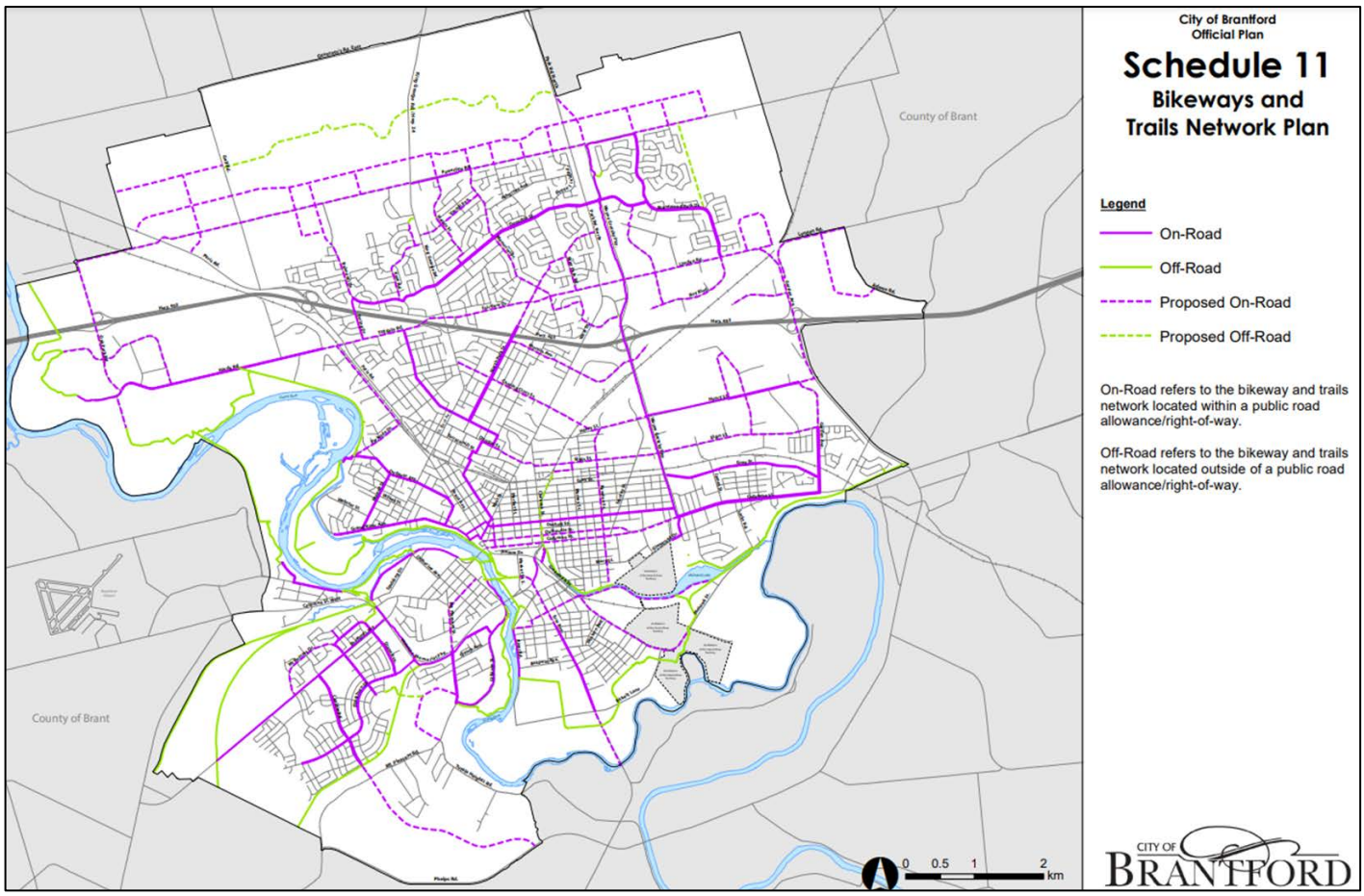
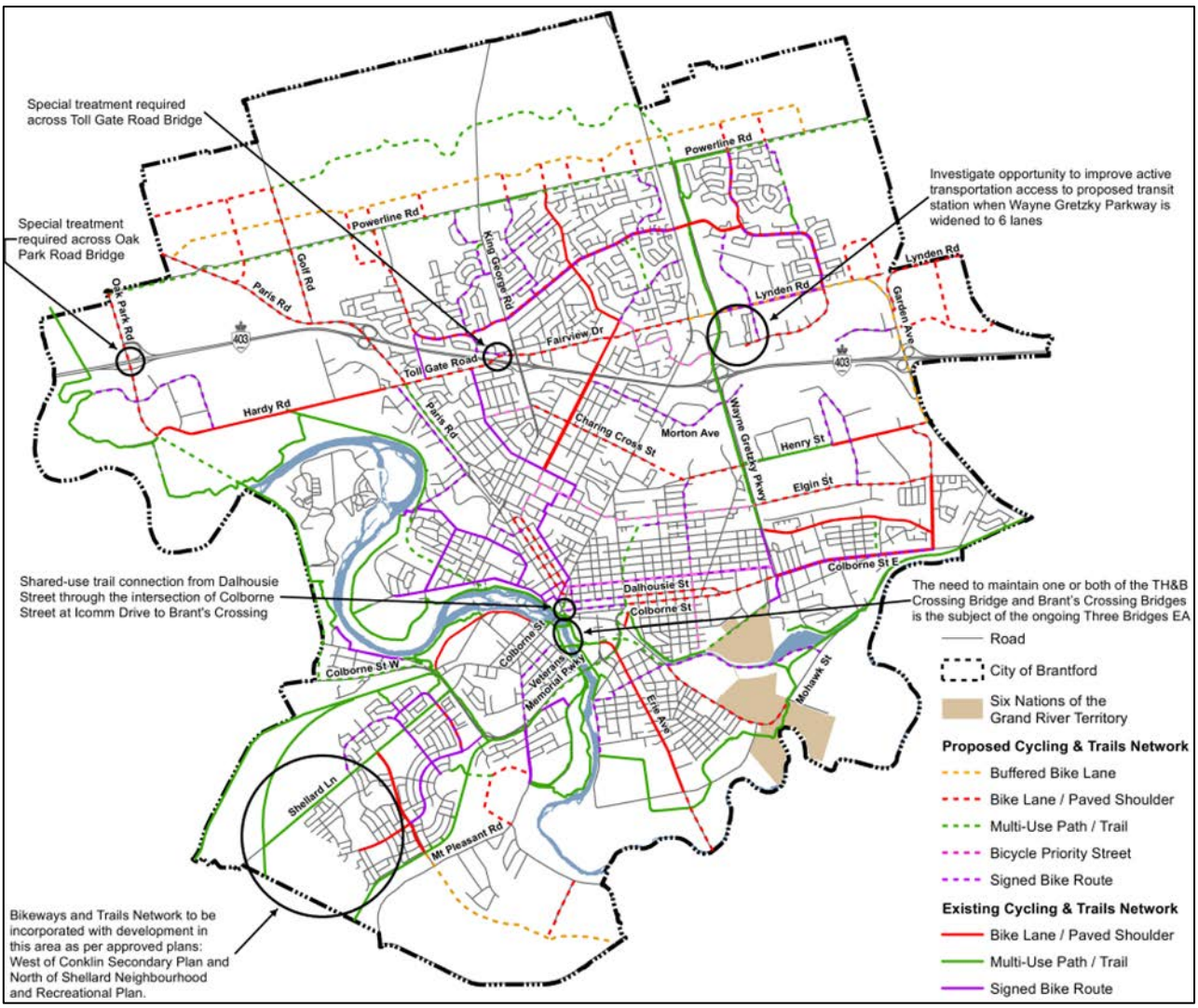
Appendix A: Brantford's Planned Cycling Network (2023)

Appendix B: Planned Active Transportation Network in Official Plan (2021)



Appendix C: Proposed 2051 Active Mode Network (TMP 2020/21)



