction on a project-to-project basis. The current levels of funding for Community Service's trails are currently considered

adequate. Following approval of the 2018 Cycling Master Plan, an update to the priority of projects will be undertaken by Community Services, in consultation with the Active Transportation Office.

The 2018 Cycling Master Plan is a high-level document, and Off-Road Trails are subject to refined costing when individual projects are planned and designed.

Major Crossing Structures Implementation

Major crossings are those that cross a 400-series highway, a railway, or a major river. Crossings may fall under the funding envelope of either the Transportation and Works department, or the Community Services department.

Major crossings require more detailed design work to get better refined cost estimates. This is beyond the scope of this plan. These structures are typically funded on a project-to-project basis, and thus not included in the 20-year funding scenarios.

Five-Year Coordinated Implementation Plan (2019 to 2023)

The map in **Figure II-1** and **Table II-5** represent the proposed 5-year implementation plan possible with adequate funding.

- Total 5-year cost: \$26,262,000
- Yearly Cost: \$5,252,400

This plan takes advantage of coordinating cycling facility construction with road rehabilitation.

The numbers on the map correspond to projects in the table. Only those projects that are on City of Mississauga roadways are listed. Those projects are categorized as follows:

- **Cycling Program**—These projects are listed on the current active transportation implementation plan.
- **Capital Plan**—These projects are in the transportation capital plan as scheduled road rehabilitation or major road construction.
- **New Road Construction**—These are new roadways to be built, and thus cycling facilities are built into the initial full cost, and do not require funds from the Active Transportation Office.
- **Metrolinx Plan**—These are roads that are either part of the Hurontario LRT project, or on GO Transit property, and are funded by Metrolinx.
- **Other Fund**—These projects are already funded by other sources.

The map also shows projects planned to be implemented within five years by the Region of Peel and the Community Services department (off-road trails). All projects are subject to change.

