**Lakeshore Connecting Communities Study Capital Cost Estimates Summary** 

	Approximate Roadway Construction		Rapidway Median	Curb Side Bus	Traffic Signal and		Major St	ructure	Structura	l Culverts	Contin	ngency	Subt	otal	
Segment	Length (km)	Widening and Rehabilitation	Widening and Reconstruction	Platform	Shelter	Landscaping	Landscaping Illumination Wi		Replacement	Minor Rehabilitation	Major Rehabilitation	Low Range (20%)	High Range (50%)	Low Range	High Range
1															
Winston Churchill Drive to	2.2	\$ 11,481,40	\$ 14,953,400	)	\$ 400,000	\$ 2,200,000	\$ 2,000,000			\$ 160,000	\$ 1,394,000	\$ 3,249,000	\$ 10,474,000	\$ 19,491,000	\$ 31,422,000
Southdown Road															
2															
Southdown Road to	1.6	\$ 7,287,00	9,487,800	)	\$ 500,000	\$ 2,921,000	\$ 3,000,000	\$ 3,915,000	\$ 7,495,000			\$ 3,525,000	\$ 11,702,000	\$ 21,148,000	\$ 35,106,000
Johnson's Lane															
3															
Johnson's Lane to	2.7	\$ 11,366,60	\$ 14,802,200	)	\$ 550,000	\$ 2,700,000	\$ 1,500,000			\$ 196,000	\$ 2,463,000	\$ 3,263,000	\$ 11,008,000	\$ 19,576,000	\$ 33,024,000
Shawnmarr Road															
4															
Shawnmarr Road to	1.0	\$ 4,233,60	5,513,200	)	\$ 400,000	\$ 1,453,000	\$ 2,000,000					\$ 1,618,000	\$ 4,684,000	\$ 9,705,000	\$ 14,051,000
Mississauga Road															
5															
Mississauga Road to	2.0	\$ 8,380,40	\$ 10,914,400	)	\$ 600,000	\$ 5,000,000	\$ 3,500,000	\$ 6,855,000	\$ 12,808,000			\$ 4,868,000	\$ 16,412,000	\$ 29,204,000	\$ 49,235,000
Seneca Avenue															
6															
Seneca Avenue to Cawthra	1.3	\$ 6,483,40	\$ 8,443,400	)	\$ 350,000	\$ 2,455,000	\$ 2,000,000	\$ 2,725,000	\$ 5,344,000			\$ 2,803,000	\$ 9,297,000	\$ 16,817,000	\$ 27,890,000
Road															
7															
Cawthra Road to Etobicoke	2.4	\$ 15,209,60	\$ 19,807,200	9,000,000	\$ 650,000	\$ 2,370,000	\$ 3,500,000			\$ 850,000	\$ 4,602,000	\$ 6,316,000	\$ 19,965,000	\$ 37,896,000	\$ 59,895,000
Creek															
·	·		·		·	·	·	·		·			Total	\$ 153,837,000	\$ 250,623,000

### Notes

- 1. Property costs are not included.
- 2. Roadway construction cost includes grading, drainage, urban sections, paving, granular materials, pavement markings, traffic control, roadside safety and utility relocation.
- 3. Landscaping cost includes enhanced landscaping features such as soil cell system.
- 4. Contingency range covers scope changes, unknown complexities, labour and material shortages, staging and diversion route construction, and market adjustments