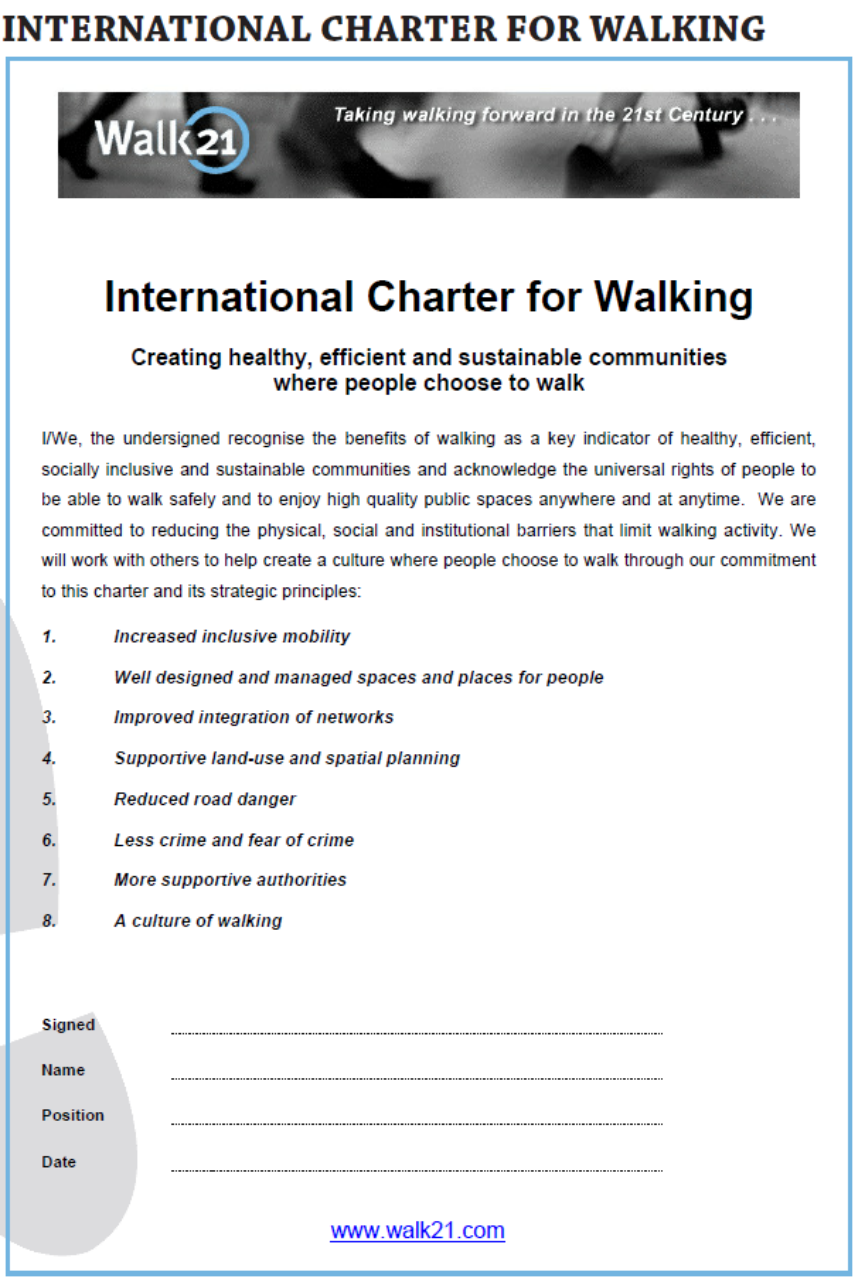
Appendix D: International Charter for Walking

Text in the following charter reads:

I/We, the undersigned recognize the benefits of walking as a key indicator of healthy, efficient, socially inclusive, and sustainable communities and acknowledge the universal rights of people to be able to walk safely and to enjoy high quality public spaces anywhere and at anytime. We are committed to reducing the physical, social, and institutional barriers that limit walking activity. We will work with others to help create a culture where people choose to walk through our commitment to this charter and its strategic principles:

1. Increased inclusive mobility
2. Well designed and managed spaces and places for people
3. Improved integration of networks
4. Supportive land-use and spatial planning
5. Reduced road danger
6. Less crime and fear of crime
7. More supportive authorities
8. A culture of walking

www.walk21.com



INTERNATIONAL CHARTER FOR WALKING

Walk21 Taking walking forward in the 21st Century . . .

International Charter for Walking

Creating healthy, efficient and sustainable communities where people choose to walk

I/We, the undersigned recognise the benefits of walking as a key indicator of healthy, efficient, socially inclusive and sustainable communities and acknowledge the universal rights of people to be able to walk safely and to enjoy high quality public spaces anywhere and at anytime. We are committed to reducing the physical, social and institutional barriers that limit walking activity. We will work with others to help create a culture where people choose to walk through our commitment to this charter and its strategic principles:

1. *Increased inclusive mobility*
2. *Well designed and managed spaces and places for people*
3. *Improved integration of networks*
4. *Supportive land-use and spatial planning*
5. *Reduced road danger*
6. *Less crime and fear of crime*
7. *More supportive authorities*
8. *A culture of walking*

Signed .....

Name .....

Position .....

Date .....

www.walk21.com

Appendix E: On-line Survey (June 2022)

The following graphics convey the text and images of the survey that was conducted. Solely the text of the questions is included following these graphics on pages 6 to 8 of Appendix E.

Active Transportation

Let's Talk Brantford

Active Transportation Master Plan Survey

The City of Brantford is conducting an Active Transportation Master Plan study to enhance walking and cycling facilities throughout the municipality. The City's existing plans are documented in the 2020 Brantford Transportation Master Plan Update and the Parks & Recreation Master Plan (2018). A few minutes of your time to complete this survey is appreciated – and we welcome you to share this survey link (Active Transportation Master Plan Online Survey) with other people. The data collected will help to identify issues and determine priority projects.

Walking in the following questions includes the use of mobility devices such as wheelchairs and mobility scooters (which look like a chair on a platform with 4 small wheels).

Cycling in the following questions includes the use of newer transport devices such as e-bikes and electric scooters (which look like a skateboard with a steering stick).

Personal information on this form is collected under the authority of Section 10(1) of the Municipal Act, 2001, S.O. 2001, c.25, as amended and will be used to help inform City of Brantford staff on future Active Transportation projects. Questions about this collection should be directed to the Communications and Community Engagement Department for the City of Brantford.

How frequently do you walk in Brantford during pleasant weather (whether warmer seasons or sunny winter days) as recreation or for task-oriented trips?

Questions	daily	a few times a week	a few times a month	rarely	never
a) for recreation or exercise.					
b) to get to appointments/ do errands/ access transit/ etc. – including school, work, shopping, visiting people.					

Based on your experience, please rate the three following characteristics of sidewalks/ multi-use paths along streets (not trails through greenspaces) in Brantford:

Questions	always	usually	sometimes unsatisfactory	often unsatisfactory
a) Continuity – Sidewalks exist on streets I want to walk along.				
b) Condition – Sidewalks that do exist are typically in good condition.				
c) Winter maintenance – Sidewalks that do exist are typically cleared well in winter.				

I am typically satisfied with the ease of crossing streets as a pedestrian at traffic signals; this includes signage, markings, and the timing provided to cross the street.

(Choose any one option)

- ☐ Yes
- ☐ No (please explain) _____

I am aware that Brantford has recently begun installing new pedestrian crossings called a "PXO" or Pedestrian Crossover (image below) that give pedestrians the right-of-way to cross streets using only signage and/or flashing yellow warning signals.

(Choose any one option)

- ☐ Yes
- ☐ No
- ☐ It sounds familiar

Active Transportation

Let's Talk Brantford

Please identify any locations or intersections that, in your opinion, require devices to stop traffic (new signal, signage, etc.) to make pedestrian crossings easier:

If you ride a bicycle, even occasionally, please identify how you use it (select all that apply):

(Choose all that apply)

- ☐ Short recreational rides by yourself or with others
- ☐ Longer endurance rides
- ☐ Nearby trips/ errands – including to neighbours, school, work, or shopping
- ☐ Longer distance trips/ errands
- ☐ I don't ride a bicycle
- ☐ Other (please explain)

Of the various factors listed below, what are your 'top 4' that are most critical to improving the cycling experience in Brantford:

(Choose all that apply)

- ☐ Improving gaps in the network - missing bicycle lanes/ trails
- ☐ Adding a buffer/ barrier to painted bicycle lanes
- ☐ Cyclists' ability to operate a bicycle – myself or others
- ☐ Car drivers' behaviour/ providing space for cyclists
- ☐ Trail crossings of streets
- ☐ Design of painted bicycle lanes through intersections
- ☐ Winter maintenance of bicycle lanes and/or trails
- ☐ Summer maintenance of bicycle lanes and/or trails
- ☐ Integration with transit
- ☐ Other (please explain)

Regardless if you ride a bicycle frequently or not, please identify SPECIFIC destinations you might ride to IF cycling infrastructure was enhanced (which specific parks, schools, employment areas, shopping areas, etc.):

Active Transportation

Let's Talk Brantford

Please identify any locations where existing trail crossings of streets are difficult (either walking or cycling) because of busy street traffic:

Please identify any existing on-street bicycle lanes in Brantford (listed below) that you feel should be enhanced with additional separation from auto traffic as per the following design examples of

1) Painted Buffer

2) Painted Buffer with bollards,

3)Buffer with curbing, and

4) Multi-use path.