Figure II-1: Five-year implementation plan

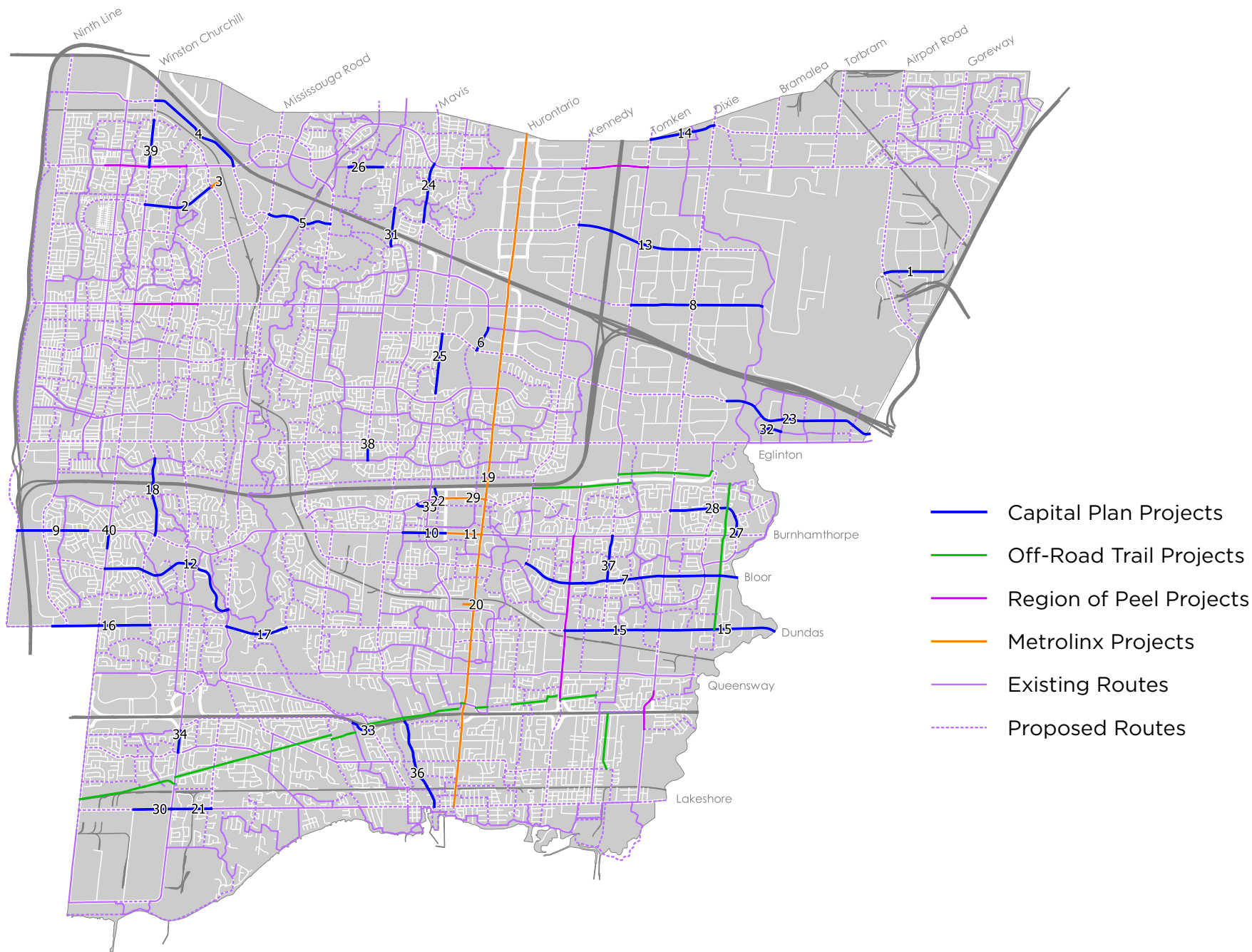


Table II-5: Five-year coordinated implementation plan

Map ID	Street	From	To	Length (km)	Facility Type	City of Mississauga Costs	Program
1	American Drive	Airport Road	Northwest Drive	1.3	Separated Bike Lane	\$286,000	Capital Plan
2	Aquitaine Avenue	Winston Churchill Boulevard	Millcreek Avenue	1.6	Separated Bike Lane	\$356,000	Capital Plan
3	Aquitaine Avenue	Millcreek Avenue	Meadowvale GO Station	0.3	Multi-Use Trail	\$0	Metrolinx Plan (GO Station Access)
4	Argentia Road	Winston Churchill Boulevard	Derry Road West	2.4	Separated Bike Lane	\$517,000	Capital Plan
5	Argentia Road	Mississauga Road	Creditview Road	1.4	Separated Bike Lane	\$312,000	Capital Plan
6	Avebury Road	Aldridge Street	Matheson Boulevard	0.6	Bike Lane	\$33,000	Capital Plan
7	Bloor Street	Central Parkway East	Toronto border	4.8	Cycle Track/ Separated Bike Lane	\$3,468,000	Capital Plan
8	Britannia Road East	Tomken Road	Etobicoke Creek Trail	2.9	Multi-Use Trail	\$1,687,000	Capital Plan
9	Burnhamthorpe Road West	Ninth Line	Loyalist Drive	1.6	Multi-Use Trail	\$905,000	Capital Plan
10	Burnhamthorpe Road West	Grand Park Drive	Duke of York Boulevard	0.9	Cycle Track	\$673,000	Capital Plan
11	Burnhamthorpe Road West	Duke of York Boulevard	Hurontario Street	0.8	Cycle Track	\$0	Metrolinx Plan (Hurontario LRT)
12	Collegeway	Winston Churchill Boulevard	Mississauga Road	3.6	Separated Bike Lane	\$783,000	Cycling Program
13	Courtneypark Drive East	Kennedy Road	Dixie Road	2.8	Multi-Use Trail	\$1,598,000	Capital Plan
14	Drew Road (extension)	Tomken Road	Dixie Road	1.4	Cycle Track/ Separated Bike Lane	\$0	New Road Construction

15	Dundas Street East	Cawtha Road	Toronto border	4.7	Cycle Track/ Separated Bike Lane	\$3,354,000	Capital Plan
16	Dundas Street West	Vega Boulevard	Glen Erin Drive	2.2	Cycle Track/ Separated Bike Lane	\$1,553,000	Capital Plan
17	Dundas Street West	Mississauga Road	Credit Woodlands	1.4	Cycle Track/ Separated Bike Lane	\$988,000	Capital Plan
18	Glen Erin Drive	Credit Valley Road	Burnhamthorpe Road West	1.7	Cycle Track/ Separated Bike Lane	\$379,000	Cycling Program
19	Hurontario Street	Brampton border	Park Street East	18.0	Cycle Track	\$0	Metrolinx Plan (Hurontario LRT)
20	John Street (extension)	Hurontario Street	200 m west of street	0.2	Multi-Use Trail	\$0	Metrolinx Plan (GO Station Access)
21	Lakeshore Road West	Southdown Road	Clarkson Road	1.2	Cycle Track/ Separated Bike Lane	\$829,000	Capital Plan
22	Living Arts Drive	Centre View Drive	Rathburn Road West	0.2	Bike Lane	\$0	New Road Construction
23	Matheson Boulevard East	Creekbank Road	Renforth Drive	3.4	Cycle Track/ Separated Bike Lane	\$2,468,000	Capital Plan
24	Mavis Road	Derry Road West	Courtneypark Drive West	1.3	Multi-Use Trail	\$760,000	Cycling Program
25	McLaughlin Road	Matheson Boulevard West	Parkwood Place/ Faith Drive	1.3	Cycle Track/ Separated Bike Lane	\$946,000	Capital Plan
26	Old Derry Road	Gazette Gate	Historic Trail	0.7	Paved Shoulder	\$67,000	Capital Plan
27	Ponytrail Drive	Rathburn Road East	Burnhamthorpe Drive East	0.4	Cycle Track/ Separated Bike Lane	\$302,000	Cycling Program
28	Rathburn Road East	Dixie Road	Ponytrail Drive	1.5	Cycle Track/ Separated Bike Lane	\$1,097,000	Cycling Program
29	Rathburn Road West	Duke of York Boulevard	Hurontario Street	0.9	Cycle Track/ Separated Bike Lane	\$0	Metrolinx Plan (Hurontario LRT)
30	Royal Windsor Drive	Avonhead Road	Southdown Road	0.8	Cycle Track/ Separated Bike Lane	\$603,000	Capital Plan

