

APPENDIX A

Preliminary Construction Cost Estimates for Access Road and Inspection Plaza Practical Alternatives

Preliminary Practical Alternative Costs (2011) - Property Cost Not Included

PRACTICAL ALTERNATIVE	OPTION			NORTH TALBOT ROAD TO MALDEN ROAD (\$CAD)	MALDEN ROAD TO PLAZA (\$CAD)	PLAZA (\$CAD)	CROSSING (\$CAD)	TOTAL (\$CAD)	
		PLAZA	CROSSING						
1A	+	A	+	A	\$920,000,000	\$0	\$180,000,000	TBD	TBD
1B	+	A	+	A	\$1,360,000,000	\$0	\$180,000,000	TBD	TBD
2A	+	A	+	A	\$790,000,000	\$0	\$180,000,000	TBD	TBD
2B	+	A	+	A	\$1,200,000,000	\$0	\$180,000,000	TBD	TBD
3	+	A	+	A	\$3,780,000,000	\$0	\$180,000,000	TBD	TBD
Parkway	+	A	+	A	\$1,600,000,000	\$0	\$180,000,000	TBD	TBD
1A	+	A	+	B	\$920,000,000	\$0	\$180,000,000	TBD	TBD
1B	+	A	+	B	\$1,360,000,000	\$0	\$180,000,000	TBD	TBD
2A	+	A	+	B	\$790,000,000	\$0	\$180,000,000	TBD	TBD
2B	+	A	+	B	\$1,200,000,000	\$0	\$180,000,000	TBD	TBD
3	+	A	+	B	\$3,780,000,000	\$0	\$180,000,000	TBD	TBD
Parkway	+	A	+	B	\$1,600,000,000	\$0	\$180,000,000	TBD	TBD
1A	+	B	+	B	\$750,000,000	\$85,000,000	\$180,000,000	TBD	TBD
1B	+	B	+	B	\$1,190,000,000	\$85,000,000	\$180,000,000	TBD	TBD
2A	+	B	+	B	\$620,000,000	\$85,000,000	\$180,000,000	TBD	TBD
2B	+	B	+	B	\$1,030,000,000	\$85,000,000	\$180,000,000	TBD	TBD
3	+	B	+	B	\$3,610,000,000	\$85,000,000	\$180,000,000	TBD	TBD
Parkway	+	B	+	B	\$1,500,000,000	\$80,000,000	\$180,000,000	TBD	TBD
1A	+	A	+	C	\$920,000,000	\$0	\$180,000,000	TBD	TBD
1B	+	A	+	C	\$1,360,000,000	\$0	\$180,000,000	TBD	TBD
2A	+	A	+	C	\$790,000,000	\$0	\$180,000,000	TBD	TBD
2B	+	A	+	C	\$1,200,000,000	\$0	\$180,000,000	TBD	TBD
3	+	A	+	C	\$3,780,000,000	\$0	\$180,000,000	TBD	TBD
Parkway	+	A	+	C	\$1,600,000,000	\$0	\$180,000,000	TBD	TBD
1A	+	B	+	C	\$750,000,000	\$85,000,000	\$180,000,000	TBD	TBD
1B	+	B	+	C	\$1,190,000,000	\$85,000,000	\$180,000,000	TBD	TBD
2A	+	B	+	C	\$620,000,000	\$85,000,000	\$180,000,000	TBD	TBD
2B	+	B	+	C	\$1,030,000,000	\$85,000,000	\$180,000,000	TBD	TBD
3	+	B	+	C	\$3,610,000,000	\$85,000,000	\$180,000,000	TBD	TBD
Parkway	+	B	+	C	\$1,500,000,000	\$80,000,000	\$180,000,000	TBD	TBD
1A	+	C	+	C	\$750,000,000	\$100,000,000	\$180,000,000	*	TBD
1B	+	C	+	C	\$1,190,000,000	\$100,000,000	\$180,000,000	*	TBD
2A	+	C	+	C	\$620,000,000	\$100,000,000	\$180,000,000	*	TBD
2B	+	C	+	C	\$1,030,000,000	\$100,000,000	\$180,000,000	*	TBD
3	+	C	+	C	\$3,610,000,000	\$100,000,000	\$180,000,000	*	TBD
Parkway	+	C	+	C	\$1,500,000,000	\$100,000,000	\$180,000,000	*	TBD

TBD - TO BE DETERMINED

* DOES NOT INCLUDE COST OF KEITH TRANSFORMER STATION RELOCATION (APPROXIMATELY \$180 MILLION)

Preliminary Practical Alternative Costs (2006) - Property Cost Not Included

PRACTICAL ALTERNATIVE	OPTION			NORTH TALBOT ROAD TO MALDEN ROAD (\$CAD)	MALDEN ROAD TO PLAZA (\$CAD)	PLAZA (\$CAD)	CROSSING (\$CAD)	TOTAL (\$CAD)	
		PLAZA	CROSSING						
1A	+	A	+	A	\$790,000,000	\$0	\$150,000,000	TBD	TBD
1B	+	A	+	A	\$1,170,000,000	\$0	\$150,000,000	TBD	TBD
2A	+	A	+	A	\$680,000,000	\$0	\$150,000,000	TBD	TBD
2B	+	A	+	A	\$1,040,000,000	\$0	\$150,000,000	TBD	TBD
3	+	A	+	A	\$3,260,000,000	\$0	\$150,000,000	TBD	TBD
Parkway	+	A	+	A	\$1,380,000,000	\$0	\$150,000,000	TBD	TBD
1A	+	A	+	B	\$790,000,000	\$0	\$150,000,000	TBD	TBD
1B	+	A	+	B	\$1,170,000,000	\$0	\$150,000,000	TBD	TBD
2A	+	A	+	B	\$680,000,000	\$0	\$150,000,000	TBD	TBD
2B	+	A	+	B	\$1,040,000,000	\$0	\$150,000,000	TBD	TBD
3	+	A	+	B	\$3,260,000,000	\$0	\$150,000,000	TBD	TBD
Parkway	+	A	+	B	\$1,380,000,000	\$0	\$150,000,000	TBD	TBD
1A	+	B	+	B	\$650,000,000	\$75,000,000	\$150,000,000	TBD	TBD
1B	+	B	+	B	\$1,020,000,000	\$75,000,000	\$150,000,000	TBD	TBD
2A	+	B	+	B	\$540,000,000	\$75,000,000	\$150,000,000	TBD	TBD
2B	+	B	+	B	\$900,000,000	\$75,000,000	\$150,000,000	TBD	TBD
3	+	B	+	B	\$3,120,000,000	\$75,000,000	\$150,000,000	TBD	TBD
Parkway	+	B	+	B	\$1,300,000,000	\$70,000,000	\$150,000,000	TBD	TBD
1A	+	A	+	C	\$790,000,000	\$0	\$150,000,000	TBD	TBD
1B	+	A	+	C	\$1,170,000,000	\$0	\$150,000,000	TBD	TBD
2A	+	A	+	C	\$680,000,000	\$0	\$150,000,000	TBD	TBD
2B	+	A	+	C	\$1,040,000,000	\$0	\$150,000,000	TBD	TBD
3	+	A	+	C	\$3,260,000,000	\$0	\$150,000,000	TBD	TBD
Parkway	+	A	+	C	\$1,380,000,000	\$0	\$150,000,000	TBD	TBD
1A	+	B	+	C	\$650,000,000	\$75,000,000	\$150,000,000	TBD	TBD
1B	+	B	+	C	\$1,020,000,000	\$75,000,000	\$150,000,000	TBD	TBD
2A	+	B	+	C	\$540,000,000	\$75,000,000	\$150,000,000	TBD	TBD
2B	+	B	+	C	\$900,000,000	\$75,000,000	\$150,000,000	TBD	TBD
3	+	B	+	C	\$3,120,000,000	\$75,000,000	\$150,000,000	TBD	TBD
Parkway	+	B	+	C	\$1,300,000,000	\$70,000,000	\$150,000,000	TBD	TBD
1A	+	C	+	C	\$650,000,000	\$80,000,000	\$150,000,000	*	TBD
1B	+	C	+	C	\$1,020,000,000	\$80,000,000	\$150,000,000	*	TBD
2A	+	C	+	C	\$540,000,000	\$80,000,000	\$150,000,000	*	TBD
2B	+	C	+	C	\$900,000,000	\$80,000,000	\$150,000,000	*	TBD
3	+	C	+	C	\$3,120,000,000	\$80,000,000	\$150,000,000	*	TBD
Parkway	+	C	+	C	\$1,300,000,000	\$90,000,000	\$150,000,000	*	TBD

TBD - TO BE DETERMINED

* DOES NOT INCLUDE COST OF KEITH TRANSFORMER STATION RELOCATION (APPROXIMATELY \$150 MILLION)