Street	Existing design is good	Painted buffer	Painted buffer with knock-down sticks (bollards)	Buffer with curbing (rubber or concrete)	Replace on-street bike lane with multi-use path
Albion Street					
Ballantyne Drive					
Blackburn Drive					
Conklin Road					
Diana Avenue					
Dunsdon Street					
Erie Avenue					
Garden Avenue					
Grey Street					
Hardy Road					
Henry Street					
Memorial Drive					
North Park Street					
Oxford Street					

Active Transportation

Let's Talk Brantford

Cycling education would be most successfully provided to youth in Brantford:

(Choose any 1 options)

- [ ] As a program within schools at approximately the Grade 5 level, with parents paying $20 per child
- [ ] As a program provided at Recreation Centers, with parents paying $100 per child
- [ ] Cycling education is important, and it would be ideal to have the City fund this program
- [ ] I don't think cycling education is necessary for youth in Brantford

Is there anything else you'd like to share that the survey has not addressed, or ask a question about Active Transportation in Brantford?

Demographic Questions

The following questions provide data regarding participants and is necessary for the determination of whether the individuals in a particular study are a representative sample of the target population for generalization purposes. Your responses will be kept confidential.

Gender

(Choose any one option)

- [ ] Female
- [ ] Male
- [ ] Transgender Female
- [ ] Transgender Male
- [ ] Gender Variant/Non-Conforming
- [ ] Not listed
- [ ] Prefer not to answer

How old are you?

How many people live in your household?

Active Transportation

Let's Talk Brantford

How many people in your household have a bicycle?

Postal Code

or Nearest Intersection

Contact Information

You are welcome to provide a name and email address below to receive follow-up emails on this study or for us to respond to any questions you may have.

Name:

Email address:

Active Transportation Master Plan Survey

The City of Brantford is conducting an Active Transportation Master Plan study to enhance walking and cycling facilities throughout the municipality. The City's existing plans are documented in the 2020 Brantford Transportation Master Plan Update and the Parks & Recreation Master Plan (2018). A few minutes of your time to complete this survey is appreciated – and we welcome you to share this survey link (Active Transportation Master Plan Online Survey) with other people. The data collected will help to identify issues and determine priority projects.

> Walking in the following questions includes the use of mobility devices such as wheelchairs and mobility scooters (which look like a chair on a platform with 4 small wheels).
>
> Cycling in the following questions includes the use of newer transport devices such as e-bikes and electric scooters (which look like a skateboard with a steering stick).

Personal information on this form is collected under the authority of Section 10(1) of the Municipal Act, 2001, S.O. 2001, c.25, as amended and will be used to help inform City of Brantford staff on future Active Transportation projects. Questions about this collection should be directed to the Communications and Community Engagement Department for the City of Brantford.

1. How frequently do you walk in Brantford during pleasant weather (whether warmer seasons or sunny winter days) as recreation or for task-oriented trips?

2. Based on your experience, please rate the three following characteristics of sidewalks/ multi-use paths along streets (not trails through greenspaces) in Brantford:

a) Continuity – Sidewalks exist on streets I want to walk along.
b) Condition – Sidewalks that do exist are typically in good condition.
c) Winter maintenance – Sidewalks that do exist are typically cleared well in winter.

3. I am typically satisfied with the ease of crossing streets as a pedestrian at traffic signals; this includes signage, markings, and the timing provided to cross the street.

Yes/ No

4. I am aware that Brantford has recently begun installing new pedestrian crossings called a "PXO" or Pedestrian Crossover (image below) that give pedestrians the right-of-way to cross streets using only signage and/or flashing yellow warning signals.

Yes/ No/ It sounds familiar

5. Please identify any locations or intersections that, in your opinion, require devices to stop traffic (new signal, signage, etc.) to make pedestrian crossings easier.

Appendix E continued (7 of 8)

6. If you ride a bicycle, even occasionally, please identify how you use it (select all that apply):

- Short recreational rides by yourself or with others
- Longer endurance rides
- Nearby trips/ errands – including to neighbours, school, work, or shopping
- Longer distance trips/ errands
- I don't ride a bicycle
- Other (please explain)

7. Of the various factors listed below, what are your 'top 4' that are most critical to improving the cycling experience in Brantford:

- Improving gaps in the network - missing bicycle lanes/ trails
- Adding a buffer/ barrier to painted bicycle lanes
- Cyclists' ability to operate a bicycle – myself or others
- Car drivers' behaviour/ providing space for cyclists
- Trail crossings of streets
- Design of painted bicycle lanes through intersections
- Winter maintenance of bicycle lanes and/or trails
- Summer maintenance of bicycle lanes and/or trails
- Integration with transit
- Other (please explain)

8. Regardless if you ride a bicycle frequently or not, please identify SPECIFIC destinations you might ride to IF cycling infrastructure was enhanced (which specific parks, schools, employment areas, shopping areas, etc.):

9. Please identify any locations where existing trail crossings of streets are difficult (either walking or cycling) because of busy street traffic:

10. Please identify any existing on-street bicycle lanes in Brantford (listed below) that you feel should be enhanced with additional separation from auto traffic as per the following design examples of

1) Painted Buffer
2) Painted Buffer with bollards,
3)Buffer with curbing, and
4) Multi-use path.

11. Cycling education would be most successfully provided to youth in Brantford:

- As a program within schools at approximately the Grade 5 level, with parents paying $20 per child
- As a program provided at Recreation Centers, with parents paying $100 per child
- Cycling education is important, and it would be ideal to have the City fund this program
- I don't think cycling education is necessary for youth in Brantford

12. Is there anything else you'd like to share that the survey has not addressed, or ask a question about Active Transportation in Brantford?

Demographic Questions

The following questions provide data regarding participants and is necessary for the determination of whether the individuals in a particular study are a representative sample of the target population for generalization purposes. Your responses will be kept confidential.

Gender

- Female
- Male
- Transgender Female
- Transgender Male
- Gender Variant/Non-Conforming
- Active Transportation
- Let's Talk Brantford
- Page 4 of 5
- Not listed
- Prefer not to answer

How old are you?

How many people live in your household?

How many people in your household have a bicycle?

Postal Code or Nearest Intersection

Contact Information

You are welcome to provide a name and email address below to receive follow-up emails on this study or for us to respond to any questions you may have.

Name:

Email address:

Appendix F: Public Open House Information Panels

Purpose & Vision Statement

The City of Brantford is conducting an **Active Transportation Master Plan** study to enhance walking and cycling facilities throughout the city. The City's existing plans are documented in the 2020 Brantford Transportation Master Plan Update and the Parks & Recreation Master Plan (2018). Please review these 12 panels of information and provide us with any feedback on the comment form provided.

Active Transportation is any form of people-powered transportation like walking, cycling (including e-bikes), skateboarding, rollerblading, and wheelchair use. This can include walking to a bus stop or cycling to work or school.

Vision Statement for this study:

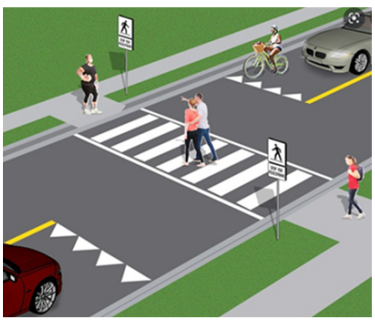
Active Transportation is an increasingly important component of urban transport systems addressing environmental concerns, equity issues, and the overall health of citizens. The study will provide a master plan and guide to building a fully integrated active transportation network within the City of Brantford that is well-connected, safer, and accessible for all users including pedestrians and cyclists.

Background Documents

- The **City of Brantford** has existing documentation that directs the City to enhance Active Transportation facilities:
  - **Official Plan** (2021): The needs, safety, and convenience of pedestrians and cyclists are to be addressed and enhanced when transport infrastructure is being constructed.
  - **Transportation Master Plan** (2020): Ensure pedestrian facilities are integrated into street construction projects. Provide appropriate cycling facilities on select streets to enhance connectivity across the city
  - **Vision Zero Safety Plan** (2021): Education for all road users, the continued installation of crossings where justified, and the expansion of the cycling network (including multi-use paths) are items identified to enhance Active Transport infrastructure. The Active Transportation working group provides comments on this Safety Plan.
  - **Walk 21** (2007): Ensure City policies support active lifestyles
  - **City of Brantford Age Friendly Strategy** (2022): Transportation is one of eight focus areas for healthy aging, and includes the enhancement of sidewalks, trails, and bike lanes.
  - **Downtown Streetscaping Study** (2022): Sidewalk enhancements are identified in the core. Buffered bike lanes are planned on Colborne St & Dalhousie St.
- **Justification for Active Transport** investment includes quality of living - air quality & physical activity, reduced consumption of fossil fuels to address climate change, and fostering vibrant neighbourhoods.
- **Nearby municipalities** also have Master Plans to enhance active transport including Cambridge, Hamilton, Kitchener, Waterloo, Barrie, and Niagara Falls.

