

APPENDIX C

Harvie Road-Big Bay Road and Highway 400 PIC #2 Capital Cost Breakdown:

- **Cost Estimate for Harvie Road / Big Bay Point Road Crossing Over Highway 400 (Alternatives 2a and 2b)**
- **Cost Estimate for Harvie Road / Big Bay Point Road Crossing Under Highway 400 (Alternatives 3a, 3b and 3c)**
- **Sensitivity Analysis for Highway 400 Staging Costs for Alternatives 2a and 2b at Various Unit Prices**
- **Sensitivity Analysis for Highway 400 Staging Costs for Alternative 3a, 3b or 3c at Various Unit Prices**

Cost Estimate for Harvie Road / Big Bay Point Road
Alternative 2a - Crossing over Highway 400, over Rail, excludes Highway 400 Staging Costs

	Item	Length	Width	Area	Unit	Qty.*	Unit Price	Total
1	Crossing Structure (10 lane)	75	40	3000	m2	3000	\$ 2,300	\$ 6,900,000
2	Earthworks				m3	300000	\$ 7	\$ 2,100,000
3	Harvie/Big Bay Point Road	1.25			km		\$ 6,700,000	\$ 8,375,000
4	Grade Separated Rail Crossing	10	45	450	m2	450	\$ 5,000	\$ 2,250,000
5	Traffic Signals				2			\$ 500,000
6	Whiskey Creek Culvert/SWM (Design Required)	490			m		\$ 7,500	\$ 3,675,000
7	Fairview Road Reconstruction	0.5			km	1	\$ 3,000,000	\$ 1,500,000
							Subtotal:	\$ 25,300,000
	Contingency (30% of Construction Sub-total)							\$ 7,590,000
	Utility Relocation (10% of Sub-total)							\$ 2,530,000
	Engineering (15% of Sub-total)							\$ 3,795,000
	HST (1.76% of Sub-total)							\$ 445,280
							Total:	\$ 39,660,280

Note: shift in stage 2 rest of girders without major Highway shifts

Note: consider retaining walls

10+650 to 9+400

Note:100 year, use 1.8m dia for pricing purposes

Cost Estimate for Harvie Road / Big Bay Point Road
Alternative 2b - Crossing over Highway 400, excludes Highway 400 Staging Costs

	Item	Length	Width	Area	Unit	Qty.*	Unit Price	Total
1	Crossing Structure (10 lane)	75	40	3000	m2	3000	\$ 2,300	\$ 6,900,000
2	Earthworks				m3	200000	\$ 7	\$ 1,400,000
3	Harvie Road reconstruction	1.25			km		\$ 6,500,000	\$ 8,125,000
4	Remove Rail Crossing							\$ 1,200,000
5	Traffic Signals				2			\$ 500,000
6	Whiskey Creek Culvert/SWM (Design Required)	490			m		\$ 7,500	\$ 3,675,000
7	Fairview Road Widening	0.3			km	1	\$ 1,000,000	\$ 300,000
							Subtotal:	\$ 22,100,000
	Contingency (30% of Construction Sub-total)							\$ 6,630,000
	Utility Relocation (10% of Sub-total)							\$ 2,210,000
	Engineering (15% of Sub-total)							\$ 3,315,000
	HST (1.76% of Sub-total)							\$ 388,960
							Total:	\$ 34,643,960

Note: shift in stage 2 rest of girders without major Highway shifts

Note: consider retaining walls

10+650 to 9+400

Note:100 year, use 1.8m dia for pricing purposes

* Ballpark estimate only

Note: prices are based on MTO Parametric Estimating Guideline

Note: Costs may vary significantly as other studies are completed and further detailed analysis

Note: Land for Highway Crossing is 4.1 acres or \$2.1M.

POTENTIAL INTERCHANGE:

Note for Interchange Option: Additional land for Interchange ramps is 2.8 acres or \$1.4M.

Cost of ramp construction is \$8-10M, say \$15M including Contingencies/Engineering/CA based on 1550 m long 1 lane*\$2M/km=\$3M plus 1250m long 2 lane*\$4M/km=\$5M

Cost Estimate for Harvie Road / Big Bay Point Road
Alternative 3a - Crossing under Highway 400, excludes Highway 400 Staging Costs

	Item	Length	Width	Area	Unit	Qty.*	Unit Price	Total
1	Crossing Structure (6 lane)	50	40	2000	m2	2000	\$ 2,500	\$ 5,000,000
2	Earthworks				m3	135000	\$ 7	\$ 945,000
3	Harvie/Big Bay Point Road	1.25			km		\$ 6,700,000	\$ 8,375,000
4	At-grade Rail Crossing							\$ 500,000
5	Traffic Signals				2			\$ 500,000
6	Whiskey Creek Culvert/SWM	390			m		\$ 10,000	\$ 3,900,000
7	Fairview Road Widening	0.3			km	1	\$ 1,000,000	\$ 300,000
							Subtotal:	\$ 19,520,000
	Contingency (30% of Construction Sub-total)							\$ 5,856,000
	Utility Relocation (10% of Sub-total)							\$ 1,952,000
	Engineering (15% of Sub-total)							\$ 2,928,000
	HST (1.76% of Sub-total)							\$ 343,552
							City of Barrie Total:	\$ 30,599,552