Practical Alternative 1A

**Practical Alternative 1A - At-grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Howard Ave.	Km	1.7	\$13,489,722	\$22,932,527
Interchange at Highway 401 / Highway 3 / Howard Avenue	Each	1.0	\$25,000,000	\$25,000,000
6-lane freeway at-grade section - Highways	Km	2.7	\$13,489,722	\$36,287,352
6-lane freeway transition section - Highways	Km	3.6	\$9,567,545	\$34,778,024
6-lane freeway transition section - Structural	L.S.	1.0	\$85,050,000	\$85,050,000
6-lane freeway below grade section - Highways	Km	1.8	\$9,567,545	\$17,374,661
6-lane freeway below grade section - Structural	L.S.	1.0	\$81,720,000	\$81,720,000
6-lane freeway above grade section - Highways	Km	0.6	\$9,583,569	\$5,366,798
Excavation - transition section	m3	154851.0	\$10	\$1,548,510
Excavation - below grade section	m3	84625.6	\$10	\$846,256
Municipal road on both sides of the freeway	Km	5.6	\$2,612,375	\$14,629,299
Realign Huron Church Line	Km	1.0	\$1,700,000	\$1,700,000
Underpass structure at Howard Ave	Each	1.0	\$3,522,000	\$3,522,000
Underpass structure at Cousineau Road	Each	1.0	\$3,461,000	\$3,461,000
Pedestrian Plaza at Cousineau Road	Each	1.0	\$8,778,000	\$8,778,000
Underpass structure at St.Clair College Road	Each	1.0	\$1,977,000	\$1,977,000
Underpass structure at Todd Lane / Cabana Road	Each	1.0	\$2,724,000	\$2,724,000
Pedestrian Plaza at Todd Lane / Cabana Road	Each	1.0	\$11,844,000	\$11,844,000
Interchange at St. Clair College	Each	1.0	\$18,000,000	\$18,000,000

**Practical Alternative 1A - At-grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Bridge at Turkey Creek	Each	1.0	\$4,659,000	\$4,659,000
Underpass structure at Grand Marais Road West	Each	1.0	\$3,478,000	\$3,478,000
Partial interchange at E.C. ROW Expressway	Each	1.0	\$25,000,000	\$25,000,000
6-lane freeway transition section from Huron Church Road to Plaza A - Structure (36m wide)	Km	0.8	\$80,000,000	\$60,800,000
Overpass structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Interchange at Malden Road	L.S.	1.0	\$50,000,000	\$50,000,000
Stormwater Management Facility	L.S.	1.0	\$5,025,000	\$5,025,000
Drainage	L.S.	1.0	\$15,069,600	\$15,069,600
Pumping Stations	L.S.	1.0	\$3,200,000	\$3,200,000
Roadway Storm Sewer	L.S.	1.0	\$16,064,080	\$16,064,080
Signalized intersection	Each	10.0	\$200,000	\$2,000,000
Small Drain Culverts	L.S.	6.0	\$300,000	\$1,800,000
Construction staging	L.S.	1.0	\$10,000,000	\$10,000,000
Utility Relocations	L.S.	1.0	\$30,000,000	\$30,000,000
Subtotal				\$607,495,107
Contingency		20.0%		\$121,499,021
Total Construction Cost \$CAD				\$728,994,129
Engineering (Design, Construction Administration)		10.0%		\$60,749,511
Total Cost \$CAD (2006)				\$789,743,639

**Practical Alternative 1A - At-grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Cost Escalate \$CAD (2011)		3.0%		\$915,529,327
		1.16		
Rounded Cost \$CAD (2011)				\$920,000,000

* All cost based on 2006 HICO unit prices

**Practical Alternative 1A - At-grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Howard Ave.	Km	1.7	\$13,489,722	\$22,932,527
Interchange at Highway 401 / Highway 3 / Howard Avenue	Each	1.0	\$25,000,000	\$25,000,000
6-lane freeway at-grade section - Highways	Km	3.1	\$13,489,722	\$41,683,241
6-lane freeway transition section - Highways	Km	2.8	\$9,567,545	\$27,123,989
6-lane freeway transition section - Structural	L.S.	1.0	\$85,050,000	\$85,050,000
6-lane freeway below grade section - Highways	Km	1.8	\$9,567,545	\$17,374,661
6-lane freeway below grade section - Structural	L.S.	1.0	\$81,720,000	\$81,720,000
6-lane freeway above grade section - Highways	Km	0.5	\$9,583,569	\$4,791,784
Excavation - transition section	m3	120771.0	\$10	\$1,207,710
Excavation - below grade section	m3	84625.6	\$10	\$846,256
Municipal road on both sides of the freeway	Km	5.6	\$2,612,375	\$14,629,299
Realign Huron Church Line	Km	1.0	\$1,700,000	\$1,700,000
Underpass structure at Howard Ave	Each	1.0	\$3,522,000	\$3,522,000
Underpass structure at Cousineau Road	Each	1.0	\$3,461,000	\$3,461,000
Pedestrian Plaza at Cousineau Road	Each	1.0	\$8,778,000	\$8,778,000
Underpass structure at St.Clair College Road	Each	1.0	\$1,977,000	\$1,977,000
Underpass structure at Todd Lane / Cabana Road	Each	1.0	\$2,724,000	\$2,724,000
Pedestrian Plaza at Todd Lane / Cabana Road	Each	1.0	\$11,844,000	\$11,844,000
Interchange at St. Clair College	Each	1.0	\$18,000,000	\$18,000,000

**Practical Alternative 1A - At-grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

Bridge at Turkey Creek	Each	1.0	\$4,659,000	\$4,659,000
Underpass structure at Grand Marais Road West	Each	1.0	\$3,478,000	\$3,478,000
Partial interchange at E.C. ROW Expressway	Each	1.0	\$25,000,000	\$25,000,000
Overpass structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Stormwater Management Facility	L.S.	1.0	\$5,025,000	\$5,025,000
Drainage	L.S.	1.0	\$15,069,600	\$15,069,600
Pumping Stations	L.S.	1.0	\$3,200,000	\$3,200,000
Roadway Storm Sewer	L.S.	1.0	\$16,064,080	\$16,064,080
Signalized intersection	Each	10.0	\$200,000	\$2,000,000
Small Drain Culverts	L.S.	6.0	\$300,000	\$1,800,000
Construction staging	L.S.	1.0	\$10,000,000	\$10,000,000
Utility Relocations	L.S.	1.0	\$30,000,000	\$30,000,000
Subtotal				\$493,521,146
Contingency		20.0%		\$98,704,229
Total Construction Cost \$CAD				\$592,225,376
Engineering (Design, Construction Administration)		10.0%		\$49,352,115
Total Cost \$CAD (2006)				\$641,577,490
Cost Escalate \$CAD (2011)		3.0% 1.16		\$743,764,151
Rounded Cost \$CAD (2011)				\$750,000,000

* All cost based on 2006 HICO unit prices

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Alignment Alternative "1A" Practical - At Grade Freeway Along Talbot / Huron Church Road with Service Roads on Both Sides

Structure I.D.	Structure Name	Structure Type	Length (M)	Width (M)	Cost (\$)
1A - 10	Highway 3 WB Underpass	Three Spans Bridge	42+26+29	12.55	\$2,556,000
1A - 11	Highway 401 Ramp W-E Underpass	Single Span Bridge	36	12.05	\$911,000
1A - 12	Highway 401 Ramp E-N/S Overpass	Single Span Bridge	39	12.05	\$987,000
1A - 13	Ramp E-W at West of Howard Avenue	Boat Section	400	Length	\$12,000,000
1A - 20	Approach Ramp of Highway 401 at East of Howard Avenue	Boat Section	500	Length	\$15,000,000
1A - 21	Below Grade Hwy 401 at Howard Avenue	Boat Section	93	Length	\$4,185,000
1A - 22	Howard Avenue Underpass	Two Spans Bridge	26+32	27.6	\$3,522,000
1A - 23	Approach Ramp of Highway 401 at West of Howard Avenue	Boat Section	300	Length	\$9,000,000
1A - 30	Approach Ramp of Hwy 401 at East of Cousineau Road	Boat Section	350	Length	\$10,500,000
1A - 31	Below Grade Hwy 401 at Cousineau Road	Boat Section	658	Length	\$29,610,000
1A - 32	Cousineau Road Underpass	Two Spans Bridge	27+30	27.6	\$3,461,000
1A - 33	Pedestrian Plaza at Cousineau Road	Two Spans Bridge	27+30	70	\$8,778,000
1A - 34	St.Clair College Road Underpass	Two Spans Bridge	26+26	18.1	\$1,977,000
1A - 35	Approach Ramp of Hwy 401 at West of St.Clair Collge Road	Boat Section	250	Length	\$7,500,000
1A - 36	Below Grade Hwy 401 at East of Cousineau Road	Boat Section	300	Length	\$13,500,000
1A - 37	Ramps E-W & W-E to Hwy 401 at West of Cousineau Road	Boat Section	480	Length	\$14,400,000
1A - 40	Approach Ramp of Hwy 401 at East of Cabana Road	Boat Section	410	Length	\$12,300,000
1A - 41	Below Grade Hwy 401 at Cabana Road	Boat Section	128	Length	\$5,760,000
1A - 42	Cabana Road Underpass	Two Spans Bridge	21+26	27.6	\$2,724,000
1A - 43	Pedestrian Plaza at Cabana Road West	Two Spans Bridge	21+21	120	\$11,844,000
1A - 44	Approach Ramp of Hwy 401 at West of Cabana Road	Boat Section	375	Length	\$11,250,000
1A - 50	Turkey Creek Bridge	Single Span Bridge	26	89.6	\$4,659,000
1A - 60	Approach Ramp of Hwy 401 at Grand Marais Road West side	Boat Section	350	Length	\$10,500,000
1A - 61	Below Grade Hwy 401 at South of Huron Church Road	Boat Section	637	Length	\$28,665,000
1A - 62	Huron Church Road Ramp N-S Underpass	Two Spans Bridge	36+33	12.05	\$1,829,000
1A - 63	Grand Marais Road West Underpass	Two Spans Bridge	30+30	27.6	\$3,478,000
1A - 64	Approach Ramp of Hwy 401 at just East of EC ROW Expressway	Boat Section	300	Length	\$9,000,000
1A - 65	Ramps N-S & S-N to Hwy 401 at East of Huron Church Line	Boat Section	420	Length	\$12,600,000
1A - 66	Below Grade Ramps S-N, N-S to Hwy 401 at East of Huron Church Line	Boat Section	150	Length	\$6,750,000
1A - 90	Malden Road Overpass	Single Span Bridge	35	40.85	\$2,860,000
1A - 91	Ramp W-E Underpass	Two Spans Bridge	45+45	9.3	\$1,758,000
1A - 92	Matchette Road Overpass	Single Span Bridge	40	40.85	\$3,268,000
1A - 93	Ojibway / ETR Overpass	Three Spans Bridge	34+34+45	37.85	\$10,693,000
1A - 94	Ramp E-W at Ojibway Parkway Overpass	Single Span Bridge	44	12.05	\$1,060,000