Pedestrian Infrastructure

- The City requires **sidewalks** as part of new development.
- The Downtown Master Plan identifies enhancements for pedestrians and cyclists.
- The City conducts an annual **assessment of sidewalks** across the city to determine where repairs are to be prioritized. This assessment includes a review of infrastructure for mobility needs for less-mobile people (i.e. curb-cuts, sidewalk widths, etc.).
- The City has a policy to provide **enhancements for people with disabilities** as 'routine accommodation' with scheduled roadworks.
- The City has begun installing the new provincially-approved **Pedestrian Crossings (PXOs)** with four currently operating (image at right). The City is formalizing a policy for implementing PXOs where justified. PXO considerations include auto & pedestrian volumes, potential pedestrian volumes, and illumination. The design of pedestrian crossings:
  1. accommodate slower walking pedestrians and
  2. clearly mark pedestrian crosswalks.
- The City's **winter maintenance** protocol follows the guidelines and standards set by the Province, thus consistent with other Ontario municipalities.



Pedestrian Crossings

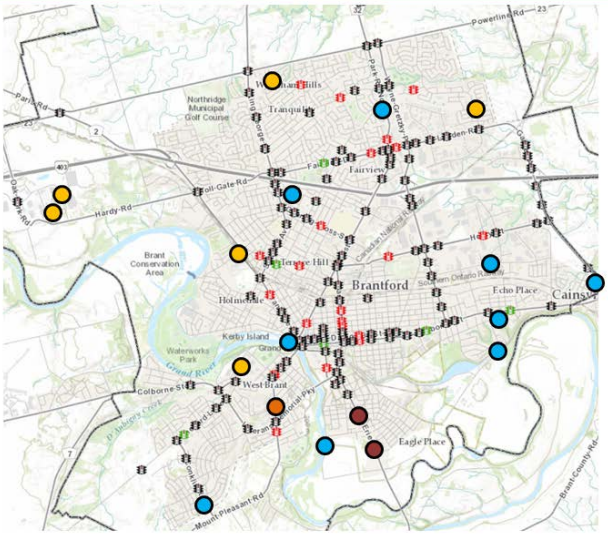
Pedestrian Crossing Locations

- Existing standard traffic signal
- 2022 planned traffic signal

Intersection Pedestrian Signal (IPS)

- Existing IPS at intersection
- Existing IPS mid-block
- 2022 Planned IPS
- Existing **PXO** crossing
- 2022 planned **PXO** crossing

Revised 2022/07/26

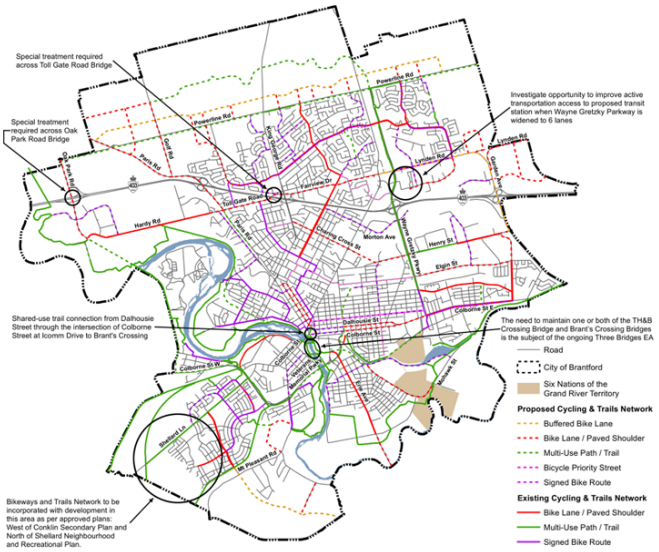


Cycling Infrastructure Plan

The Transportation Master Plan (2021) includes this map of planned facilities and identifies the following types of planned bikeways:

- **Bicycle Lanes** (including lanes with buffers & cycle tracks)
- **Paved Shoulders**
- **Bicycle Priority Streets**
- **Signed Bike Routes**
- **Multi-use Paths** (along roadways)
- **Trails** (through green spaces)

This 2022 study will develop detailed concepts for this planned cycling network. Recommendations from the current Trail Safety Audit study will also be incorporated.



Types of Cycling Infrastructure

There are different forms of cycling infrastructure (bikeways) suitable for streets with various auto traffic volumes. As adjacent auto volumes increase, separation becomes more elaborate.

Standard Bike Lane

Buffered Bike Lane

Cycle Track (max. separation)

Multi-use Path/ Trail (max. Separation)

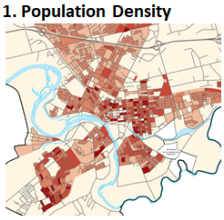
Determining Type of Bikeway

This study will determine:

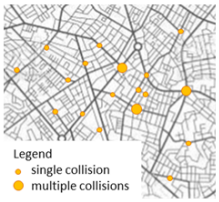
1) What type of bikeway is most suitable for each street in the plan (bike lane with/without buffer or barrier, cycle track, a multi-use path shared with pedestrians, etc.)
2) A priority ranking of bikeways for the order of implementation.

This assessment will be based on the following four factors:

1. Population Density



2. Collision Data



3. Traffic Volume Data

4. Identified Priority Gaps.

The timing of street reconstruction projects is determined based on many factors, and would supersede the ranking determined in this study. These reconstruction projects with planned cycling infrastructure would assess cycling plans as part of the design of these projects.

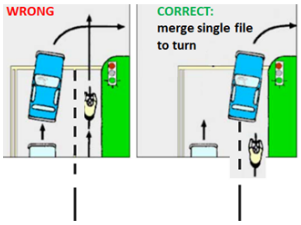
Cycling Design at Intersections

Various design elements are used to enhance the operations and visibility of cycling infrastructure at intersections – a critical location for cyclists, auto traffic, and pedestrians.

Bike Signals

Green Markings

Dashed Lines Approaching Intersections



Protected Intersections

Cycling Route Signage

Route signage is an integral part of cycling infrastructure . It provides guidance to users that are unfamiliar with the network – encouraging more residents to start cycling; and direction for visitors, fostering tourism. Signage will continue to be installed along **trails** (through greenspaces), **multi-use paths** (alongside streets), and occasionally along **on-street cycling** infrastructure. The trail network in Brantford is exemplary along the Grand River, with connections to adjacent municipalities as well.

Wayfinding Signage

Brantford's Primary Trails & Multi-use Paths

Cycling Encouragement

In addition to building infrastructure to foster growth in walking and cycling, other areas of action to grow Active Transport include:

- **Education** – general information and special programs for youth
- **Enforcement** – to raise the bar of conduct for everyone: pedestrians, cyclists, and drivers
- **Evaluation** – activity metrics help direct appropriate investment, etc.
- **Additional Amenities** – including wayfinding, benches, bike racks/ parking, bike stations, etc.
- **Enhanced Services** – ridesharing connectivity, bike share
- **Maintenance** – both winter clearing and summer sweeping and tree trimming
- **Transit/ Bus Integration** – both City transit and GO/ VIA connections
- **Policy/ Legislation** – formal standards and procedures to ensure active transportation issues are being addressed

Thank You

We encourage community feedback on the information provided through this Public Information Centre (PIC). Please complete the comment form.

Secondly – the City created an online survey to collect additional Active Transportation comments. It can be accessed at the following link:

www.LetsTalkBrantford.ca/ActiveTransportation

The City will continue to receive feedback on both the PIC form and the Active Transportation Survey until **Monday August 1, 2022**.

The City plans to host a second PIC for this study in September or October which will present final recommendations of the study.

Contact information:

Project Lead
Daryl Bender
Active Transportation Coordinator
City of Brantford
519.759.4150 ext.5767
DBender@brantford.ca

Project Manager
David Ferguson
Manager of Traffic Services
City of Brantford
519.759.4150 ext.5812
DFerguson@brantford.ca

Appendix G: Priority Ranking of Planned Cycling Links & Existing Links

Projects listed 1 to 111 are links planned for installation, followed by existing links (autumn 2022).
Links outlined with a solid black line are proposed to be installed at the same time.
* A cost estimate with an asterisk indicates funding through Development Charges.