Lakeshore Connecting Communities Study			Roadway Utility Relocations					Major Structure (assume concrete bridges)			Structural culvert (concrete) Roadway Protection			Water Control Cost Contingency			Subtotal									
		Estimate	-	,				Widening and Widening	Widening ar		Rapidway			Enhanced												
Capito			•					Rehabilitation Reconstruc	ion		Median	Curbside Bus	Landscaping	Landscape	Traffic Signal	Widening and	Replacement (including	Minor Major								
								(+100% cost for (+100% cos	for (additional 4		Platform	Shelter		Features	and Illumination	Rehabilitation	removal - 15% of new	Rehabilitation Rehabilitation		high	low	high	low	high	low	high
								urban section) urban sect	or roadway	of roadway							structure)	(extension) (replacement	:)							
							unit price		cost)	cost)	\$ 1,500,000	\$ 50,000	\$ 1,000,000	\$ 800	\$ 500,000	\$ 3,500	\$ 6,325	5 \$ 3,000 \$ 6,	900 \$ 50,000	¢ 200 000	¢ 50,000	¢ 200 000	200/	F00/		
Sogmo	nt Long	rth (km)	Lanes Total (km	other additional v	work		unit price	5 000,000 5 090	100	_	\$ 1,500,000	\$ 50,000	\$ 1,000,000	\$ 600	\$ 500,000	\$ 5,500	\$ 0,323	3 3,000 3 6,	3 30,000	\$ 300,000	\$ 50,000	\$ 300,000	20%	50%		
Jegine	iii Eeiig	sur (Kill)	Lanes Total (kill		lvert	20 m2 (extension)	115 m2 (replacement)			+								\$ 60,000 \$ 794,	000 \$ 50,000	\$ 300,000	\$ 50,000	\$ 300 000				
	-	0.71	6 4.2		ivert	minor rehab.	major rehab.											\$ 00,000 \$ 754,	30,000	\$ 300,000	\$ 50,000	\$ 300,000				
	-	0.105	7 0.73		elter	8	major renab.					\$ 400,000														
1		1.385	5 6.92			4									\$ 2,000,000											
															, ,,											
		2.2	11.9	2				\$ 8,201,000 \$ 10,681	000 \$ 3,280,4	0 \$ 4,272,400	)		\$ 2,200,000										\$ 3,249,000	\$ 10,474,000	\$ 19,491,000	\$ 31,422,000
																					Ì					
		0.22	6 1.3	bridge rehab/wi	riden	900 m2										\$ 3,150,000	\$ 5,693,000	)	\$ 50,000	\$ 300,000	\$ 50,000	\$ 300,000				
		0.195	5 0.97	CN bridge rehab/wi	viden	190 m2										\$ 665,000	\$ 1,202,000									
2A		0.06	4 0.2	signalized intersec	ction	1									\$ 500,000											
			======	curb side bus she	elter	3						\$ 150,000														
		0.475	2.53					\$ 1,745,000 \$ 2,272	000 \$ 698,0	00 \$ 908,800	)												1			
	-	0.115	5 0.57		elter	2					1	\$ 100,000	ĺ		I								1			
2B	-	0.23	4 0.9		ation	2					1		l		\$ 1,000,000	]						1				
	-	0.345	1.49	signalized intersec	LLION	2		\$ 1,029,000 \$ 1,340	000 \$ 411,6	00 \$ 536.000	J		Ī		э 1,000,000	]						1				
$\vdash$	-	0.345	5 0.6		elter	4	<del> </del>	\$ 1,029,000 \$ 1,340	JUU \$ 411,6	JU 3 530,000	<del>'  </del>	\$ 200,000	1		1					1	<del>                                     </del>	1	1			
	-	0.13	4 0.85	cui o side ous sile	Citci	*					1	200,000	ĺ		I											
2C		5.215	======	signalized intersec	ction	2					1		Ī		\$ 1,000,000	]						1				
		0.343	1.50					\$ 1,034,000 \$ 1,346	000 \$ 413,6	00 \$ 538,400	1				, -,,											
		0.12	4 0.4	curb side bus she	elter	1						\$ 50,000											1			
2D		0.31	5 1.5	soil	il cell	1660 m2								\$ 1,328,000												
20				signalized intersec	ction	1									\$ 500,000											
		0.43	2.0					\$ 1,397,000 \$ 1,819		0 \$ 727,600													\$ 3,525,000	\$ 11,702,000	\$ 21,148,000	\$ 35,106,000