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Alignment Alternative "1A" Practical - At Grade Freeway Along Talbot / Huron Church Road with Service Roads on Both Sides

Structure I.D.	Structure Name	Structure Type	Length (M)	Width (M)	Cost (\$)
1A - 95	Ramp E-W at ETR Overpass	Single Span Bridge	30	12.05	\$904,000
1A - 110	Cahill Drain Culvert	Culvert	1	Nos.	\$300,000
1A - 120	Secondary Drain Culvert	Culvert	1	Nos.	\$300,000
1A - 130	Lennon Drain Culvert	Culvert	1	Nos.	\$300,000
1A - 140	Marentette Mangin Drain Culvert	Culvert	1	Nos.	\$300,000
1A - 150	Basin Drain Culvert	Culvert	1	Nos.	\$300,000
1A - 160	Titcombe Drain Culvert	Culvert	1	Nos.	\$300,000
<u>TOTAL COST</u>					<u>\$281,589,000</u>

Note: Above Costs include only Structural Costs. These costs do not include Roadwork, Earthwork, Road & Traffic Diversions, Roadway Protection etc; which are included in the Highway Costs

Detroit River International Crossing
STORMWATER MANAGEMENT STUDY
 Highway 3 / Huron Church Road Corridor
ALTERNATIVE 1A - At Grade
CONSTRUCTION COST ESTIMATE

PRELIMINARY
 COST TO BE CONFIRMED

Item	Description	Quantity	Unit	Unit Cost	Total
I	Stormwater Management Facility	43,817	cu.m.	\$ 114.68	\$ 5,025,000.00
	Inlet/ Outlet Control Structure	10	L.S.	125,000.00	1,250,000.00
	Landscaping	10	L.S.	200,000.00	2,000,000.00
	Earthworks	177,500	cu.m.	10.00	1,775,000.00
III	Oil Grit Separator	-	unit		
IV	Drainage	1,830	l.m.	\$ 8,234.75	\$ 15,069,600.00
	Wolfe/Cahill Drainage 4.5 x 1.5	1,200	l.m.	6,000.00	7,200,000.00
	Wolfe/Cahill Drain Catch Basins	60	unt	700.00	42,000.00
	Cahill Drain Crossing 4.5 x 1.5	200	l.m.	6,000.00	1,200,000.00
	Cahill West Tributary Re-Alignment/Replacement (1200mmØ)	155	l.m.	575.00	89,125.00
	Lenon Drain, Replacement 3.0 x 1.50	140	l.m.	3,500.00	490,000.00
	Marentette Mangin Drain (1200mmØ)	15	l.m.	575.00	8,625.00
	Basin Drain, Replacement 2.1 x 1.50	60	l.m.	3,000.00	180,000.00
	Titcombe Drain (1200mmØ)	50		575.00	28,750.00
	Installation & Demolition (60% of direct cost) 9,238,500		L.S.		5,543,100.00
	Earthworks	24,000	cu.m.	12.00	288,000.00
V	Pumping Station	4	unit	\$ 800,000.00	\$ 3,200,000.00
	Pump No. of Pumping Sta = 4	4	unit	600,000.00	2,400,000.00
	Pump House	4	unit	200,000.00	800,000.00
VI	Roadway Storm Sewer (Conveying 5-Year Storm)	10,890	l.m.	\$ 1,475.12	\$ 16,064,080.00
	Highway 401				
	Storm Sewer (average size = 750 mm)	10,890	l.m.	400.00	4,356,000.00
	Manholes (average size = 1500 mm)	121	unit	4,450.00	538,450.00
	Catch Basins (standard depth)	363	unit	700.00	254,100.00
	Catch Basin Leads	12,705	l.m.	50.00	635,250.00
	Miscellaneous (MH/CB Covers, etc)	121	unit	3,000.00	363,000.00
	Earthworks	11,000	cu.m.	12.00	132,000.00
	Installation (60% of direct cost) 5,783,800.00				3,688,080.00
	Service Road				-
	Storm Sewer (average size = 600 mm)	12,605	l.m.	150.00	1,890,750.00
	Manholes (average size = 1200 mm)	150	unit	2,000.00	300,000.00
	Catch Basins	450	unit	700.00	315,000.00
	Catch Basin Leads	15,750	l.m.	50.00	787,500.00
	Miscellaneous (MH/CB Covers, etc)	150	unit	3,000.00	450,000.00
	Earthworks	9,000	cu.m.	12.00	108,000.00
	Installation (60% of direct cost) 3,293,250.00				2,245,950.00
Estimated Direct and Indirect Cost					\$ 39,358,680.00
Add 20% Contingency					\$ 7,871,736.00
Total Estimated Construction Cost					\$ 47,230,416.00

90% = \$ 43,000,000.00

Practical Alternative 1B

**Practical Alternative 1B - Below grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Howard Ave.	Km	1.7	\$13,489,722	\$22,932,527
Interchange at Highway 401 / Highway 3 / Howard Avenue	Each	1.0	\$25,000,000	\$25,000,000
6-lane freeway transition section - Highways	Km	1.7	\$9,567,545	\$15,977,799
6-lane freeway transition section - Structural	L.S.	1.0	\$42,550,000	\$42,550,000
6-lane freeway below grade section - Highways	Km	5.4	\$9,567,545	\$51,664,740
6-lane freeway below grade section - Structural	L.S.	1.0	\$275,000,000	\$275,000,000
6-lane freeway above grade section - Highways	Km	0.6	\$9,583,569	\$5,366,798
Excavation - transition section	m3	71142.0	\$10	\$711,420
Excavation - below grade section	m3	251640.0	\$10	\$2,516,400
Municipal road on both sides of the freeway	Km	5.6	\$2,612,375	\$14,629,299
Realign Huron Church Line	Km	1.0	\$1,700,000	\$1,700,000
Underpass structure at Howard Ave	Each	1.0	\$3,036,000	\$3,036,000
Underpass structure at Montgomery Drive	Each	1.0	\$1,596,000	\$1,596,000
Underpass structure at Cousineau Road	Each	1.0	\$3,279,000	\$3,279,000
Pedestrian plaza at Cousineau Road	Each	1.0	\$8,526,000	\$8,526,000
Underpass structure at St.Clair College Road	Each	1.0	\$1,977,000	\$1,977,000
Interchange at St. Clair College	Each	1.0	\$38,000,000	\$38,000,000
Underpass structure at Huron Church Line	Each	1.0	\$2,512,000	\$2,512,000
Underpass structure at Todd Lane /	Each	1.0	\$2,434,000	\$2,434,000

**Practical Alternative 1B - Below grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Cabana Road				
Pedestrian plaza at Cabana Road West	Each	1.0	\$10,584,000	\$10,584,000
Underpass structure at Pulford Street	Each	1.0	\$1,977,000	\$1,977,000
Underpass structure at Lambton Road	Each	1.0	\$3,130,000	\$3,130,000
Underpass structure at Labelle Street/ Bethlehem	Each	1.0	\$2,071,000	\$2,071,000
Pulford Street Interchange	Each	1.0	\$48,000,000	\$48,000,000
Turkey Creek Tunnel	Each	1.0	\$26,500,000	\$26,500,000
Turkey Creek Bridge	Each	1.0	\$8,007,000	\$8,007,000
Partial interchange at E.C. ROW Expressway	Each	1.0	\$50,000,000	\$50,000,000
6-lane freeway transition section from Huron Church Road to Plaza A - Structure (36m wide)	Km	0.8	\$80,000,000	\$60,800,000
Overpass structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Interchange at Malden Road	L.S.	1.0	\$50,000,000	\$50,000,000
Stormwater Management Facility	L.S.	1.0	\$3,850,000	\$3,850,000
Drainage	L.S.	1.0	\$44,327,800	\$44,327,800
Pumping Stations	L.S.	1.0	\$4,000,000	\$4,000,000
Roadway Storm Sewer	L.S.	1.0	\$17,426,408	\$17,426,408
Signalized intersection	Each	13.0	\$200,000	\$2,600,000
Small drain culverts	L.S.	6.0	\$300,000	\$1,800,000

**Practical Alternative 1B - Below grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Construction staging	L.S.	1.0	\$10,000,000	\$10,000,000
Utility Relocations	L.S.	1.0	\$30,000,000	\$30,000,000
Subtotal				\$897,342,192
Contingency		20.0%		\$179,468,438
Total Construction Cost \$CAD				\$1,076,810,630
Engineering (Design, Construction Administration)		10.0%		\$89,734,219
Total Cost \$CAD (2006)				\$1,166,544,849
Cost Escalate \$CAD (2011)		3.0%		\$1,352,345,200
		1.16		
Rounded Cost \$CAD (2011)				\$1,360,000,000

