



# APPENDIX D

## Costs





City of Brantford: 2020 Transportation Master Plan Update - Active Transportation Capital Cost Estimates

#	Proposed Project	Facility Type	Length of ROW (km)	Sub-Total Cost	Contingency**	TOTAL Cost
<b>SHORT-TERM 2021 – 2025 (0-5 years)</b>						
1	Colborne Street – Wayne Gretzky Parkway to Garden Avenue	Road Diet	2.1	\$ 132,300	\$ 19,845	\$ 152,145
2	Colborne Street – Dalhousie Street to Wayne Gretzky Parkway	Bike Lanes	0.7	\$ 490,000	\$ 73,500	\$ 563,500
3	Colborne Street – Clarence Street to Dalhousie Street	Bike Lanes	1.3	\$ 39,000	\$ 5,850	\$ 44,850
3	Dalhousie Street – Colborne Street to Clarence Street	Bike Lanes	1.3	\$ 39,000	\$ 5,850	\$ 44,850
4	Clarence Street - Rail Corridor to Colborne Street	MUP	0.5	\$ 162,500	\$ 24,375	\$ 186,875
5	Fairview Road – King George Road to West Street	Road Diet	2.3	\$ 144,900	\$ 21,735	\$ 166,635
6	Tollgate Road – Paris Road to King George Road	Road Diet	1.5	\$ 94,500	\$ 14,175	\$ 108,675
7	Oak Park Road – Powerline Road to Hardy Road*	Bike Lanes	1.3			
8	Hardy Road – St. Andrews Drive to Paris Road	Bike Lanes	0.3	\$ 210,000	\$ 31,500	\$ 241,500
9	Veterans Memorial Parkway – Mount Pleasant Street to Erie Avenue*	MUP	1.2			
10	Dalhousie Street to Brant's Crossing	MUP	0.2	\$ 70,000	\$ 10,500	\$ 80,500
11	Colborne Street West – CR7 to D'Aubigny Road*	MUP	1.2			
12	Colborne Street West –D'Aubigny Road to D'Aubigny Trail (Oakhill Dr / Spalding Dr)	MUP	0.7	\$ 227,500	\$ 34,125	\$ 261,625
13	Wayne Gretzky Parkway Extension – Powerline Road to Park Road*	MUP	0.9			
14	Balmoral Drive – Powerline Road to Oxford Street	Bike Lanes	2.2	\$ 66,000	\$ 9,900	\$ 75,900
15	Oxford Street – Balmoral Drive to King George Road	Bike Lanes	0.5	\$ 15,000	\$ 2,250	\$ 17,250
16	Dunsdon Street - King George Road to Park Road	Road Diet	3.1	\$ 195,300	\$ 29,295	\$ 224,595
17	Dundas Street / Elgin Street - North Park to Wayne Gretzky Parkway	Bike Priority Street	3.0	\$ 330,000	\$ 49,500	\$ 379,500
18	1/4 of total Bike Route / Shared Use Lane projects around the City	Bike Route / Shared Use Lane	7.6	\$ 9,120	\$ 1,368	\$ 10,488
19	Programs (Studies, Events, Initiatives)	N/A	N/A	\$ 820,000	\$ -	\$ 820,000
<b>MEDIUM-TERM 2026 – 2030 (6-10 years)</b>						
20	Oak Park Road Extension – Hardy Road to Colborne Street*	MUP	4.3			
21	Paris Road - Oak Park Road to Golf Road*	Bike Lanes/Paved Shoulder	2.8			
22	Paris Road - Golf Road to Hardy Road	Bike Lanes/Paved Shoulder	1.6	\$ 504,000	\$ 75,600	\$ 579,600
23	Powerline Road – Oak Park Road to King George Road*	MUP & Bike Lanes	3.7			
24	Charing Cross Extension – West Street to Henry Street*	Bike Lanes	0.7			
25	Henry Street – Charing Cross Extension to WGP	Bike Lanes	0.8	\$ 560,000	\$ 84,000	\$ 644,000
26	Charing Cross – King George Road to West Street	Bike Lanes	1.5	\$ 1,050,000	\$ 157,500	\$ 1,207,500
27	Golf Road - Paris Road to Proposed mid-term Development Limit*	Bike Lanes/Paved Shoulder	1.9			
28	Lynden Road – West Street to Garden Avenue	Buffered Bike Lanes	2.4	\$ 1,968,000	\$ 295,200	\$ 2,263,200
29	Garden Avenue – Lynden Road to Henry Street	Buffered Bike Lanes	2.1	\$ 1,722,000	\$ 258,300	\$ 1,980,300
30	Henry Street – Garden Avenue to Garden Avenue	Bike Lanes	0.2	\$ 140,000	\$ 21,000	\$ 161,000
31	Garden Avenue – Henry Street to Elgin Street	Bike Lanes	0.8	\$ 120,000	\$ 18,000	\$ 138,000
32	Brantwood Park Road - Dunsdon Street to Lynden Road	Bike Lanes	1.6	\$ 100,800	\$ 15,120	\$ 115,920
33	Market Street to Mohawk Street	MUP	1.0	\$ 350,000	\$ 52,500	\$ 402,500
34	Shallow Creek Trail - Lynnwood Drive	MUP	1.1	\$ 385,000	\$ 57,750	\$ 442,750
35	William Street – Bedford Street to West Street	Road Diet	1.2	\$ 25,800	\$ 3,870	\$ 29,670
36	Albion Street – Bedford Street to West Street	Road Diet	1.1	\$ 23,650	\$ 3,548	\$ 27,198
37	Memorial / Baxter / Farringford / Edmondson – North Park Street to Wayne Gretzky Parkway Trail	Bike Priority Street	1.7	\$ 187,000	\$ 28,050	\$ 215,050
38	Queensway Drive - St. George Street to King George Road	Bike Priority Street	0.6	\$ 66,000	\$ 9,900	\$ 75,900
39	McMurry / Wells / North Park - Albion Street to St George Street	Bike Priority Street	0.8	\$ 88,000	\$ 13,200	\$ 101,200
40	1/4 of total Bike Route / Shared Use Lane projects around the City	Bike Route / Shared Use Lane	7.6	\$ 9,120	\$ 1,368	\$ 10,488
41	Programs (Studies, Events, Initiatives)	N/A	N/A	\$ 690,000	\$ -	\$ 690,000