Total :	2:	1.593	7.56	2				\$ 5,205,000 \$ 6,777	000 \$ 2,082,0	00 \$ 2,710,800	)	\$ 500,000	\$ 1,593,000		\$ 3,000,000											
		0.2	6 1.	cul	lvert	32 m2 (extension)												\$ 96,000 \$ 1,863,	50,000	\$ 300,000	\$ 50,000	\$ 300,000				
		0.6	5			minor rehab.	major rehab.																			
3	-	1.9	4 7.	signalized intersec curb side bus she		3 11						\$ 550,000			\$ 1,500,000											
	-	2.7	11.		eiter	11		\$ 8,119,000 \$ 10,573	000 ¢ 2.247.6	0 6 4 330 300	,	\$ 550,000	\$ 2,700,000										¢ 2.262.000	¢ 11 000 000	\$ 19,576,000	¢ 22.024.000
	-	2.7	11.					\$ 6,119,000 \$ 10,575	3,247,6	3 4,229,200	<del>'\</del>		\$ 2,700,000		1			<del>                                     </del>				1	\$ 3,263,000	\$ 11,008,000	\$ 19,576,000	\$ 33,024,000
-	-	0.455	5 2.27	curb side bus she	oltor	8				+		\$ 400,000							+							
	-	0.433	4 2.1			4						\$ 400,000			\$ 2,000,000											
4		0.55	=======		il cell	585 m2								\$ 468,000												
		0.985	4.39					\$ 3,024,000 \$ 3,938	000 \$ 1,209,6	0 \$ 1,575,200	)		\$ 985,000	, ,,,,,,,,									\$ 1,618,000	\$ 4,684,000	\$ 9,705,000	\$ 14,051,000
		0.54	5 2.	bridge rehab/wi	viden .	1930 m2					1					\$ 6,755,000	\$ 12,208,000		\$ 50,000	\$ 300,000	\$ 50,000	\$ 300,000				
		1.5	4	curb side bus she	elter	12						\$ 600,000														
5A-B-	c			signalized intersec		7					1		Ī		\$ 3,500,000	]						1				
				soil	il cell	3700 m2		l	1.	1.	1	ĺ	Í.	\$ 2,960,000	I								1.	1		
		2.04	8.	1			ļ	\$ 5,986,000 \$ 7,796	000 \$ 2,394,4	0 \$ 3,118,400	)		\$ 2,040,000		<u> </u>					1	<b>!</b>	ļ	\$ 4,868,000	\$ 16,412,000	\$ 29,204,000	\$ 49,235,000
<u> </u>		4.45				750 0			_		<b>.</b>					A 0.55			A 50	4 200 0	4 50 000	4 200 0				
1	-	1.15	5 5.7			750 m2					1	¢ 250.055	Ī		1	\$ 2,625,000	\$ 4,744,000	'	\$ 50,000	\$ 300,000	\$ 50,000	\$ 300,000				
	-	0.065	4 0.2	curb side bus she signalized intersec		7 4					1	\$ 350,000	ĺ		\$ 2,000,000								1			
6	-	0.12	6 0.7		il cell	4 1400 m2					1		Ī	\$ 1,120,000	2,000,000	]						1				
	-	0.12	======	3011	ii ceii	1400 1112								3 1,120,000												
1		1.335	6.7	1				\$ 4,631,000 \$ 6,031	000 \$ 1,852.4	00 \$ 2,412,400	1		\$ 1,335,000		1	]						1	\$ 2,803,000	\$ 9,297,000	\$ 16,817,000	\$ 27,890,000
	1								<u> </u>		1	ì			Ì						1					
	1	1.305	8 10.4	t cul	lvert	250 m2 (extension)	580 m2 (replacement)		1	1	1				1			\$ 750,000 \$ 4,002,	000 \$ 50,000	\$ 300,000	\$ 50,000	\$ 300,000				
		0.38	4 1.5			minor rehab.	major rehab.				1		Ī		1	]					1					
				Rapidway Mei	edian						1	ĺ	ĺ		I								1			
7		0.28	5 1.	Platf		6					\$ 9,000,000	ĺ	ĺ		I								1			
1		0.405	6 2.4			7					1	ĺ	ĺ		\$ 3,500,000								1			
1				curb side bus she	elter	13		L l.		.l	.1	\$ 650,000	l		1	]						1	l			
		2.37	15.7	9				\$ 10,864,000 \$ 14,148	000 \$ 4,345,6	0 \$ 5,659,200	1		\$ 2,370,000										\$ 6,316,000	\$ 19,965,000	\$ 37,896,000	\$ 59,895,000
			=======								1											l		L		
			66.89	′										Reconstruction								****			ć 452 027 ccc	¢ 250 522 600
				avamatria Esti	uida			Resurfacing and Grading														total			\$ 153,837,000	\$ 250,623,000
	MTO Parametric Estimating Guide  Resulfacing and Grading is defined as improvement to the pavement beyond the Reconstruction is the rebuilding of the road structure. It can include removal of existing																									