* All cost based on 2006 HICO unit prices

**Practical Alternative 1B - Below grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Howard Ave.	Km	1.7	\$13,489,722	\$22,932,527
Interchange at Highway 401 / Highway 3 / Howard Avenue	Each	1.0	\$25,000,000	\$25,000,000
6-lane freeway at-grade section - Highways	Km	0.4	\$13,489,722	\$5,395,889
6-lane freeway transition section - Highways	Km	0.9	\$9,567,545	\$8,323,764
6-lane freeway transition section - Structural	L.S.	1.0	\$42,550,000	\$42,550,000
6-lane freeway below grade section - Highways	Km	5.4	\$9,567,545	\$51,664,740
6-lane freeway below grade section - Structural	L.S.	1.0	\$275,000,000	\$275,000,000
6-lane freeway above grade section - Highways	Km	0.5	\$9,583,569	\$4,791,784
Excavation - transition section	m3	37062.0	\$10	\$370,620
Excavation - below grade section	m3	251640.0	\$10	\$2,516,400
Municipal road on both sides of the freeway	Km	5.6	\$2,612,375	\$14,629,299
Realign Huron Church Line	Km	1.0	\$1,700,000	\$1,700,000
Underpass structure at Howard Ave	Each	1.0	\$3,036,000	\$3,036,000
Underpass structure at Montgomery Drive	Each	1.0	\$1,596,000	\$1,596,000
Underpass structure at Cousineau Road	Each	1.0	\$3,279,000	\$3,279,000
Pedestrian plaza at Cousineau Road	Each	1.0	\$8,526,000	\$8,526,000
Underpass structure at St.Clair College Road	Each	1.0	\$1,977,000	\$1,977,000
Interchange at St. Clair College	Each	1.0	\$38,000,000	\$38,000,000
Underpass structure at Huron Church Line	Each	1.0	\$2,512,000	\$2,512,000

**Practical Alternative 1B - Below grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

Underpass structure at Todd Lane / Cabana Road	Each	1.0	\$2,434,000	\$2,434,000
Pedestrian plaza at Cabana Road West	Each	1.0	\$10,584,000	\$10,584,000
Underpass structure at Pulford Street	Each	1.0	\$1,977,000	\$1,977,000
Underpass structure at Lambton Road	Each	1.0	\$3,130,000	\$3,130,000
Underpass structure at Labelle Street/ Bethlehem	Each	1.0	\$2,071,000	\$2,071,000
Pulford Street Interchange	Each	1.0	\$48,000,000	\$48,000,000
Turkey Creek Tunnel	Each	1.0	\$26,500,000	\$26,500,000
Turkey Creek Bridge	Each	1.0	\$8,007,000	\$8,007,000
Partial interchange at E.C. ROW Expressway	Each	1.0	\$50,000,000	\$50,000,000
Overpass structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Stormwater Management Facility	L.S.	1.0	\$3,850,000	\$3,850,000
Drainage	L.S.	1.0	\$44,327,800	\$44,327,800
Pumping Stations	L.S.	1.0	\$4,000,000	\$4,000,000
Roadway Storm Sewer	L.S.	1.0	\$17,426,408	\$17,426,408
Signalized intersection	Each	13.0	\$200,000	\$2,600,000
Small drain culverts	L.S.	6.0	\$300,000	\$1,800,000
Construction staging	L.S.	1.0	\$10,000,000	\$10,000,000

**Practical Alternative 1B - Below grade on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

Utility Relocations	L.S.	1.0	\$30,000,000	\$30,000,000
Subtotal				\$783,368,231
Contingency		20.0%		\$156,673,646
Total Construction Cost \$CAD				\$940,041,877
Engineering (Design, Construction Administration)		10.0%		\$78,336,823
Total Cost \$CAD (2006)				\$1,018,378,700
Cost Escalate \$CAD (2011)		3.0%		\$1,180,580,025
		1.16		
Rounded Cost \$CAD (2011)				\$1,190,000,000

* All cost based on 2006 HICO unit prices

URS Canada Inc.

Alignment Alternative "1B" Practical - Below Grade Freeway Along Talbot / Huron Church Road with Service Roads on Both Sides

Structure I.D.	Structure Name	Structure Type	Length (M)	Width (M)	Cost (\$)
1B - 10	Highway 3 WB Underpass	Three Spans Bridge	42+26+23	12.55	\$2,398,000
1B - 11	Highway 401 Ramp W-E Underpass	Single Span Bridge	36	12.05	\$911,000
1B - 12	Highway 401 Ramp E-N/S Overpass	Single Span Bridge	39	12.05	\$987,000
1B - 13	Ramp E-W at East of Howard Avenue	Boat Section	540	Length	\$16,200,000
1B - 14	Approach Ramp of Highway 401 at East of Howard Avenue	Boat Section	400	Length	\$12,000,000
1B - 20	Highway with Ramp E-W at East of Howard Avenue	Boat Section	100	Length	\$3,000,000
1B - 22	Howard Avenue Underpass	Two Spans Bridge	23+27	27.6	\$3,036,000
1B - 23	Montgomery Drive Underpass	Two Spans Bridge	21+21	18.1	\$1,596,000
1B - 32	Cousineau Road/Sandwich Parkway Underpass	Two Spans Bridge	27+27	27.6	\$3,279,000
1B - 33	Pedestrian Plaza at Cousineau Road	Two Spans Bridge	29+29	70	\$8,526,000
1B - 34	St.Clair College Road Underpass	Two Spans Bridge	26+26	18.1	\$1,977,000
1B - 35	Huron Church Line Underpass	Two Spans Bridge	21+21	26	\$2,512,000
1B - 36	Ramps E-W & W-E on East of St.Clair College Road	Boat Section	560	Length	\$16,800,000
1B - 37	Ramps E-W & W-E on West of St.Clair College Road	Boat Section	600	Length	\$18,000,000
1B - 42	Cabana Road West / Todd Lane Underpass	Two Spans Bridge	21+21	27.6	\$2,434,000
1B - 43	Pedestrian Plaza at Cabana Road West	Two Spans Bridge	21+21	120	\$10,584,000
1B - 44	Pulford Street Underpass	Two Spans Bridge	26+26	18.1	\$1,977,000
1B - 51	Grand Marais West / Lampton Underpass	Two Spans Bridge	27+27	27.6	\$3,130,000
1B - 55	Turkey Creek Bridge for Service Roads (incl.staged const.,temp.bridge etc)	Single Span Bridge	28	40.85	\$8,007,000
1B - 60	Ramps S-N & N-S on East of Pulford Street	Boat Section	670	Length	\$43,550,000
1B - 61	Ramps S-N & N-S on East of Grand Marais Road	Boat Section	620	Length	\$40,300,000
1B - 62	Huron Church Road Ramp N-S Underpass	Two Spans Bridge	33+34	12.05	\$1,776,000
1B - 63	Labelle Street/Bethlehem Avenue Underpass	Two Spans Bridge	26+26	18.1	\$2,071,000
1B - 64	Approach Ramp of Highway 401 near EC ROW Expressway	Boat Section	470	Length	\$30,550,000
1B - 90	Malden Road Overpass	Single Span Bridge	35	40.85	\$2,860,000
1B - 91	Ramp W-E Underpass	Two Spans Bridge	45+45	9.3	\$1,758,000
1B - 92	Matchette Road Overpass	Single Span Bridge	40	40.85	\$3,268,000
1B - 93	Ojibway / ETR Overpass	Three Spans Bridge	34+34+45	37.85	\$10,693,000
1B - 94	Ramp E-W at Ojibway Parkway Overpass	Single Span Bridge	44	12.05	\$1,060,000
1B - 95	Ramp E-W at ETR Overpass	Single Span Bridge	30	12.05	\$904,000
1B - 201	Below Grade Highway 401 at East of Howard Avenue	Boat Section	100	Length	\$4,500,000
1B - 202	Below Grade Hwy 401 bet.Howard Avenue & Montgomery Drive	Boat Section	800	Length	\$36,000,000
1B - 203	Below Grade Hwy 401 at West of Montgomery Drive	Boat Section	600	Length	\$27,000,000

URS Canada Inc.

Alignment Alternative "1B" Practical - Below Grade Freeway Along Talbot / Huron Church Road with Service Roads on Both Sides

Structure I.D.	Structure Name	Structure Type	Length (M)	Width (M)	Cost (\$)
1B - 204	Below Grade Highway 401 with S.C.L.at East of Cousineau Rd./Sandwich Parkway	Boat Section	150	Length	\$6,750,000
1B - 211	Below Grade Highway 401 bet.Cousineau & St.Clair College Road	Boat Section	475	Length	\$21,375,000
1B - 212	Below Grade Highway 401 at West of St.Clair College Road	Boat Section	425	Length	\$19,125,000
1B - 213	Below Grade Highway 401 with S.C.L.at West of St.Clair College Road	Boat Section	250	Length	\$11,250,000
1B - 214	Below Grade Highway 401 at East of Huron Church Line	Boat Section	425	Length	\$19,125,000
1B - 215	Below Grade Highway 401 bet.Huron Church Line & Cabana Rd. West/Todd Lane	Boat Section	400	Length	\$18,000,000
1B - 221	Below Grade Highway 401 at West of Todd Lane	Boat Section	400	Length	\$26,000,000
1B - 222	Below Grade Highway 401 with S.C.L.at East of Pulford Street	Boat Section	200	Length	\$13,000,000
1B - 223	Below Grade Highway 401 bet.Pulford Street & Grand Marais Rd.West	Boat Section	325	Length	\$21,125,000
1B - 224	Below Grade Highway 401 with S.C.L.at East of Grand Marais Rd.West/Lambton Road	Boat Section	125	Length	\$8,125,000
1B - 225	Highway 401 in Tunnel under Turkey Creek	Cut & Cover Tunnel	100	Length	\$26,500,000
1B - 231	Below Grade Hwy 401 with S.C.L.at West of Grand Marais Rd.West/Lambton Road	Boat Section	125	Length	\$8,125,000
1B - 232	Below Grade Highway 401 bet.Grand Marais Road & Labelle Street	Boat Section	400	Length	\$26,000,000
1B - 233	Below Grade Highway 401 at West of Labelle Street / Bethlehen	Boat Section	100	Length	\$6,500,000
1B - 110	Cahill Drain Culvert	Culvert	1	Nos.	\$300,000
1B - 120	Secondary Drain Culvert	Culvert	1	Nos.	\$300,000
1B - 130	Lennon Drain Culvert	Culvert	1	Nos.	\$300,000
1B - 140	Marentette Mangin Drain Culvert	Culvert	1	Nos.	\$300,000
1B - 150	Basin Drain Culvert	Culvert	1	Nos.	\$300,000
1B - 160	Titcombe Drain Culvert	Culvert	1	Nos.	\$300,000
TOTAL COST					\$556,444,000

Note: Above Costs include only Structural Costs. These costs do not include Roadwork, Earthwork, Road & Traffic Diversions, Roadway Protection etc; which are included in the Highway Costs.