#	Proposed Project	Facility Type	Length of ROW (km)	Sub-Total Cost	Contingency**	TOTAL Cost
LONG-TERM 2031 – 2040 (11-20 years)						
42	Powerline Road – King George Road to East City Boundary*	MUP & Bike Lanes	4.0			
43	Brantwood Park Road – Powerline Road to Banbury Road	Bike Lanes	0.7	\$ 44,100	\$ 6,615	\$ 50,715
44	Conklin Road Extension – Mt. Pleasant Road to Phelps Road*	Bike Lanes	2.8			
45	Conklin Road – L.E. & N Trail to Mt. Pleasant	Bike Lanes	0.2	\$ 140,000	\$ 21,000	\$ 161,000
46	Elgin Street – Wayne Gretzky Parkway to Garden Avenue	Bike Lanes	2.3	\$ 1,610,000	\$ 241,500	\$ 1,851,500
47	Roy Boulevard – Lynden Park Mall to Lynden Road	Bike Lanes	1.5	\$ 1,050,000	\$ 157,500	\$ 1,207,500
48	Diana Avenue	Bike Lanes	0.7	\$ 21,000	\$ 3,150	\$ 24,150
49	Erie Avenue – Birkett Lane to City Boundary	Bike Lanes/Paved Shoulder	0.8	\$ 120,000	\$ 18,000	\$ 138,000
50	Mohawk Street – Proposed trail ( Cayuga St / Greenwich St) to Hamilton Brantford Rail Trail	Bike Lanes/Paved Shoulder	1.9	\$ 693,500	\$ 104,025	\$ 797,525
51	Paris Road – Hardy Road to Henderson Avenue	MUP	1.1	\$ 357,500	\$ 53,625	\$ 411,125
52	Colborne Street to Grey Street	MUP	0.5	\$ 175,000	\$ 26,250	\$ 201,250
53	Dante Crescent to Ludlow Crescent	MUP	0.2	\$ 70,000	\$ 10,500	\$ 80,500
54	Blackfriars Lane to Dunsdon Street	MUP	0.8	\$ 280,000	\$ 42,000	\$ 322,000
55	Colborne Street to Bruce Street	MUP	1.1	\$ 357,500	\$ 53,625	\$ 411,125
56	SC Johnson Trail (Dufferin Ave) - SC Johnson Trail (Yorkshire St)	MUP	1.7	\$ 552,500	\$ 82,875	\$ 635,375
57	New East/West Road – Paris Road to King George Road*	Buffered Bike Lanes	4.2			
58	New East/West Road – King George Road to East City Boundary*	Buffered Bike Lanes	4.5			
59	North Brantford Expansion – Golf Road to Wayne Gretzky Parkway	MUP	5.7	\$ 1,995,000	\$ 299,250	\$ 2,294,250
60	North Brantford Expansion Collector Roads	Bike Lanes	7.0	\$ 4,900,000	\$ 735,000	\$ 5,635,000
61	Tutela Heights Expansion – L.E. & N Trail to New Collector Road	MUP	0.3	\$ 105,000	\$ 15,750	\$ 120,750
62	Tutela Heights Expansion Collector Roads	Bike Lanes	1.4	\$ 980,000	\$ 147,000	\$ 1,127,000
63	Davern Road – Tutela Heights Road to Conklin Road Extension	Bike Lanes	0.8	\$ 656,000	\$ 98,400	\$ 754,400
64	Lynden/Garden Expansion Collector Roads	Bike Lanes	1.1	\$ 770,000	\$ 115,500	\$ 885,500
65	Lynden Road – Garden Avenue to East City Boundary	Bike Lanes	1.5	\$ 225,000	\$ 33,750	\$ 258,750
66	Rawdon Street - Darling Street to Able Avenue	Bike Priority Street	1.2	\$ 132,000	\$ 19,800	\$ 151,800
67	Wellington Street - West Street to Park Road North	Bike Priority Street	2.7	\$ 297,000	\$ 44,550	\$ 341,550
68	1/2 of total Bike Route / Shared Use Lane projects around the City	Bike Route / Shared Use Lane	15.2	\$ 18,240	\$ 2,736	\$ 20,976
69	Programs (Studies, Events, Initiatives)	N/A	N/A	\$ 1,375,000	\$ -	\$ 1,375,000
			145.0	\$ 27,958,830	\$ 3,761,075	\$ 31,719,905