Rank	Street	from	to	Length (km)	Status in TMP	Type in ATMP	Details	Cost Estimate
1	W Gretsky Pkwy	Powerline Rd	Grey St	5.00	existing	MUP	13 crossrides	$ 250,000
2	West St/ Scarfe Ave/ Brant	Pearl St/ Waterloo St	Grand River Ave	0.44	existing	**remove**		$ 2,000
3	Church St	Grand River Ave	Albion St	0.34	existing	bike lanes & signs	contraflow Brant to Albion, and WB BL	$ 2,177
4	Erie Ave	Market St	Clarence St	0.23	existing	bike lanes	widen SB app @ VMP to continue BL, add 2 crossrides	*$ 57,160
5	Erie Ave	Clarence St	Cayuga St	0.47	existing	BL buff		*$ 20,000
6	Morton Ave	West St	W Gretzky Pkwy	1.06	planned	cycle track	road diet and TWLTL	$ 51,410
7	Clarence St	Nelson St	Dalhousie St	0.30	planned	MUP	contingent on rail removal	$ 117,600
8	Edmondson St	West St	W Gretzky Pkwy	0.45	planned	BL buff	connect to MUP	*$ 50,000
9	Colborne St	Brant Ave	Rawdon St	1.72	planned	cycle track	as per Dtn Plan, repurpose curb lane	*$ 34,400
10	Icomm Dr	Colborne St	Dike Trail	0.10	planned	bike path or MUP	relocate lamps behind guide rail & add 2-way crossride at Colborne	$ 50,200
11	Dalhousie St	Queen St	Rawdon St/ Colborne St	1.88	planned	cycle track	as per Dtn Plan, repurpose curb lane	*$ 37,600
12	Queen St	Wellington St	Colborne St	0.30	enhance	bike lanes	contraflow east curb Wellington to Darling	$ 45,013
13	Dunsdon St	King George Rd	Park Rd	2.56	upgrade	BL buff	road diet with south side parking west of Memorial, TWLTL easterly (no parking)	$ 123,200
14	Clarence St	Dalhousie St	Erie Ave	0.75	planned	cycle track	ideally separate pedestrians & cyclists	*$188,750
15	Veterans Memorial Pkwy	Spalding Dr	Graham Ave	1.86	existing	MUP	7 crossrides	$ 145,000
16	Fairview Dr	King George Rd	W Gretzky Pkwy	2.68	planned	MUP	north side, 3 crossrides at King George	$ 523,920
17	Dundas St	North Park St	Clarence St	1.14	planned	BL buff	road diet High to Clarence	$ 55,889
18	McMurray St/ Wells Ave	Dundas St	Albion St	0.59	planned	BBlvd		$ 5,900
19	Tollgate Rd	Paris Rd	King George Rd	1.50	planned	BL buff	road diet all - & TWLTL	$ 65,250
20	Colborne St	Rawdon St	W Gretzky Pkwy	1.12	planned	bike path	ideally separate pedestrians & cyclists	*$201,280

Appendix G continued (2 of 7)

* A cost estimate with an asterisk indicates funding through Development Charges.

Rank	Street	from	to	Length (km)	Status in TMP	Type in ATMP	Details	Cost Estimate
21	Elgin St	Clarence St	W Gretzky Pkwy	1.82	planned	BL buff		$ 9,538
22	King George Rd	Governors Rd	St Paul Ave	4.33	enhance	MUP	project after dev adds multiple segments	$ -
23	Park Rd S	Colborne St	Glenwood Dr	0.28	existing	MUP		$ 41,320
24	Wellington St	Albion St	Park Rd	2.71	upgrade	BBlvd		$ 27,100
25	Mt Pleasant St	Veterans Memorial Pkwy	Tutela Heights Rd	0.75	existing	bike lanes	road diet & TWLTL	$ 33,750
26	St Paul Ave	King George Rd	Terrace Hill St	0.74	enhance	MUP		$ -
27	Lorne Cr/ Richmond St	Dufferin Ave	Albion St	0.27	enhance	BBlvd	BL would remove parking for a few homes with no driveway	$ 2,267
28	Charing Cross St	King George Rd	West St/ terminus	1.77	planned	MUP	convert one sidewalk & rail crossing (future EA)	*$334,880 (plus crossing)
29	Ewing Dr	Balmoral Dr	Tollgate Rd	0.60	existing	bike lanes		$ 594
30	Lynden Rd	W Gretzky Pkwy	city limits	4.03	planned	MUP	south side, replace existing sidewalk	*$660,320
31	Rawdon St	Henry St	Wellington St	1.28	planned	bike lanes		$ 3,268
32	Cayuga St/ Tecumseh/ Strathcona	River Rd	Greenwich St/ Mohawk St	1.16	planned	signs only	activation at Erie signals	$ 2,000
33	Garden Ave	Henry St	Elgin St	0.79	planned	BL buff		$ 783
34	North Park St	St George St	Dundas St	0.17	existing	BBlvd		$ 1,700
35	Palmerston Ave/ St James St	St Paul Ave	Albion St	0.52	planned	signs only	ensure Brant signals have activation	$ 1,000
36	Roy Blvd	Roy Blvd MUP	Lynden Rd	1.50	planned	MUP		$ 216,000
37	Colborne St	W Gretzky Pkwy	Johnson Rd/ city limits	2.43	upgrade	MUP	maintain sidewalk north side, MUP southside	*$389,920
38	Kent Rd	Balmoral Dr	King George Rd	1.09	planned	BBlvd	design to help calm traffic	$ 10,900
39	Greenfield Rd	Powerline Rd	Dunsdon St	1.16	planned	signs only		$ 2,000
40	Terrace Hill St	Paris Rd	McMurray St	0.95	enhance	BL buff		$ 4,891

Appendix G continued (3 of 7)

* A cost estimate with an asterisk indicates funding through Development Charges.

Rank	Street	from	to	Length (km)	Status in TMP	Type in ATMP	Details	Cost Estimate
41	Powerline Rd	Memorial Dr	W Gretzky Pkwy	1.69	planned	MUP		*$283,360
42	Erie Ave	Cayuga St	Birkett Ln	1.60	removed	BL buff		*$ 12,468
43	Dufferin Ave	Wilkes Dam	Jarvis St	1.86	existing	BBlvd	Morrell to St Paul only	$ 18,600
44	Ava Rd	Hardy Rd	Parkside Dr	1.46	planned	BBlvd	traffic calming	$ 14,600
45	Baxter St	Fairview Dr	Farringford Dr	0.20	planned	BL buff	shorten NBLTL - widen approach	$ 9,500
46	Brant Ave	Ava Rd	School driveway/ Palmerston	0.47	enhance	MUP & signs only	replace south sidewalk w MUP to internal driveway	$ 68,680
47	Glenwood Dr	Glebe Farm Trail/ Kiwanis Way	Clara Cr.	0.49	existing	BBlvd		$ 4,900
48	Hardy Rd	St Andrews Dr	Paris Rd	0.31	planned	bike lanes		$ 1,807
49	Kerr-Shaver/ Oakhill Dr	Oakhill Tr	D'Aubigny Tr	1.10	existing	cycle track	some segments signs only	$ 8,347
50	Parkside Dr	Dufferin Ave	Ava Rd	0.77	planned	BBlvd	possibly modify curbs and add MUP	$ 35,420
51	Powerline Rd	422 Powerline	Memorial Dr	0.24	planned	MUP	The current Powerline EA to address.	*$ 54,560 (plus ravine crossing)
52	River Rd	Strathcona Ave	Hamilton-Brantford RT	0.72	planned	cycle track	make one-way NB for autos	$ 28,360
53	Varadi Ave	King George Rd	Memorial Dr	1.00	planned	BBlvd		$ 10,000
54	Ontario St/ Salisbury/ Walter/ Lida	Cayuga St & Gladstone Ave	Baldwin Ave & Sixth Ave	2.55	enhance	BBlvd	& Mintern to Mohawk	$ 12,750
55	Brantwood Park Rd	Powerline Rd	Lynden Rd	2.68	upgrade	bike lanes	ideally barrier at Lynden (4 blocks)	$ 12,154
56	Mohawk St	Cayuga St	Morrison Rd	2.03	planned	BL buff		$ 10,177
57	Adams/ Empey/ Middleton	Henry St	Elgin St	2.00	planned	BL buff		$ 8,085
58	Balmoral Dr	Ewing Dr	Oxford St	0.74	upgrade	BL buff		$ 4,252
59	Blackburn Dr	Avedisian St	Veterans Mem. Pkwy	1.59	existing	bike lanes	road diet Diana to VMP	$ 6,838
60	Colborne St	601 Colborne St W/ city limits	TH&B Tr/ Canning St	1.30	planned	MUP	south side, replace any conc. sidewalk	*$199,200

Appendix G continued (4 of 7)

* A cost estimate with an asterisk indicates funding through Development Charges.