Detroit River International Crossing
STORMWATER MANAGEMENT STUDY
 Highway 3 / Huron Church Road Corridor
ALTERNATIVE 1B - Below Grade
CONSTRUCTION COST ESTIMATE

PRELIMINARY
 COST TO BE CONFIRMED

Item	Description	Quantity	Unit	Unit Cost	Total
I	Stormwater Management Facility	40,738	cu.m.	\$ 94.51	\$ 3,850,000.00
	Inlet/ Outlet Control Structure	7	L.S.	125,000.00	875,000.00
	Landscaping	7	L.S.	200,000.00	1,400,000.00
	Earthworks	157,500	cu.m.	10.00	1,575,000.00
III	Oil Grit Separator	-	unit		
IV	Drainage	2275	l.m.	\$ 19,484.75	\$ 44,327,800.00
	Cahill/Wolfe Drainage 4.5 x 1.5	1300	l.m.	6,000.00	7,800,000.00
	Cahill/Wolfe Drainage Catch Basins	65	unit	1,150.00	74,750.00
	Cahill Drain Crossing, Siphon 4.5 x 1.5	100	l.m.	22,500.00	2,250,000.00
	Cahill West Tributary Re-Alignment/Replacement (1200mmØ)	330	l.m.	575.00	189,750.00
	Lennon Drain Replacement, Siphon 3.0 x 1.50	120	l.m.	15,000.00	1,800,000.00
	Turkey Creek Replacement, Siphon 25.0 x 2.0	110	l.m.	125,000.00	13,750,000.00
	Turkey Creek Siphon Inlet Headwall, Grate	1	unit	500,000.00	500,000.00
	Turkey Creek Siphon Outlet Headwall, Grate	1	unit	300,000.00	300,000.00
	Marentette Mangin Drain (1200mmØ)	15	l.m.	575.00	8,625.00
	Basin Drain, Replacement 2.1 x 1.50	60	l.m.	3,000.00	180,000.00
	Titcombe Drain (1200mmØ)	50	l.m.	575.00	28,750.00
	Installation and Demolition (60% of direct cost) 27,442,375		L.S.		16,465,425.00
	Earthworks	35,000	cu.m.	12.00	420,000.00
V	Pumping Station	5	unit	\$ 800,000.00	\$ 4,000,000.00
	Pump No. of Pumping Sta.= 5	5	unit	600,000.00	3,000,000.00
	Pump House	5	unit	200,000.00	1,000,000.00
VI	Roadway Storm Sewer (Conveying 100-Year Storm)	10,890	l.m.	\$ 1,600.22	\$ 17,426,408.00
	Highway 401				
	Storm Sewer (average size = 1050 mm)	10,890	l.m.	460.00	5,009,400.00
	Manholes (average size = 1800 mm)	121	unit	5,180.00	626,780.00
	Catch Basins (twin inlet, standard depth)	363	unit	1,150.00	417,450.00
	Catch Basin Leads	12,705	l.m.	50.00	635,250.00
	Miscellaneous (MH/CB Covers, etc)	121	unit	3,000.00	363,000.00
	Earthworks	22,000	cu.m.	12.00	264,000.00
	Installation (60% of direct cost) 6,688,880				4,013,328.00
	Service Road				
	Storm Sewer (average size = 600 mm)	12,605	l.m.	150.00	1,890,750.00
	Manholes (average size = 1200 mm)	150	unit	2,000.00	300,000.00
	Catch Basins	450	unit	700.00	315,000.00
	Catch Basin Leads	15,750	l.m.	50.00	787,500.00
	Miscellaneous (MH/CB Covers, etc)	150	unit	3,000.00	450,000.00
	Earthworks	9,000	cu.m.	12.00	108,000.00
	Installation (60% of direct cost) 3,293,250.00				2,245,950.00
Estimated Direct and Indirect Cost					\$ 69,604,208.00
Add 20% Contingency					\$ 13,920,841.60
Total Estimated Construction Cost					\$ 83,525,049.60

90% = \$ 76,000,000.00

Practical Alternative 2A

**Practical Alternative 2A - At-grade besides Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Howard Ave.	Km	1.7	\$13,489,722	\$22,932,527
Interchange at Highway 401 / Highway 3 / Howard Avenue	Each	1.0	\$25,000,000	\$25,000,000
6-lane freeway at-grade section - Highways	Km	2.6	\$13,489,722	\$34,938,380
6-lane freeway transition section - Highways	Km	3.6	\$9,567,545	\$34,376,187
6-lane freeway transition section - Structural	L.S.	1.0	\$83,790,000	\$83,790,000
6-lane freeway below grade section - Highways	Km	1.6	\$9,567,545	\$14,829,694
6-lane freeway below grade section - Structural	L.S.	1.0	\$69,750,000	\$69,750,000
6-lane freeway above grade section - Highways	Km	0.6	\$9,583,569	\$5,366,798
Excavation - transition section	m3	153061.8	\$10	\$1,530,618
Excavation - below grade section	m3	72230.0	\$10	\$722,300
Underpass structure at Howard Ave	Each	1.0	\$3,643,000	\$3,643,000
Underpass structure at Sandwich Parkway	Each	1.0	\$2,318,000	\$2,318,000
Underpass structure at Huron Church Line	Each	1.0	\$2,981,000	\$2,981,000
Underpass structure at Cabana Road West	Each	1.0	\$3,097,000	\$3,097,000
Underpass structure at Grand Marais West	Each	1.0	\$3,478,000	\$3,478,000
Underpass structure at Spring Garden Road	Each	1.0	\$1,113,000	\$1,113,000
Interchange at Todd Lane / Cabana Road	Each	1.0	\$25,000,000	\$25,000,000
Municipal road on west side from Lambton Road to Todd Lane	Km	1.3	\$1,700,000	\$2,210,000

**Practical Alternative 2A - At-grade besides Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Bridge at Turkey Creek	Each	1.0	\$3,120,000	\$3,120,000
Partial interchange at E.C. ROW Expressway	Each	1.0	\$22,000,000	\$22,000,000
6-lane freeway transition section from Huron Church Road to Plaza A - Structure (36m wide)	Km	0.8	\$80,000,000	\$60,800,000
Overpass structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Interchange at Malden Road	L.S.	1.0	\$50,000,000	\$50,000,000
Stormwater Management Facility	L.S.	1.0	\$4,075,000	\$4,075,000
Drainage	L.S.	1.0	\$1,856,600	\$1,856,600
Pumping Stations	L.S.	1.0	\$3,200,000	\$3,200,000
Roadway Storm Sewer	L.S.	1.0	\$9,966,880	\$9,966,880
Modify the existing interchange at Huron Church / E.C. ROW Expressway	Each	1.0	\$2,000,000	\$2,000,000
Signalized intersection	Each	15.0	\$200,000	\$3,000,000
Small drain culverts	L.S.	6.0	\$300,000	\$1,800,000
Construction staging	L.S.	1.0	\$5,000,000	\$5,000,000
Utility Relocations	L.S.	1.0	\$15,000,000	\$15,000,000
Subtotal				\$521,754,985
Contingency		20.0%		\$104,350,997
Total Construction Cost \$CAD				\$626,105,982
Engineering (Design, Construction Administration)		10.0%		\$52,175,498
Total Cost \$CAD (2006)				\$678,281,480

**Practical Alternative 2A - At-grade besides Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Cost Escalate \$CAD (2011)		3.0%		\$786,314,135
		1.16		
Rounded Cost \$CAD (2011)				\$790,000,000