Note: to stage 6 lane Hwy 400 only
 Note: consider retaining walls
 10+650 to 9+400

Note: Regional event, 2.3m dia for pricing

Cost Estimate for Harvie Road / Big Bay Point Road
Alternative 3b - Crossing under Highway 400, excludes Highway 400 Staging Costs

	Item	Length	Width	Area	Unit	Qty.*	Unit Price	Total
1	Crossing Structure (6 lane)	50	40	2000	m2	2000	\$ 2,500	\$ 5,000,000
2	Earthworks				m3	135000	\$ 7	\$ 945,000
3	Harvie/Big Bay Point Road	1.25			km		\$ 6,500,000	\$ 8,125,000
4	At-grade Rail Crossing							\$ 500,000
5	Traffic Signals				2			\$ 500,000
6	Whiskey Creek Culvert/SWM	390			m		\$ 10,000	\$ 3,900,000
7	Fairview Road Widening	0.3			km	1	\$ 1,000,000	\$ 300,000
							Subtotal:	\$ 19,270,000
	Contingency (30% of Construction Sub-total)							\$ 5,781,000
	Utility Relocation (10% of Sub-total)							\$ 1,927,000
	Engineering (15% of Sub-total)							\$ 2,890,500
	HST (1.76% of Sub-total)							\$ 339,152
							Total:	\$ 30,207,652

Note: to stage 6 lane Hwy 400 only
 Note: consider retaining walls
 10+650 to 9+400

Note: Regional event, 2.3m dia for pricing

Cost Estimate for Harvie Road / Big Bay Point Road
Alternative 3c - Crossing under Highway 400, excludes Highway 400 Staging Costs

	Item	Length	Width	Area	Unit	Qty.*	Unit Price	Total
1	Crossing Structure (6 lane)	50	40	2000	m2	2000	\$ 2,500	\$ 5,000,000
2	Earthworks				m3	95300	\$ 7	\$ 667,100
3	Harvie/Big Bay Point Road	1.25			km		\$ 6,500,000	\$ 8,125,000
4	At-grade Rail Crossing							\$ 500,000
5	Traffic Signals				2			\$ 500,000
6	Whiskey Creek Culvert/SWM	390			m		\$ 10,000	\$ 3,900,000
7	Fairview Road Widening	0.3			km	1	\$ 1,000,000	\$ 300,000
							Subtotal:	\$ 18,992,100
	Contingency (30% of Construction Sub-total)							\$ 5,781,000
	Utility Relocation (10% of Sub-total)							\$ 1,927,000
	Engineering (15% of Sub-total)							\$ 2,890,500
	HST (1.76% of Sub-total)							\$ 339,152
							Total:	\$ 29,929,752

Note: to stage 6 lane Hwy 400 only
 Note: consider retaining walls
 10+650 to 9+400

Note: Regional event, 2.3m dia for pricing

Cost Estimate for Harvie Road / Big Bay Point Road

Sensitivity Analysis for Highway 400 Staging Costs for Alternative 2a or 2b at Various Unit Prices - Crossing over Highway 400

	Item	Length	Unit	Qty.*	Unit Price	Total
	Shift of Existing Highway 400	1.2	km	1	\$ 8,000,000	\$ 9,600,000
	Shift of Existing Highway 400	1.2	km	1	\$ 10,000,000	\$ 12,000,000
	Shift of Existing Highway 400	1.2	km	1	\$ 14,000,000	\$ 16,800,000

Note: Shift Highway 400 once, to the west

Note: Shift Highway 400 once, to the west

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Cost Estimate for Harvie Road / Big Bay Point Road

Sensitivity Analysis for Highway 400 Staging Costs for Alternative 3a, 3b or 3c at Various Unit Prices - Crossing under Highway 400

	Item	Length	Unit	Qty.*	Unit Price	Total
	Shift of Existing Highway 400	1.2	km	2	\$ 8,000,000	\$ 19,200,000
	Shift of Existing Highway 400	1.2	km	2	\$ 10,000,000	\$ 24,000,000
	Shift of Existing Highway 400	1.2	km	2	\$ 14,000,000	\$ 33,600,000

Note: Shifting Highway 400 (twice)

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* Ballpark estimate only

Note: prices are based on MTO Parametric Estimating Guideline

Note: A higher unit price is more applicable to Alternative 3c that includes raising Highway 400

Note for Interchange Option: Additional land for Interchange ramps is 2.8 acres or \$1.4M.

Cost of ramp construction is \$8-10M, say \$15M including Contingencies/Engineering/CA based on 1550 m long 1 lane*\$2M/km=\$3M plus 1250m long 2 lane*\$4M/km=\$5M