Rank	Street	from	to	Length (km)	Status in TMP	Type in ATMP	Details	Cost Estimate
61	Easton Rd/ Buchanan Cr	Dunsdon St	Lynden Rd	1.14	planned	BL buff	add route signage for trail and Buchanan Cr	$ 7,469
62	Fen Ridge/ Savannah Oaks/ Ferrero	all		2.23	planned	bike lanes		$ 6,209
63	Flanders Dr	Shellard Ln	Hunter Way	0.73	existing	bike lanes		$ 2,723
64	Garden Ave	Lynden Rd	Henry St	1.53	planned	MUP	west side (modify walk on bridge)	$ 222,320
65	Holiday Dr	W Gretzky Pkwy	terminus	0.31	planned	BL buff	road diet & TWLTL	*$ 12,780
66	McGuiness Dr	Shellard Ln	St Patricks Dr	1.15	planned	BBlvd		$ 11,500
67	North Park/ Blackfrier/ Brier Park/ Coachwood	Memorial Dr	Dunsdon St	1.27	planned	BBlvd		$ 12,700
68	Oak Park Rd	Powerline Rd/ city limits	Hardy Rd	2.00	planned	MUP	NW Servicing EA in progress	*$290,000
69	Oak Park Rd	Hardy Rd	Oakhill Tr	1.20	planned	MUP		*$174,800
70	Rawdon St	Wellington St	Able Ave	0.97	planned	bike lanes & BBlvd	BBlvd south of East Ave	$ 9,700
71	Richardson/ Gilkinson/ Fordview Ct	Mount Pleasant St	Fordview Trail	0.69	planned	signs only		$ 1,000
72	Sinclair Blvd	terminus	Garden Ave	0.84	planned	MUP		$ 121,960
73	Sinclair Blvd & planned street	Garden Ave	Adams Rd	1.10	planned	MUP		*$ 79,200
74	Stephenson Rd	Johnson Rd	Barrett Ave	0.50	enhance	signs only		$ 1,000
75	Woodyatt Dr	Lynden Rd	Roy Blvd	0.47	planned	MUP		$ 68,680
76	Coulbeck/ Dante/ Hackney Ridge	Powerline Rd	Brantwood Pk Rd	1.33	planned	signs only	pave both trail connecting to Ludlow	$ 2,000
77	McGuiness Dr	St Patricks Dr	Shellard Ln	0.19	existing	bike lanes		$ 1,188
78	Morton Ave	North Park St	West St	0.95	planned	bike lanes	remove EBLTL at West St	$ 2,941
79	Mt Pleasant St	Balfour St	Veterans Memorial Pkwy	0.63	planned	bike lanes	road diet & TWLTL	$ 11,450
80	Sandra St	Evelyn St	Fairview Dr	0.58	enhance	bike lanes		$ 2,575

Appendix G continued (5 of 7)

* A cost estimate with an asterisk indicates funding through Development Charges.

Rank	Street	from	to	Length (km)	Status in TMP	Type in ATMP	Details	Cost Estimate
81	St George St	Tollgate Rd	North Park St	1.73	existing	BBlvd		$ 17,300
82	Powerline Rd	Oak Park Rd	King George Rd	4.97	planned	MUP	Powerline EA	*$934,960
83	Balmoral Dr	Powerline Rd	Ewing Dr	1.46	planned	BL buff		$ 6,442
84	Baxter St/ Memorial	North Park St	Fairview Dr	0.23	planned	BL buff	continue Memorial road diet	$ 6,060
85	Blackburn Dr	Shellard Ln	Ferrier Ln	1.13	enhance	BL buff	0.5m buff with flexposts	*$ 5,438
86	Casson Ln/ Olivetree	Casson Tr	Kent Rd	0.35	planned	signs only		$ 1,000
87	Conklin Rd	LE&N RT	Mt Pleasant Rd	0.21	planned	BL buff	continue BLs and add sidewalks	$ 1,639
88	Conklin Rd extension	Mt Pleasant Rd	Phelps Rd	2.60	planned	BL buff		$ 11,911
89	Davern Rd	Tutela Heights Rd	Conklin extension	0.63	planned	bike lanes		$ 2,624
90	Dunsdon St	W Gretzky Pkwy	Brantwood Pk Rd	0.73	existing	BL buff	done - add buffer where possible (minimal opp.)	$ 4,221
91	Erie Ave	Birkett Ln	city limits/ river	0.86	planned	paved shoulder		$ 100,852
92	Farringford Dr	Baxter St	West St	0.84	planned	BBlvd		$ 8,400
93	Francis St/ White Oaks/ Driftwood/ Bernard	Powerline Rd	Evelyn St/ Sandra St	1.50	planned	bike lanes & signs only		$ 4,743
94	Golf Rd	city limits/ Governors Rd	Paris Rd	3.03	planned	MUP		*$440,320
95	Grand River Ave	Sunset Ave	Scarfe Ave/ SCJ Tr	2.11	existing	bike lanes & signs only	BLs east of Leonard St	$ 5,568
96	Greenwich St	Cayuga St/ Mohawk St	Mohawk St	2.18	planned	MUP	along water side - paved	*$317,920
97	Henry St	Charing Cross ext.	Stanley St	0.71	planned	BL buff	to install in 2023	$ 95,265
98	Johnson Rd	County Rd 18	Colborne St	0.80	enhance	bike lanes	future signal @ Colborne with crossride to planned MUP (south side)	$ 2,793
99	Locks Rd	Colborne St	Forest Rd	0.72	enhance	BL buff		$ 4,191
100	Mohawk St	Morrison Rd	Locks Rd	1.50	enhance	BL buff		$ 8,564

Appendix G continued (6 of 7)

* A cost estimate with an asterisk indicates funding through Development Charges.

Rank	Street	from	to	Length (km)	Status in TMP	Type in ATMP	Details	Cost Estimate
101	Paris Rd	city limits	Tollgate Rd	3.24	planned	MUP		*$466,560
102	Paris Rd	Tollgate Rd	Terrace Hill St/ Brant Ave	1.32	planned	MUP	replace existing sidewalk and crossride at Terrace Hill	$ 252,536
103	Powerline Rd	Brantwood Pk Rd	city limits	1.80	planned	MUP		*$259,200
104	Queensway Dr	Paris Rd	King George Rd	1.22	planned	BBlvd		$ 12,200
105	Summerhayes Cr	Powerline Rd	King George Rd	0.68	planned	signs only		$ 2,000
106	Tutela Heights extension	Mt Pleasant Rd	Mt Pleasant Rd	1.30	planned	bike lanes		*$ 3,287
107	Anderson Rd	Shellard Ln	Blackburn Dr	0.85	enhance	BL buff		$ -
108	W Gretzky Pkwy	Park Rd	Powerline Rd	0.78	planned	MUP		*$132,320
109	Welton Rd/ Cr	all		1.25	planned	bike lanes		*$ 3,238
110	New Development north of Powerline		various	23.00	planned	various		*$774,768
111	Tutela Heights Rd	Mt Pleasant Rd	Davern Rd/ city limits	1.53	enhance	MUP	for pedestrians too (no sidewalk)	$ 220,320

Appendix G continued (7 of 7)

Existing Cycling Links – as of Autumn 2022

Street	from	to	Length (km)	Status in TMP	Type in ATMP	Details
Albion St	McMurray St	Wellington St	1.06	exist	bike lanes	done
Ballantyne Dr	Spalding Dr	Sherwood Dr	1.65	exist	bike lanes	add speed cushions, redesign the bike lanes as a cycle track on the north side
Blackburn Dr	Ferrier Ln	Avedisian St	0.83	exist	BL buff	done - spot improvements
Conklin Rd	Shellard Ln	LE&N RT	1.47	exist	bike lanes	done
Diana Ave	Shellard Ln	Blackburn Dr	0.72	exist	bike lanes	
Dunsdon St	Park Rd	W Gretzky Pkwy	0.21	exist	BL buff	
Elgin St	W Gretzky Pkwy	Garden Ave	2.34	exist	MUP	done
Garden Ave	Elgin St	Colborne St	0.96	exist	bike lanes	done
Gilkinson St	Fordview Trail	189 Gilkinson	0.12	exist	MUP	done
Gilkinson St	189 Gilkinson	Mount Pleasant St	1.63	exist	MUP	done
Graham Ave	Veterans Mem. Pkwy	Gilkinson St	0.43	exist	signs only	done
Grey St	W Gretzky Pkwy	Garden Ave	2.29	exist	bike lanes	done - add parking buffer
Hardy Rd	Oak Park Rd	St Andrews Dr	3.05	exist	paved shoulder	done - permit pedestrians
Henry St	Stanley St	Middleton St	1.36	exist	MUP	crossrides
Henry St	Middleton St	Garden Ave	1.27	exist	BL buff	done - add buffer
Jarvis St	Dufferin Ave	Grand River Ave	0.31	exist	signs only	done
King George Rd	Summerhayes Cr	Casson/ Kent Rd	0.44	exist	MUP	critical segment
Memorial Dr	Powerline Rd	Dunsdon St	1.10	exist	BL buff	done
Memorial Dr	Dunsdon St	North Park St	1.00	exist	BL buff	done
Morrell St	Dufferin Ave	Grand River Ave	0.90	exist	signs only	done
North Park St	Memorial Dr	St George St	2.19	exist	BL buff	done - add buffer if opportunity
Oxford St	Balmoral Dr	King George Rd	0.52	exist	BL buff	
Park Rd/ W Gretzky Pkwy	Grey St	Colborne St	0.62	exist	signs only	done
Pearl St	Niagara St	West St	0.76	exist	signs only	done - good to keep
Powerline Rd	King George Rd	422 Powerline	0.66	exist	MUP	done
Powerline Rd	W Gretzky Pkwy	Brantwood Pk Rd	0.73	exist	MUP	done
Shellard Ln	TH&B Tr/ Anderson	Veterans Mem. Pkwy	3.18	exist	MUP	done - paved
St George St/ Sydenham/ Niagara	North Park St	Pearl St	1.46	exist	signs only	
St Patricks Dr	McGuiness Dr	Shellard Ln	0.72	exist	signs only	done
Sudds Ln	Donegal Dr	St Patricks Dr	0.16	exist	signs only	done

Appendix H: Unit Cost Values for Project Implementation

The following is a list of 2022 unit cost items upon which the cycling project cost estimates are based.