* All cost based on 2006 HICO unit prices

**Practical Alternative 2A - At-grade besides Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Howard Ave.	Km	1.7	\$13,489,722	\$22,932,527
Interchange at Highway 401 / Highway 3 / Howard Avenue	Each	1.0	\$25,000,000	\$25,000,000
6-lane freeway at-grade section - Highways	Km	3.0	\$13,489,722	\$40,334,269
6-lane freeway transition section - Highways	Km	2.8	\$9,567,545	\$26,722,152
6-lane freeway transition section - Structural	L.S.	1.0	\$83,790,000	\$83,790,000
6-lane freeway below grade section - Highways	Km	1.6	\$9,567,545	\$14,829,694
6-lane freeway below grade section - Structural	L.S.	1.0	\$69,750,000	\$69,750,000
6-lane freeway above grade section - Highways	Km	0.5	\$9,583,569	\$4,791,784
Excavation - transition section	m3	118981.8	\$10	\$1,189,818
Excavation - below grade section	m3	72230.0	\$10	\$722,300
Underpass structure at Howard Ave	Each	1.0	\$3,643,000	\$3,643,000
Underpass structure at Sandwich Parkway	Each	1.0	\$2,318,000	\$2,318,000
Underpass structure at Huron Church Line	Each	1.0	\$2,981,000	\$2,981,000
Underpass structure at Cabana Road West	Each	1.0	\$3,097,000	\$3,097,000
Underpass structure at Grand Marais West	Each	1.0	\$3,478,000	\$3,478,000
Underpass structure at Spring Garden Road	Each	1.0	\$1,113,000	\$1,113,000
Interchange at Todd Lane / Cabana Road	Each	1.0	\$25,000,000	\$25,000,000
Signalized intersection	Each	15.0	\$200,000	\$3,000,000
Municipal road on west side from Lambton Road	Km	1.3	\$1,700,000	\$2,210,000

**Practical Alternative 2A - At-grade besides Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

to Todd Lane				
Bridge at Turkey Creek	Each	1.0	\$3,120,000	\$3,120,000
Partial interchange at E.C. ROW Expressway	Each	1.0	\$22,000,000	\$22,000,000
Overpass structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Stormwater Management Facility	L.S.	1.0	\$4,075,000	\$4,075,000
Drainage	L.S.	1.0	\$1,856,600	\$1,856,600
Pumping Stations	L.S.	1.0	\$3,200,000	\$3,200,000
Roadway Storm Sewer	L.S.	1.0	\$9,966,880	\$9,966,880
Modify the existing interchange at Huron Church / E.C. ROW Expressway	Each	1.0	\$2,000,000	\$2,000,000
Small drain culverts	L.S.	6.0	\$300,000	\$1,800,000
Construction staging	L.S.	1.0	\$5,000,000	\$5,000,000
Utility Relocations	L.S.	1.0	\$15,000,000	\$15,000,000
Subtotal				\$407,781,024
Contingency		20.0%		\$81,556,205
Total Construction Cost \$CAD				\$489,337,229
Engineering (Design, Construction Administration)		10.0%		\$40,778,102
Total Cost \$CAD (2006)				\$530,115,331
Cost Escalate \$CAD (2011)		3.0% 1.16		\$614,548,960
Rounded Cost \$CAD (2011)				\$620,000,000

* All cost based on 2006 HICO unit prices

URS Canada Inc.

Alignment Alternative "2A" Practical - At Grade Freeway Parallel to Talbot / Huron Church Road

Structure I.D.	Structure Name	Structure Type	Length (M)	Width (M)	Cost (\$)
2A - 10	Highway 3 WB Underpass	Three Spans Bridge	42+26+23	12.55	\$2,398,000
2A - 11	Highway 401 Ramp W-E Underpass	Single Span Bridge	36	12.05	\$911,000
2A - 12	Highway 401 Ramp E-N/S Overpass	Single Span Bridge	39	12.05	\$987,000
2A - 13	Ramp E-W at West of Howard Avenue	Boat Section	510	Length	\$15,300,000
2A - 20	Approach Ramp of Highway 401 at East of Howard Avenue	Boat Section	500	Length	\$15,000,000
2A - 21	Below Grade Hwy 401 at East of Howard Avenue	Boat Section	90	Length	\$4,050,000
2A - 22	Howard Avenue Underpass	Two Spans Bridge	30+30	27.6	\$3,643,000
2A - 23	Below Grade Hwy 401 at West of Howard Avenue	Boat Section	70	Length	\$3,150,000
2A - 24	Approach Ramp of Highway 401 at West of Howard Avenue	Boat Section	300	Length	\$9,000,000
2A - 30	Approach Ramp of Highway 401 at East of Cousineau Road	Boat Section	350	Length	\$10,500,000
2A - 31	Below Grade Hwy 401 at East of Cousineau Road	Boat Section	65	Length	\$2,925,000
2A - 32	Sandwich Parkway Underpass	Two Spans Bridge	20+20	27.6	\$2,318,000
2A - 34	Below Grade Hwy 401 at West of Cousineau Road	Boat Section	65	Length	\$2,925,000
2A - 35	Approach Ramp of Highway 401 at West of Cousineau Road	Boat Section	270	Length	\$8,100,000
2A - 40	Approach Ramp of Highway 401 at East of Cousineau Road	Boat Section	450	Length	\$13,500,000
2A - 41	Below Grade Hwy 401 at West of Cabana Road West	Boat Section	50	Length	\$2,250,000
2A - 42	Cabana Road West Underpass	Two Spans Bridge	26+25	27.6	\$3,097,000
2A - 43	Below Grade Hwy 401 at East of Cabana Road West	Boat Section	350	Length	\$15,750,000
2A - 44	Below Grade Hwy 401 at West of Huron Church Line	Boat Section	75	Length	\$3,375,000
2A - 45	Below Grade Wider Hwy 401 at East of Huron Church Line	Boat Section	100	Length	\$4,500,000
2A - 46	Approach Ramp of Highway 401 at West of Cabana Road West	Boat Section	375	Length	\$11,250,000
2A - 47	Ramp N-E/W at East of Cabana Road West	Boat Section	340	Length	\$10,200,000
2A - 48	Ramp E/W-S at East of Cabana Road West	Boat Section	340	Length	\$10,200,000
2A - 49	Huron Church Line Underpass	Two Spans Bridge	27+27	24	\$2,981,000
2A - 50	Turkey Creek Bridge	Single Span Bridge	26	60	\$3,120,000
2A - 51	Grand Marais Road West Underpass	Two Spans Bridge	30+30	27.6	\$3,478,000
2A - 60	Approach Ramp of Highway 401 at Grand Marais Road West side	Boat Section	273	Length	\$8,190,000
2A - 61	Below Grade Hwy 401 at just West of Grand Marais Road West	Boat Section	125	Length	\$5,625,000
2A - 62	Huron Church Ramp N-S Underpass	Two Spans Bridge	32+38	12.05	\$1,856,000
2A - 63	Spring Garden Road Underpass	Two Spans Bridge	22+22	12.05	\$1,113,000
2A - 64	Below Grade Hwy 401 with S.C.L.Ramp at South of Huron Church Road	Boat Section	100	Length	\$4,500,000
2A - 65	Below Grade Hwy 401 at South of Huron Church Road	Boat Section	125	Length	\$5,625,000

URS Canada Inc.

Alignment Alternative "2A" Practical - At Grade Freeway Parallel to Talbot / Huron Church Road

Structure I.D.	Structure Name	Structure Type	Length (M)	Width (M)	Cost (\$)
2A - 66	Below Grade Hwy 401 with Ramp S-N at South of Huron Church Road	Boat Section	100	Length	\$4,500,000
2A - 67	Below Grade Hwy 401 at just South of Ramp N-S	Boat Section	125	Length	\$5,625,000
2A - 68	Below Grade Hwy 401 at North of Ramp N-S	Boat Section	110	Length	\$4,950,000
2A - 69	Approach Ramp S-N to Hwy 401 at South of Huron Church Road	Boat Section	250	Length	\$7,500,000
2A - 70	Approach Ramp N-S to Hwy 401 at South of Huron Church Road	Boat Section	250	Length	\$7,500,000
2A - 71	Approach Ramp of Highway 401 at near EC ROW Expressway	Boat Section	275	Length	\$8,250,000
2A - 90	Malden Road Overpass	Single Span Bridge	35	40.85	\$2,860,000
2A - 91	Ramp W-E Underpass	Two Spans Bridge	45+45	9.3	\$1,758,000
2A - 92	Matchette Road Overpass	Single Span Bridge	40	40.85	\$3,268,000
2A - 93	Ojibway / ETR Overpass	Three Spans Bridge	34+34+45	37.85	\$10,693,000
2A - 94	Ramp E-W at Ojibway Parkway Overpass	Single Span Bridge	44	12.05	\$1,060,000
2A - 95	Ramp E-W at ETR Overpass	Single Span Bridge	30	12.05	\$904,000
2A - 110	Cahill Drain Culvert	Culvert	1	Nos.	\$300,000
2A - 120	Secondary Drain Culvert	Culvert	1	Nos.	\$300,000
2A - 130	Lennon Drain Culvert	Culvert	1	Nos.	\$300,000
2A - 140	Marentette Mangin Drain Culvert	Culvert	1	Nos.	\$300,000
2A - 150	Basin Drain Culvert	Culvert	1	Nos.	\$300,000
2A - 160	Titcombe Drain Culvert	Culvert	1	Nos.	\$300,000
	TOTAL COST				<u>\$252,485,000</u>
<p>Note: Above Costs include only Structural Costs. These costs do not include Roadwork, Earthwork, Road & Traffic Diversions, Roadway Protection etc; which are included in the Highway Costs.</p>					

Detroit River International Crossing
STORMWATER MANAGEMENT STUDY
 Highway 3 / Huron Church Road Corridor
ALTERNATIVE 2A - At Grade
CONSTRUCTION COST ESTIMATE