31	Second Line West	Sombrero Way	Donway Drive	0.9	Multi-Use Trail	\$0	Other Fund (MTO)
32	Skymark Avenue (extension)	Spectrum Way	Satellite Drive	0.5	Bike Lane	\$0	Other Fund (Developer)
33	South Sheridan Way	Indian Grove	Mississauga Road	0.5	Multi-Use Trail	\$282,000	Capital Plan
34	Southdown Road	South Sheridan Way	Truscott Drive	0.5	Multi-Use Trail	\$277,000	Cycling Program
35	Square One Drive (extension)	Rathburn Road West	Confederation Parkway	0.3	Multi-Use Trail	\$0	New Road Construction
36	Stavebank Road	Pinetree Crescent/ Pinetree Way	Lakeshore Road East	2.0	Bike Lane/ Advisory Bike Lane	\$122,000	Capital Plan
37	Tomken Road	Burnhamthorpe Road East	Bloor Street	1.0	Cycle Track/ Separated Bike Lane	\$719,000	Capital Plan
38	Wainscot Drive	Eglinton Avenue West	White Clover Way	0.4	Bike Lane	\$24,000	Capital Plan
39	Winston Churchill Boulevard	Bayberry Drive/ Crosscurrent Drive	Derry Road West	1.0	Multi-Use Trail	\$600,000	Capital Plan
40	Winston Churchill Boulevard	North of Burnhamthorpe Road West	Cornish Road/ Split Maple Gate	0.5	Multi-Use Trail	\$274,000	Cycling Program
				Total:	73.8	\$26,262,000	
				Per Year:	14.8	\$5,252,400	

Table II-6: Unit Costs

For reference, unit costs used are listed below. Unit costs on project tables may not be exact due to rounding.

Cycling Facility	Cost per km	Notes
Cycle Track or Separated Bike Lane: Road widening with full curb reconstruction	\$990,000	Includes required curb, gutter, and catch basin construction.
Cycle Track or Separated Bike Lane: Road widening coordinated with road rehabilitation project	\$720,000	Does not includes required curb, gutter, and catch basin construction, which would be included in overall project cost.
Separated Bike Lane: Addition or lane conversion on existing roadway	\$220,000	Addition of bike lane, buffer, and separation elements on existing pavement.
Multi-Use Trails and Off-Road Trails: Addition to boulevard or parkland	\$580,000	\$300,000 base cost per km + 30% (\$90,000) for engineering, survey, inspection, utility relocations, and contingency + \$90,000 for pole relocation (30% of poles per km is about 6 poles, at \$15,000 each) + \$100,000 for signalized intersections (based on 2 per km, at \$50,000 each). Consistent with previous Mississauga costs.
Bike Lane: Road widening with full curb reconstruction	\$870,000	Includes required curb, gutter, and catch basin construction. Consistent with previous Mississauga costs.
Bike Lane: Road widening coordinated with road rehabilitation project	\$350,000	Does not includes required curb, gutter, and catch basin construction, which would be included in overall project cost.
Bike Lane or Advisory Bike Lane: Addition or lane conversion on existing roadway	\$60,000	Markings and signage on existing roadway, consistent with previous Mississauga costs.
Paved Shoulder: Addition to edge of roadway	\$90,000	Includes grading and paving new asphalt extension.
Shared Route with Traffic Calming: Addition to existing roadway	\$50,000	Includes signage, limited markings, and traffic calming elements.