Design Element	Cost/km	
Markings and Signage		
pair of bike lanes (BLs) no buff	$990	
pair of BLs w buff	$3,042	
pair of BLs w buff & TWLTL & barrier	$38,000	(incl. bollards & rubber curbs)
pair of BLs w buff & TWLTL	$15,000	
contraflow bike lane	$520	
centerline & stencils/ stop bars	$1,000	
all signage	$2,000	
Bike Blvd	$10,000	(incl. signage, curb changes…, etc.)
Construction		
3.0m asphalt pathway	$144,000	
3.5m asphalt pathway	$168,000	
4.0m asphalt pathway	$192,000	
1.5m bike pathway	$72,000	
Illumination		
pole relocation	$5,000	
Signals (includes markings)		
1 crossride	$20,000	
2 crossrides	$35,000	
Removals		
solid line	$3,500	

Appendix I: Listing of Existing & Planned Trails & Bridges

Links outlined with a solid black line are contiguous trails but with different names.

Trail	from	to	Length (km)	Status in TMP	Details
SC Johnson Tr	Hwy 403/ city limits	Oak Park Rd/ Hardy Rd	3.79	existing	stone
SC Johnson Tr	Oak Park Rd/ Kraemer's Way	245 Hardy	2.94	existing	stone
SC Johnson Tr	Hardy Rd	Dufferin Ave	2.41	existing	stone
SC Johnson Tr	Wilkes Dam	Morrell St	3.00	existing	paved
SC Johnson Tr	Morrell St	Brants Crossing	2.10	existing	pave 110m
SC Johnson Tr	Brants Crossing	Strathcona Ave	1.11	existing	paved
Dike Tr	River Rd	Hamilton-Brantford RT	4.65	existing	stone
Hamilton-Brantford RT	Dike Tr	Locks Rd	1.20	existing	
Hamilton-Brantford RT	Locks Rd	city limits/ Cainsville Rd	2.65	existing	stone
Oak Hill Tr	SC Johnson/ Blue Cir Tr	Kerr-Shaver Terr.	2.60	existing	combo
Oak Hill parallel	Oak Hill Tr	Oak Hill cemetery Rd	0.70	planned	
Oak Hill extension	Oak Hill cemetery Rd	601 Colborne St W to McGuiness Gr	1.10	planned	
D'Aubigny Tr (3 legs)	Oakhill Dr	Ballantyne Dr & VMP	1.80	existing	paved
Fordview Tr	Ballantyne Dr	Brants Crossing	0.53	existing	paved
Fordview Tr	Brants Crossing	Gilkinson Tr	1.65	existing	paved
Gilkinson Tr	Mount Pleasant St	Gilkinson St/ Eagle St	1.50	existing	combo
CN RT	Pleasant Ridge Rd	TH&B RT	3.33	existing	stone
TH&B RT	city limits (south of Shellard)	CN RT	2.84	existing	stone
TH&B RT	CN RT	Colborne St/ VMP	1.10	existing	
LE&N RT	VMP Tr	city limits/ Phelps	3.10	existing	stone
Market Station Tr (TH&B)	SC Johnson/ Market St	Mohawk St	1.20	planned	paved
Shallow Creek Tr	East Ave	Glebe Farm Tr/ Drummond	1.34	existing	
Glebe Farm Tr	Shallow Creek	Forest Rd/ Mohawk Park	1.25	not TMP	
Forest Road Tr	Mohawk Park	Forest Rd	0.78	existing	stone
Casson Tr	Casson Ln	King George Rd	0.11	existing	paved
Royal Oak Tr	Royal Oak	Memorial	0.16	not TMP	combination
Brier Park Tr	Dunsdon St	Blackfrier Ln	0.75	planned	paved
Childerhose Tr	W Gretzky Pkwy	Childerhose Cr	0.15	existing	paved
Banbury Park Tr	Dante Cr	Ludlow Cr	0.20	planned	
Hackney Ridge Tr	Ludlow Cr	Hackney Ridge	0.28	existing	paved
Florence Buchanan Tr	Buchanan Cr	Copernicus Blvd	0.26	existing	paved
Roy Blvd Tr	W Gretzky Pkwy	Roy Blvd	0.48	not TMP	
Holme St Tr	Dufferin Ave	SC Johnson TR/ Yorkshire	1.75	planned	

Appendix I continued (2 of 2) – Trail/ Multi-use Path Bridges

Bridge	from	to	Length (km)	Status in TMP	Details	Type in ATMP
SC Johnson Br	over Hwy 403		0.08	existing		trail
Oak Hill Trail Br	SC Johnson/ Blue Cir Tr	Oak Hill Tr	0.30	existing		trail
Waterworks Park Br	Oak Hill Tr (cemetery)	Waterworks Park	0.15	not TMP	proposed	trail
Brant's Crossing	Fordview Tr	SC Johnson Tr	0.18	existing	platform repairs	trail
TH&B Br	Fordview Tr	Earl Haig Park	0.16	existing	platform repairs	trail
Tutelo Crossing	Gilkinson Tr	River Rd by Baldwin Ave	0.15	not TMP	proposed	trail
Charing Cross St Br	Charing Cross terminus	Henry St	0.30	planned		MUP
WG Pkwy MUP Br	over Hwy 403		0.07	existing		MUP
WG Pkwy MUP Br	south of Morton Ave		0.06	existing	platform repairs	MUP
Murray St Br	Shallow Creek Tr	Greenwich MUP	0.05	not TMP	add sharrows	on-street
Drummond St Br	Shallow Creek Tr	Greenwich MUP	0.04	existing	closed - repair	trail
Clarence Tr	Elgin St	Nelson St	0.80	planned		paved
Glebe Farm Tr	Shallow Creek	Glenwood Dr/ Kiwanis Way	0.75	planned		
Clara Tr	Grey St	Colborne/ Glenwood/ Clara	0.50	planned		
Bolster Tr	Bolster Rd	Davidson Ct	0.21	not TMP		existing paved
McGuiness Greens Tr	TH&B RT	McGuiness Dr	0.30	not TMP		south portion exists
Donegal Park Tr	CN RT	Donegal Dr	0.23	existing		stone
Maple Leaf Tr	St Patricks Dr	Colborne St	0.27	existing		paved
Franklin Grobb Tr	Hunter Way	LE&N RT	0.34	existing		stone
Franklin Grobb ext.	LE&N RT	Tutela Heights ext.	0.50	planned		
Dover Tr (3 legs)	Dover Ave	Dike Tr & Eagle Place Center	0.40	not TMP		

Appendix J: Report to Council #2022-206 - Process to Install New Pedestrian Crossings (June 2022)

Alternative formats and communication supports available upon request. Please contact accessibility@brantford.ca or 519-759-4150 for assistance.

Date June 22, 2022 **Report No.** 2022-206

To Chair and Members
Vision Zero Road Safety Committee

From Inderjit Hans, P. Eng., PMP
General Manager, Public Works Commission

1.0 Type of Report

Consent Item [ ]
Item For Consideration [X]

2.0 Topic Pedestrian Crossovers (PXO) Policy and 2022 PXO Locations [Financial Impact – None]

3.0 Recommendation

A. THAT report 2022-206 regarding "Pedestrian Crossovers (PXO) Policy and 2022 PXO Locations" BE RECEIVED; and

B. THAT the necessary by-law to amend By-law 70-2010 to adopt a new Public Works 024 – Pedestrian Crossovers policy attached as Appendix "A" to report 2022-206 BE PRESENTED to City Council for adoption; and

C. THAT pedestrian crossovers BE APPROVED on Ava Road at Brant Avenue, Brant Avenue at Colborne Street West, Conklin Road at Gillespie Drive, Hansford Drive at Barrett Avenue and Wood Street in front of St. Pius X Catholic Elementary School; and

D. THAT the necessary by-law for the proposed PXO's BE PRESENTED to City Council for adoption.

4.0 Executive Summary

This report provides the Vision Zero Road Safety Committee with a new Public Works policy pertaining to Pedestrian Crossovers. The policy outlines warrants and general guidelines for the installation of Pedestrian Crossovers (PXO's) in the municipality.

In addition, This report provides City Council with a recommendation to install five (5) PXO's at the following locations:

- Ava Road at Brant Avenue;
- Brant Avenue at Colborne Street West (channelized right turn);
- Conklin Road at Gillespie Drive;
- Hansford Drive at Barrett Avenue;
- Wood Street in front of St. Pius X Catholic Elementary School.

The costs associated with the implementation of the five (5) PXOs will be covered by existing capital budgets.

5.0 Purpose and Overview

The purpose of this report is to recommend a new Public Works policy that outlines warrants and general guidelines for the installation of PXO's in the municipality. The policy will establish and streamline the process to install new PXO's.

Staff also recommend the installation of five (5) PXOs this year, as outlined in the analysis section of this report.