PRELIMINARY
 COST TO BE CONFIRMED

Item	Description	Quantity	Unit	Unit Cost	Total
I	Stormwater Management Facility	37,100	cu.m.	\$ 109.84	\$ 4,075,000.00
	Inlet/ Outlet Control Structure	8	L.S.	125,000.00	1,000,000.00
	Landscaping	8	L.S.	200,000.00	1,600,000.00
	Earthworks	147,500	cu.m.	10.00	1,475,000.00
III	Oil Grit Separator	-	unit		
IV	Drainage	565	l.m.	\$ 3,286.02	\$ 1,856,600.00
	Cahill Drain Crossing Extension 4.5 x 1.5	80	l.m.	6,000.00	480,000.00
	Cahill West Tributary Re-Alignment/Replacement (1200mmØ)	340	l.m.	575.00	195,500.00
	Lenon Drain, Extension 3.0 x 1.50	70	l.m.	3,500.00	245,000.00
	Marentette Mangin Drain (1200mmØ)	15	l.m.	575.00	8,625.00
	Basin Drain, Replacement 2.1 x 1.50	60	l.m.	3,000.00	180,000.00
	Titcombe Drain (1200mmØ)	50		575.00	28,750.00
	Installation and Demolition (60% of direct cost) 1,137,875		L.S.		682,725.00
	Earthworks	3,000	cu.m.	12.00	36,000.00
V	Pumping Station	4	unit	\$ 800,000.00	\$ 3,200,000.00
	Pump No. of Pumping Sta = 4	4	unit	600,000.00	2,400,000.00
	Pump House	4	unit	200,000.00	800,000.00
VI	Roadway Storm Sewer (Conveying 5-Year Storm)	10,890	l.m.	\$ 915.23	\$ 9,966,880.00
	Highway 401				
	Storm Sewer (average size = 750 mm)	10,890	l.m.	400.00	4,356,000.00
	Manholes (average size = 1500 mm)	121	unit	4,450.00	538,450.00
	Catch Basins (standard depth)	363	unit	700.00	254,100.00
	Catch Basin Leads	12,705	l.m.	50.00	635,250.00
	Miscellaneous (MH/CB Covers, etc)	121	unit	3,000.00	363,000.00
	Earthworks	11,000	cu.m.	12.00	132,000.00
	Installation (60% of direct cost) 5,783,800.00				3,688,080.00
					-
	Add 20% Contingency				\$ 3,819,696.00
	Total Estimated Construction Cost				\$ 22,918,176.00

90% = \$ 21,000,000.00

Practical Alternative 2B

**Practical Alternative 2B - Below grade besides Talbot Road / Huron Church Road -
NORTH TALBOT ROAD TO PLAZA A**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Howard Ave.	Km	1.7	\$13,489,722	\$22,932,527
Interchange at Highway 401 / Highway 3 / Howard Avenue	Each	1.0	\$40,000,000	\$40,000,000
6-lane freeway transition section - Highways	Km	1.6	\$9,567,545	\$15,528,125
6-lane freeway transition section - Structural	L.S.	1.0	\$31,690,000	\$31,690,000
6-lane freeway below grade section - Highways	Km	5.8	\$9,567,545	\$55,491,758
6-lane freeway below grade section - Structural	L.S.	1.0	\$290,500,000	\$290,500,000
6-lane freeway above grade section - Highways	Km	0.6	\$9,583,569	\$5,366,798
Excavation - transition section	m3	69139.8	\$10	\$691,398
Excavation - below grade section	m3	270280.0	\$10	\$2,702,800
Underpass structure at Howard Ave	Each	1.0	\$3,218,000	\$3,218,000
Underpass structure at Montgomery Road	Each	1.0	\$1,596,000	\$1,596,000
Underpass structure at Cousineau Road	Each	1.0	\$2,318,000	\$2,318,000
Underpass structure at Huron Church Line	Each	1.0	\$3,229,000	\$3,229,000
Underpass structure at Cabana Road West	Each	1.0	\$3,036,000	\$3,036,000
Interchange at Todd Lane / Cabana Road	Each	1.0	\$40,000,000	\$40,000,000
Tunnel under Turkey Creek	Each	1.0	\$26,500,000	\$26,500,000
Turkey Creek Bridge	Each	1.0	\$8,007,000	\$8,007,000
Underpass structure at Lambton Road	Each	1.0	\$3,643,000	\$3,643,000
Underpass structure at Spring Garden Road	Each	1.0	\$1,672,000	\$1,672,000

**Practical Alternative 2B - Below grade besides Talbot Road / Huron Church Road -
NORTH TALBOT ROAD TO PLAZA A**

Partial interchange at E.C. ROW Expressway	Each	1.0	\$40,000,000	\$40,000,000
6-lane freeway transition section from Huron Church Road to Plaza A - Structure (36m wide)	Km	0.8	\$80,000,000	\$60,800,000
Overpass structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Interchange at Malden Road	L.S.	1.0	\$50,000,000	\$50,000,000
Modify the existing interchange at Huron Church / E.C. ROW Expressway	Each	1.0	\$2,000,000	\$2,000,000
Stormwater Management Facility	L.S.	1.0	\$3,737,500	\$3,737,500
Drainage	L.S.	1.0	\$36,782,600	\$36,782,600
Pumping Stations	L.S.	1.0	\$4,000,000	\$4,000,000
Roadway Storm Sewer	L.S.	1.0	\$11,329,208	\$11,329,208
Signalized intersection	Each	15.0	\$200,000	\$3,000,000
Small drain culverts	L.S.	6.0	\$300,000	\$1,800,000
Construction staging	L.S.	1.0	\$5,000,000	\$5,000,000
Utility Relocations	L.S.	1.0	\$15,000,000	\$15,000,000
Subtotal				\$794,431,715
Contingency		20.0%		\$158,886,343
Total Construction Cost \$CAD				\$953,318,057
Engineering (Design, Construction Administration)		10.0%		\$79,443,171
Total Cost \$CAD (2006)				\$1,032,761,229

**Practical Alternative 2B - Below grade besides Talbot Road / Huron Church Road -
NORTH TALBOT ROAD TO PLAZA A**

Cost Escalate \$CAD (2011)		3.0%		\$1,197,253,318
		1.16		
Rounded Cost \$CAD (2011)				\$1,200,000,000

* All cost based on 2006 HICO unit prices

**Practical Alternative 2B - Below grade besides Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Howard Ave.	Km	1.7	\$13,489,722	\$22,932,527
Interchange at Highway 401 / Highway 3 / Howard Avenue	Each	1.0	\$40,000,000	\$40,000,000
6-lane freeway at-grade section - Highways	Km	0.4	\$13,489,722	\$5,395,889
6-lane freeway transition section - Highways	Km	0.8	\$9,567,545	\$7,874,089
6-lane freeway transition section - Structural	L.S.	1.0	\$31,690,000	\$31,690,000
6-lane freeway below grade section - Highways	Km	5.8	\$9,567,545	\$55,491,758
6-lane freeway below grade section - Structural	L.S.	1.0	\$290,500,000	\$290,500,000
6-lane freeway above grade section - Highways	Km	0.5	\$9,583,569	\$4,791,784
Excavation - transition section	m3	35059.8	\$10	\$350,598
Excavation - below grade section	m3	270280.0	\$10	\$2,702,800
Underpass structure at Howard Ave	Each	1.0	\$3,218,000	\$3,218,000
Underpass structure at Montgomery Road	Each	1.0	\$1,596,000	\$1,596,000
Underpass structure at Cousineau Road	Each	1.0	\$2,318,000	\$2,318,000
Underpass structure at Huron Church Line	Each	1.0	\$3,229,000	\$3,229,000
Underpass structure at Cabana Road West	Each	1.0	\$3,036,000	\$3,036,000
Interchange at Todd Lane / Cabana Road	Each	1.0	\$40,000,000	\$40,000,000
Tunnel under Turkey Creek	Each	1.0	\$26,500,000	\$26,500,000
Turkey Creek Bridge	Each	1.0	\$8,007,000	\$8,007,000
Underpass structure at Lambton Road	Each	1.0	\$3,643,000	\$3,643,000

**Practical Alternative 2B - Below grade besides Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

Underpass structure at Spring Garden Road	Each	1.0	\$1,672,000	\$1,672,000
Partial interchange at E.C. ROW Expressway	Each	1.0	\$40,000,000	\$40,000,000
Modify the existing interchange at Huron Church / E.C. ROW Expressway	Each	1.0	\$2,000,000	\$2,000,000
Overpass structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Stormwater Management Facility	L.S.	1.0	\$3,737,500	\$3,737,500
Drainage	L.S.	1.0	\$36,782,600	\$36,782,600
Pumping Stations	L.S.	1.0	\$4,000,000	\$4,000,000
Roadway Storm Sewer	L.S.	1.0	\$11,329,208	\$11,329,208
Small drain culverts	L.S.	6.0	\$300,000	\$1,800,000
Signalized intersection	Each	15.0	\$200,000	\$3,000,000
Construction staging	L.S.	1.0	\$5,000,000	\$5,000,000
Utility Relocations	L.S.	1.0	\$15,000,000	\$15,000,000
Subtotal				\$680,457,754
Contingency		20.0%		\$136,091,551
Total Construction Cost \$CAD				\$816,549,304
Engineering (Design, Construction Administration)		10.0%		\$68,045,775
Total Cost \$CAD (2006)				\$884,595,080
Cost Escalate \$CAD (2011)		3.0% 1.16		\$1,025,488,142
Rounded Cost \$CAD (2011)				\$1,030,000,000

* All cost based on 2006 HICO unit prices

URS Canada Inc.