MTO Central Region Resurfacing and Grading cost = \$ 281,000 Lane Km Avg. Project length = 38.9 Lane Km Project Length Adjustment Factor = 1.2

Primary Resurfacing Treatment Factor = 1.02 (assuming mill 2 + pave 2) Lane km cost = \$ 343,944

additional 100% for urban section = \$ 343,944

Unit price for widening and rehabilitation = \$ 688,000 per Lane Km

Reconstruction \$ 373,000

13.6 Lane Km Avg. Project length = Project Length Adjustment Factor = 1.2 Lane km cost = \$ 447,600 | additional 100% for urban section = \$ 447,600 |
| Unit price for reconstruction = \$ 896,000 per Lane Km

## Resurfacing and Grading

Resurfacing and Grading is defined as improvement to the pavement beyond the surface layers. It can include excavation for frost heaves, ditching, and placement of granular lifts over existing pavement and resurfacing. Refer to Table 1 for average cost relationships of various road treatments.

These costs include grading, drainage, paving, granular material, pavement markings, traffic control and roadside safety improvements.

These costs do not include electrical work, structural work, illumination, loop detectors or traffic counting stations.

Table 3 - Resurfacing and Grading Costs per Lane km Average Average

Cost Per Lane km	Typical Cos	st Range	Number of Lane km	Number of Contracts		
\$281,000	\$170,000 -	\$390,000	38.9	14		
\$205,000	\$125,000 -	\$285,000	27.4	24		
\$211,000	\$130,000 -	\$295,000	40.9	28		
\$158,000	\$95,000 -	\$220,000	55.4	30		
\$267,000	\$165,000 -	\$370,000	25.1	25		
\$216,000	\$95,000 -	\$390,000	38.3	121		
	Cost Per Lane km \$281,000 \$205,000 \$211,000 \$158,000 \$267,000	Cost Per Lane km	Cost Per Lane km   Typical Cost Range   2841,000   \$170,000   \$320,000   \$225,000   \$125,000   \$130,000   \$255,000   \$158,000   \$95,000   \$250,000   \$267,000   \$165,000   \$370,000	Cost Per Lane km         Typical Cost Range Lane km         Number of Lane km           \$281.000         \$170.000         \$390,000         38.9           \$205.000         \$152.000         \$285.000         27.4           \$211,000         \$130.000         \$220,000         40.9           \$188,000         \$90.000         \$220,000         55.4           \$267,000         \$155.000         \$370,000         25.1		

Reconstruction is the rebuilding of the road structure. It can include removal of existing full pavement structure, re-compaction of the subgrade, and complete replacement of the pavement structure. It is performed substantially along the existing alignment, and will normally result in improvements to the geometrics of a road.

Significant cost variations are subject to the degree of reconstruction and the extent of grading.

Costs include grading, drainage, paving, granular material, pavement markings, traffic control and roadside safety improvements.

These costs do not include structural repairs, ATMS, or electrical work.

Table 4 – Reconstruction Costs per Lane km

Region	Average Cost Per Lane km	Typical	Cost	t Range	Average Number of Lane km	Number of Contracts
Central	\$373,000		N/A		13.6	1
East	\$253,000	\$145,000	-	\$330,000	21.0	3
Northeast	\$183,000	\$105,000	-	\$240,000	52.7	9
Northwest	\$150,000	\$100,000	-	\$195,000	54.0	8
West	\$462,000	\$265,000	-	\$600,000	33.4	15
Provincial	\$303,000	\$100,000	-	\$600,000	41.2	36

# Precast Box Culverts

Table 26 - New Structural Culvert Costs - Precast Box

Culvert Top Slab Area (m²)	Top Slab Cost per			t Range	Average Culvert Width (m)	Average Culvert Length (m)	Culvert Count
All Sizes	\$5,000	\$3,000	-	\$6,900	3.6	37.9	29

### All Types and Materials

Table 8 - New Structures (All Types and Materials)

Deck Area (m²)	Average Cost per m <sup>2</sup>	Typica	Structure Count		
1 - 249	\$9,300	\$5,600	-	\$13,300	22
250 - 499	\$5,700	\$3,400	-	\$8,100	28
500 - 749	\$4,400	\$2,600	-	\$6,200	16
750 - 1,000	\$3,900	\$2,400	-	\$5,500	10
1,000 - 3,000	\$3,500	\$2,100	-	\$5,000	30
3,000 +	\$2,300	\$1,400	-	\$3,300	5
All Sizes	\$5,300	\$1,400		\$13,300	111

Notes:

1. Property costs are not included.

2. Contingency range covers scope changes, unknown complexities, labour and material shortages, staging and diversion route construction, and market adjustments.