6.0 Background

The Ministry of Transportation of Ontario introduced new PXO types when they published their Pedestrian Crossing Treatments manual in 2016. PXO's have become an increasingly popular pedestrian crossing treatment where higher forms of traffic control, such as all-way stop control and traffic control signals, are not warranted. Staff began installing PXO's in Brantford in 2021, and continue to review locations for their need.

Staff developed the new policy titled "Public Works-024 – Pedestrian Crossovers" attached as Appendix "A" to this report, to document the warrants and guidelines when recommending new PXO locations.

7.0 Corporate Policy Context

City of Brantford Council Priorities, 2020-2021, #3:

- A safe, efficient transportation system connects the community across neighbourhoods, with neighbouring communities and provincial transportation network.

City of Brantford Vision Zero Road Safety Plan

Public Works-021 Amending On-street Parking Regulations

8.0 Input From Other Sources

The Communications, Community Engagement & Customer Service department will continue to assist with the ongoing Pedestrian Crossover educational campaign.

9.0 Analysis

9.1 Pedestrian Crossovers Policy

Staff developed the PXO policy to provide warrants and general guidelines for the installation of PXO's in the municipality. The process for screening, warranting and installation of a PXO is consistent with the Ontario Traffic Manual (OTM) Book 15 – Pedestrian Crossing Treatments, published by the Ministry of Transportation.

When a location is under review, staff will follow the established warrant and guidelines provided in the PXO policy. If the warrant study reveals that a PXO is justified, the policy delegates authority to the General Manager of Public Works to approve the PXO location and prepare the by-law to City Council. This process is in line with Public Works-021 Amending On-street Parking Regulations policy, approved by Council in November, 2019. The Parking policy delegates authority to staff to address on-street parking amendments when specific conditions are met. This will be a more efficient process, reducing staff time required to prepare reports.

The proposed Pedestrian Crossover policy is attached as Appendix "A" to this report.

9.2 Pedestrian Crossovers

Staff identified the following five (5) locations for PXO installation in Table 1 below:

Table 1 - Proposed PXO Locations

Location	Type	Ward	Justification
Ava Road at Brant Avenue	D	2	Existing PXO installed to accommodate temporary pedestrian walkway on Ava Road Bridge.
Brant Avenue at Colborne Street West	C	2	"Yield to Pedestrians" sign and amber flasher to be replaced with standard PXO signage and pavement markings.
Conklin Road at Gillespie Drive	C	1	Adult school crossing to be upgraded to a PXO to provide traffic control for pedestrians throughout the day.
Wood Street at St. Pius X Catholic Elementary School	D	3	Pedestrian desire line between church parking lot and school
Hansford Drive at Barrett Avenue	D	4	Pedestrian desire line to Johnson Park

The type "C" and "D" PXO are similar in design, however type "C" are recommended at higher volume locations, and are enhanced with rectangular rapid flashing beacons (RRFB). Type "C" and "D" PXOs are illustrated in Figures 1 and 2 respectively. It is recommended that Traffic by-law 37-83 be amended as outlined in Appendix "B" of this report, to provide a PXO at the locations outlined in Table 1 above.

Figure 1 - Type "C" Pedestrian Crossover

Figure 2 - Type "D" Pedestrian Crossover

10.0 Financial Implications

The five (5) PXO's to be installed in 2022 will be funded from the Active Transportation Capital Budget TS1905, at an estimated total cost of $55,000. The approximate cost for each PXO type is outlined in Table 2 below:

Table 2 - PXO Installation Costs

PXO Type	Description	Approximate Installation Cost
Type "B"	Signs (overhead and ground mounted), pavement markings, and RRFBs	$25,000
Type "C"	Signs (ground mounted), pavement markings, and RRFBs	$20,000
Type "D"	Signed (ground mounted) and pavement markings	$5,000

Appendix J continued (6 of 6)

11.0 Climate and Environmental Implications

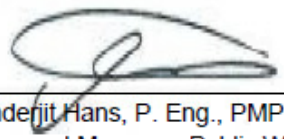
Not applicable.

12.0 Conclusion

The recommended Public Works-024 Pedestrian Crossovers policy outlines warrants and general guidelines for the installation of PXO's in the municipality.

Staff further recommend the installation of five (5) PXO's at the following locations:

- Ava Road at Brant Avenue;
- Brant Avenue at Colborne Street West (channelized right turn);
- Conklin Road at Gillespie Drive;
- Hansford Drive at Barrett Avenue;
- Wood Street in front of St. Pius X Catholic Elementary School.



Inderjit Hans, P. Eng., PMP
General Manager, Public Works Commission

Prepared By:
Rob Smith, C.E.T., Supervisor of Transportation Services

Attachments:
Appendix "A" – Public Works-024 Pedestrian Crossovers policy
Appendix "B" - 2022 Pedestrian Crossover Locations – Traffic Control

Appendix K: Standard Notice to Residents of New Cycling Infrastructure Installations

January 1, 2022

Notice of Project
Kathryn Boulevard (East Street to West Street)
Bike Lane Project

Area Residents/ Business Owners/ Tenants/ Agencies:

Project Description

We would like to take this opportunity to provide you with a notice of the reconfiguration of Kathryn Boulevard (East Street to West Street). Work is currently anticipated to start the week of May 24, 2022, and should be completed by July 1, 2022, weather permitting. The work will be carried out by ACME Contractors and will consist of removing the current pavement markings using high pressure washing and then repainting lines with the new lane configuration, including bike lanes along both sides of the street (adjacent to the curbs). Much of the work may be conducted after midnight to minimize traffic circulation through the work site.

What to Expect During the Installation

- Health and Safety measures will be implemented by the contractor following workplace safety guidelines set by the Province, including a safe work area and other required protocols.
  - COVID-19 protocols will be followed as dictated by Public Health, and
  - Traffic circulation will be proactively managed for the safety of citizens and workers.

Contact Names

- The Design Technologist in charge of this project is _____. Any inquiries regarding construction or painting issues/ comments should be directed to per/ his/ her attention at 519-_____.
- The Traffic Section Project Coordinator in charge of this project is Kathryn Broadbent. Any inquiries regarding the construction would be directed to her attention at 519-759-4150 x.5789.
- For after-hour emergencies, City Operational Services staff may be contacted by calling 519-759-4150. Please follow automated instructions to reach an operator.
- Project information can be found on the ***City Website***.

Thank you in advance for your tolerance and understanding during this period of disruption. If you are a tenant, we ask that you please forward this information to the property owner.

Yours truly,

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Appendix L: Sample Table of Vehicle Types and Permitted Use

Referenced on page 61 of the study – a table describing proposed permitted uses of various vehicle types

Vehicle Type	Human powered?	Permitted on:				Weight	Speed Limit
		sidewalk	trail and MUP	on-street bike lanes	on-street auto lanes **		
Motorcycle/ Motor Tricycle	no, gas or battery only	no	no	no	yes	< 500 kg	posted speed
Limited-Speed Motorcycle (eg. small vespa)	no, gas or battery only	no	no	no	yes	< 200 kg	70 km/hr
ATVs & Dirt Bikes	no, gas or battery only	no	no	no	yes - when licensed	< 200 kg	60 km/hr
Motor-Assisted Bicycle (moped or can look like a typical bicycle)	yes, and gas	no	no	no	yes	< 120 kg	50 km/hr
e-bike: with impractical pedals	maybe, and battery	no	no	yes	yes	< 120 kg	30 km/hr without pedalling
e-bike: pedaling NOT required to engage electric power assist	yes, and battery	no	no	yes	yes	< 120 kg	30 km/hr without pedalling
e-bike: pedaling required to engage electric power assist	yes, and battery	no	no	yes	yes	< 120 kg	30 km/hr with power assist
Bicycle/ Adult Tricycle	yes (only)	no, children excepted	yes	yes	yes	< 50 kg	posted speed
Skateboard/ In-line skates/ Longboard	yes (only)	no, children excepted	yes	yes	no	< 20 kg	posted speed
Hoverboard (1 or 2 wheel)	no, battery only	no, children excepted	yes	yes	no	< 20 kg	posted speed
Personal Transporter (Segway)	no, battery only	yes, for disability, police, or letter carrier	yes, for disability, police, or letter carrier	no	no	< 50 kg	20 km/hr
Wheelchair - manual or electric (Personal Mobility Device)	yes, and battery	yes	yes	no	no	< 150 kg	10 km/hr
Pedestrian	yes (only)	yes	yes	no	no	varies	10 km/hr
Low-speed Vehicle (golf cart)	no, battery only	no	no	no	no	< 600 kg	40 km/hr
Pocket Bike	no, gas only	no	no	no	no	< 50 kg	60 km/hr
Scooter (skateboard with a steering stick)	yes (only)	no, children excepted	yes	no	no	< 10 kg	posted speed
Electric or Motor Scooter (skateboard with a steering stick)	yes, and gas or battery	no	no	no	no	< 50 kg	posted speed