Notes: All costs stated in 2020 dollars

\* Costs captured as part of a roadway infrastructure project

\*\* Contingency of 30% for Engineering assumed

City of Brantford: 2020 Transportation Master Plan Update - Transit Infrastructure Capital Cost Estimates

Conventional

	2016	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	Short Term	Mid-Term	Long-Term			
Pop 2016 forecast	100,431	110,700	113,300	115,860	118,431	121,002	123,573	126,144																					
Pop 2020 forecast	101,700	106,500	111,300	114,080	116,860	119,640	122,420	125,200	127,960	130,720	133,480	136,240	139,000	141,600	144,200	146,800	149,400	152,000	154,200	156,400	158,600	160,800	163,000						
Bus Fleet	31	31	31	31	31	31	31	32	33	33	35	35	35	36	36	38	38	39	39	39	39	40	40						
Revenue Hrs - Base		91,703	91,703	93,597	99,696	107,257	115,349	123,504	132,403	136,774	141,193	144,832	149,824	154,988	159,113	159,113	170,183	170,183	170,183	175,853	175,853	175,853	175,853	181,253	181,253				
Revenue Hrs - Increase			1,894	6,099	7,561	8,092	8,155	8,899	4,371	4,419	3,639	4,992	5,164	4,125	-	11,070	-	5,670	-	-	-	5,400	-						
Revenue Hrs - Total		91,703	93,597	99,696	107,257	115,349	123,504	132,403	136,774	141,193	144,832	149,824	154,988	159,113	159,113	170,183	170,183	175,853	175,853	175,853	175,853	181,253	181,253						
Bus Expansion							\$ 1,100,000	\$ 1,100,000		\$ 1,100,000				\$ 1,100,000		\$ 2,200,000		\$ 1,100,000				\$ 1,100,000		\$ 1,100,000	\$ 1,100,000	\$ 2,200,000	\$ 5,500,000		
Bus Replacement			\$ 2,200,000	\$ 3,300,000	\$ 3,300,000	\$ 3,300,000	\$ 2,200,000	\$ 1,100,000	\$ 1,100,000	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 14,300,000	\$ 11,000,000	\$ 13,200,000		
Terminal (1 locations)														\$ 3,750,000	\$ 3,750,000											\$ -	\$ -	\$ 7,500,000	
Lynden Mall					\$ 250,000																						\$ 250,000	\$ -	\$ -
Brantford Commons					\$ 250,000																						\$ 250,000	\$ -	\$ -
Bus Stop/Signage														\$ 120,000		\$ 540,000		\$ 150,000									\$ -	\$ -	\$ 1,080,000
Additional Shelters								\$ 100,000						\$ 60,000		\$ 270,000		\$ 75,000									\$ -	\$ 100,000	\$ 540,000
Transit Center								\$ 1,100,000																			\$ -	\$ 1,100,000	\$ -
ITS					\$ 121,000	\$ 170,000	\$ 270,000	\$ 373,000	\$ 178,000																		\$ 561,000	\$ 551,000	\$ -
Studies (i.e.. Transit TMP)			\$ 375,000						\$ 100,000																		\$ 375,000	\$ 100,000	\$ -
							\$ 16,836,000						\$ 15,051,000										\$ 27,820,000	\$ 16,836,000	\$ 15,051,000	\$ 27,820,000			

Specialized

	2016	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	Short Term	Mid-Term	Long-Term				
In Service Vehicles			14	14	14	14	14	14	14	14	14	14	14	15	15	16	16	17	17	17	17	17	17							
# Vehicles Replaced			2	3	3	2	4	3	2	3	2	3	2	2	2	2	2	2	2	2	2	2	2							
Vehicle Expansion														1		1		1												
Revenue Hours																														
Vehicle Replacement			\$ 220,000	\$ 330,000	\$ 330,000	\$ 220,000	\$ 440,000	\$ 750,000	\$ 500,000	\$ 750,000	\$ 500,000	\$ 750,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 1,540,000	\$ 3,750,000	\$ 5,000,000			
New Vehicles			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 250,000	\$ -	\$ 250,000	\$ -	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			\$ -	\$ -	\$ 750,000	
Telecom Software			\$ 30,000											\$ 50,000													\$ 30,000	\$ -	\$ 50,000	
							\$ 1,570,000						\$ 3,750,000														\$ 5,800,000	\$ 1,570,000	\$ 3,750,000	\$ 5,800,000
TOTAL Conventional + Specialized							\$ 18,406,000						\$ 18,801,000										\$ 33,620,000	\$ 16,836,000	\$ 15,051,000	\$ 27,820,000				

Notes: 2021 -2031 based on 2016 Transit Service Plan 2017-2026, with update to cost assumptions as discussed Aug 28/20  
 2031-2041 based on service expansion and enhancement to Expansion Lands

**City of Brantford: 2020 Transportation Master Plan Update - Road Infrastructure Capital Cost Estimates**

#	Proposed Project	Length of ROW (km)	ROW Lane Costs						Structure Costs	Sub-Total Cost	Contingency***		TOTAL Cost
			Roads	Sidewalks	MUP	Bike lane	Paved shoulder	Total Roadway			Construction	Engineering	
<b>SHORT-TERM 2021 – 2025 (0-5 years)</b>													
1	Veterans Memorial Parkway Widening (4 lanes – Mount Pleasant Street to Erie Avenue)*	1.19						\$ 11,477,705	\$ 18,454,800	\$ 29,932,505	\$ 5,986,501	\$ 4,489,876	\$ 40,408,881
2	Oak Park Road Widening (4 lanes – Powerline Road to Hwy 403 & Fen Ridge Court/Savannah Oaks Drive to Hardy Road)	1.33	\$ 3,072,300	\$ 957,600	\$ -	\$ -	\$ 232,750			\$ 4,262,650	\$ 852,530	\$ 1,278,795	\$ 6,393,975
3	Colborne Street West widening (4 lanes – CR7 to D'Aubigny Road)	1.15	\$ 1,328,250	\$ 414,000	\$ 373,750	\$ -	\$ 201,250			\$ 2,317,250	\$ 463,450	\$ 695,175	\$ 3,475,875
4	Wayne Gretzky Parkway Extension (4 lanes - Powerline Road to Park Road North)	0.85	\$ 1,963,500	\$ 306,000	\$ 276,250	\$ -	\$ 148,750			\$ 2,694,500	\$ 538,900	\$ 808,350	\$ 4,041,750
<b>MEDIUM-TERM 2026 – 2030 (6-10 years)</b>													
5	Oak Park Road Extension (4 Lanes – Hardy Road to Colborne Street)**	4.3						\$ 29,330,385	\$ 35,497,728	\$ 64,828,113	\$ 19,765,590	\$ 14,234,246	\$ 98,827,949
6	Paris Road widening (4 lanes – Oak Park Road to Golf Road)	2.81	\$ 6,491,100	\$ -	\$ -	\$ -	\$ 688,450			\$ 7,179,550	\$ 1,435,910	\$ 2,153,865	\$ 10,769,325
7A	Powerline Road widening (4 lanes – Oak Park Road to King George Road)	3.74	\$ 8,639,400	\$ 1,346,400	\$ 1,215,500	\$ 2,042,040	\$ -			\$ 13,243,340	\$ 2,648,668	\$ 3,973,002	\$ 19,865,010
8	Charing Cross Extension (4 Lanes – West Street to Henry Street)	0.74	\$ 1,709,400	\$ 532,800	\$ -	\$ 404,040	\$ -		\$ 10,000,000	\$ 12,646,240	\$ 2,529,248	\$ 3,793,872	\$ 18,969,360
9	Golf Road TSM (Paris Road to Proposed Development Limit) MID-TERM	1.9	\$ -	\$ 1,368,000	\$ -	\$ -	\$ 1,316,700		\$ 825,000	\$ 3,509,700	\$ 701,940	\$ 1,052,910	\$ 5,264,550
<b>LONG-TERM 2031 – 2040 (11-20 years)</b>													
10	Wayne Gretzky Parkway widening (6 Lane – Lynden Road to Henry Street)	2.02	\$ 6,999,300	\$ -	\$ -	\$ -	\$ 353,500		\$ 12,000,000	\$ 19,352,800	\$ 3,870,560	\$ 5,805,840	\$ 29,029,200
7B	Powerline Road widening (4 lanes – King George Road to East City Boundary)	3.95	\$ 9,124,500	\$ 1,422,000	\$ 1,283,750	\$ 2,156,700	\$ -			\$ 13,986,950	\$ 2,797,390	\$ 4,196,085	\$ 20,980,425
11	Conklin Road Extension (2 lanes - Mt. Pleasant Road to Phelps Road)	2.8	\$ 3,234,000	\$ 2,016,000	\$ -	\$ 1,528,800	\$ -			\$ 6,778,800	\$ 1,355,760	\$ 2,033,640	\$ 10,168,200
12A	New East/West Road (2 lanes – Oak Park Road to King George Road)	4.2	\$ 4,851,000	\$ 3,024,000	\$ -	\$ 2,293,200	\$ -			\$ 10,168,200	\$ 2,033,640	\$ 3,050,460	\$ 15,252,300
12B	New East/West Road (2 lanes – King George Road to East City Boundary)	4.5	\$ 5,197,500	\$ 3,240,000	\$ -	\$ 2,457,000	\$ -			\$ 10,894,500	\$ 2,178,900	\$ 3,268,350	\$ 16,341,750
13	Clarence Street TSM (Icomm Drive to West Street)	1.5	\$ 1,237,500	\$ 1,080,000	\$ -	\$ -	\$ -		\$ 1,900,000	\$ 4,217,500	\$ 843,500	\$ 1,265,250	\$ 6,326,250
										<b>\$ 206,012,598</b>	<b>\$ 48,002,487</b>	<b>\$ 52,099,716</b>	<b>\$ 306,114,800</b>

Notes: All costs stated in 2020 dollars unless identified otherwise in reference reports (i.e. feasibility reports)

\* Reference Costs Source: Veterans Memorial Parkway Widening and Extension, CIMA+, October 2018 - [Assume: Mt Pleasant to Bridge = 950 m (from feasibility study) and Bridge to existing 4-lane cross section west of Erie = 240 m ]

\*\* Reference Costs Source Oak Park Road Extension Feasibility Study , Parsons, July 2019

\*\*\* Contingency of 20% for Construction and 30% for Engineering assumed unless stated specifically in reference reports (i.e. feasibility reports).