Alignment Alternative "2B" Practical - Below Grade Freeway Parallel to Talbot / Huron Church Road

Structure I.D.	Structure Name	Structure Type	Length (M)	Width (M)	Cost (\$)
2B - 10	Highway 3 WB Underpass	Three Spans Bridge	42+26+23	12.55	\$2,398,000
2B - 11	Ramp W-E Underpass	Single Span Bridge	36	12.05	\$911,000
2B - 12	Highway 401Ramp E-N/S Overpass	Single Span Bridge	39	12.05	\$987,000
2B - 13	Approach Ramp E-W of Hwy 401 at East of Howard Avenue	Boat Section	550	Length	\$16,500,000
2B - 14	Approach Ramp of Highway 401 at East of Howard Avenue	Boat Section	500	Length	\$15,000,000
2B - 20	Approach Ramp of Highway 401 at Howard Avenue	Boat Section	123	Length	\$3,690,000
2B - 22	Howard Avenue Underpass	Two Spans Bridge	23+30	27.6	\$3,218,000
2B - 23	Montgomery Road Underpass	Two Spans Bridge	21+21	18.1	\$1,596,000
2B - 24	Ramp W-N/S on West of Howard Avenue	Boat Section	400	Length	\$12,000,000
2B - 32	Cousineau Road / Sandwich Parkway Underpass	Two Spans Bridge	20+20	27.6	\$2,318,000
2B - 33	Huron Church Line Underpass	Two Spans Bridge	27+27	26	\$3,229,000
2B - 34	Ramps E/W-S and S-E/W	Boat Section	800	Length	\$24,000,000
2B - 42	Cabana Road West Underpass	Two Spans Bridge	25+25	27.6	\$3,036,000
2B - 43	Ramps N-E/W and E/W-N	Boat Section	400	Length	\$12,000,000
2B - 51	Grand Marais Road West / Lambton Underpass	Two Spans Bridge	30+30	27.6	\$3,643,000
2B - 52	Highway 401 Ramps N-S & S-N	Deeper Boat Section	500	Length	\$32,500,000
2B - 55	Turkey Creek Bridge (incl.staged const.,temp.bridge etc)	Single Span Bridge	28	40.85	\$8,007,000
2B - 62	Huron Church Line Ramp N-S Underpass	Two Spans Bridge	30+40	12.05	\$1,856,000
2B - 63	Spring Garden Underpass	Two Spans Bridge	22+22	18.1	\$1,672,000
2B - 64	Approach Ramp of Highway 401 near Spring Garden Road	Deepr Boat Section	200	Length	\$13,000,000
2B - 90	Malden Road Overpass	Single Span Bridge	35	40.85	\$2,860,000
2B - 91	Ramp W-E Underpass	Two Spans Bridge	45+45	9.3	\$1,758,000
2B - 92	Matchette Road Overpass	Single Span Bridge	40	40.85	\$3,268,000
2B - 93	Ojibway / ETR Overpass	Three Spans Bridge	34+34+45	37.85	\$10,693,000
2B - 94	Ramp E-W at Ojibway Parkway Overpass	Single Span Bridge	44	12.05	\$1,060,000
2B - 95	Ramp E-W at ETR Overpass	Single Span Bridge	30	12.05	\$904,000
2B - 201	Below Grade Hwy 401 bet.Howard Avenue & Montgomery Dr.	Boat Section	200	Length	\$9,000,000
2B - 202	Below Grade Hwy 401 with S.C.L.bet.Howard Avenue & Montgomery Dr.	Boat Section	250	Length	\$11,250,000
2B - 203	Below Grade Hwy 401 at East of Montgomery Drive	Boat Section	325	Length	\$14,625,000
2B - 204	Below Grade Hwy 401 bet.Montgomery Dr.& Cousineau Road	Boat Section	800	Length	\$36,000,000
2B - 211	Below Grade Hwy 401 bet.Cousineau Road & Huron Church Line	Boat Section	1500	Length	\$67,500,000
2B - 212	Below Grade Hwy 401 with Ramps at East of Huron Church Line	Boat Section	150	Length	\$6,750,000
2B - 213	Below Grade Hwy 401 with Ramps at West of Huron Church Line	Boat Section	50	Length	\$2,250,000
2B - 214	Below Grade Hwy 401 bet.Huron Church Line & Cabana Road West/Todd Lane	Boat Section	400	Length	\$18,000,000
2B - 221	Below Grade Hwy 401 at West of Cabana Road West / Todd Lane	Deepr Boat Section	100	Length	\$6,500,000

URS Canada Inc.

Alignment Alternative "2B" Practical - Below Grade Freeway Parallel to Talbot / Huron Church Road

Structure I.D.	Structure Name	Structure Type	Length (M)	Width (M)	Cost (\$)
2B - 222	Below Grade Hwy 401 with Ramps bet.Cabana Rd.West & Pulford St.	Boat Section	300	Length	\$19,500,000
2B - 223	Below Grade Hwy 401 at East of Grand Marais Road West	Boat Section	800	Length	\$52,000,000
2B - 224	Highway 401 in Tunnel under Turkey Creek	Cut & Cover Tunnel	100	Length	\$26,500,000
2B - 231	Below Grade Hwy 401 at West of Grand Marais Road West	Boat Section	150	Length	\$9,750,000
2B - 232	Below Grade Hwy 401 with Ramp N-S at West of Grand Marais Road West	Boat Section	150	Length	\$9,750,000
2B - 233	Below Grade Hwy 401 at West of Grand Marais Road West	Boat Section	150	Length	\$9,750,000
2B - 234	Below Grade Hwy 401 with Ramp S-N at West of Grand Marais Rd.West	Boat Section	100	Length	\$6,500,000
2B - 235	Below Grade Hwy 401 at South of Huron Church Road	Boat Section	175	Length	\$11,375,000
2B - 236	Approach Ramp of Hwy 401 at South of Huron Church Road	Boat Section	200	Length	\$9,000,000
2B - 110	Cahill Drain Culvert	Culvert	1	Nos.	\$300,000
2B - 120	Secondary Drain Culvert	Culvert	1	Nos.	\$300,000
2B - 130	Lennon Drain Culvert	Culvert	1	Nos.	\$300,000
2B - 140	Marentette Mangin Drain Culvert	Culvert	1	Nos.	\$300,000
2B - 150	Basin Drain Culvert	Culvert	1	Nos.	\$300,000
2B - 160	Titcombe Drain Culvert	Culvert	1	Nos.	\$300,000
	TOTAL COST				\$509,904,000
<p>Note: Above Costs include only Structural Costs. These costs do not include Roadwork, Earthwork, Road & Traffic Diversions, Roadway Protection etc; which are included in the Highway Costs.</p>					

Detroit River International Crossing
STORMWATER MANAGEMENT STUDY
 Highway 3 / Huron Church Road Corridor
ALTERNATIVE 2B - Below Grade
CONSTRUCTION COST ESTIMATE

PRELIMINARY
 COST TO BE CONFIRMED

Item	Description	Quantity	Unit	Unit Cost	Total
I	Stormwater Management Facility	39,300	cu.m.	\$ 95.10	\$ 3,737,500.00
	Inlet/ Outlet Control Structure	7	L.S.	125,000.00	875,000.00
	Landscaping	7	L.S.	200,000.00	1,400,000.00
	Earthworks	146,250	cu.m.	10.00	1,462,500.00
III	Oil Grit Separator	-	unit		
IV	Drainage	597	l.m.	\$ 61,612.40	\$ 36,782,600.00
	Cahill Drain Crossing, Siphon 4.5 x 1.5	140	l.m.	22,500.00	3,150,000.00
	Cahill West Tributary Replacement (1200mmØ)	90	l.m.	575.00	51,750.00
	Lennon Drain Replacement, Siphon 3.0 x 1.50	160	l.m.	15,000.00	2,400,000.00
	Turkey Creek Replacement, Siphon 25.0 x 2.0	130	l.m.	125,000.00	16,250,000.00
	Turkey Creek Siphon Inlet Headwall, Grate	1	unit	500,000.00	500,000.00
	Turkey Creek Siphon Outlet Headwall, Grate	1	unit	300,000.00	300,000.00
	Marentette Mangin Drain (1200mmØ)	15	l.m.	575.00	8,625.00
	Basin Drain, Replacement 2.1 x 1.50	60	l.m.	3,000.00	180,000.00
	Titcombe Drain (1200mmØ)	50	l.m.	575.00	28,750.00
	Installation and Demolition (60% of direct cost) 22,869,125		L.S.		13,721,475.00
	Earthworks	16,000	cu.m.	12.00	192,000.00
V	Pumping Station	4	unit	\$ 1,000,000.00	\$ 4,000,000.00
	Pump No. of Pumping Sta.= 5	5	unit	600,000.00	3,000,000.00
	Pump House	5	unit	200,000.00	1,000,000.00
VI	Roadway Storm Sewer (Conveying 100-Year Storm)	10,890	l.m.	\$ 1,040.33	\$ 11,329,208.00
	Highway 401				
	Storm Sewer (average size = 1050 mm)	10,890	l.m.	460.00	5,009,400.00
	Manholes (average size = 1800 mm)	121	unit	5,180.00	626,780.00
	Catch Basins (twin inlet, standard depth)	363	unit	1,150.00	417,450.00
	Catch Basin Leads	12,705	l.m.	50.00	635,250.00
	Miscellaneous (MH/CB Covers, etc)	121	unit	3,000.00	363,000.00
	Earthworks	22,000	cu.m.	12.00	264,000.00
	Installation (60% of direct cost) 6,688,880				4,013,328.00
Estimated Direct and Indirect Cost					\$ 55,849,308.00
Add 20% Contingency					\$ 11,169,861.60
Total Estimated Construction Cost					\$ 67,019,169.60

90% = \$ 61,000,000.00

Practical Alternative 3

**Practical Alternative 3 - Cut and Cover Tunnel on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Howard Ave.	Km	1.7	\$13,489,722	\$22,932,527
Interchange at Highway 401 / Highway 3 / Howard Avenue	Each	1.0	\$30,000,000	\$30,000,000
6-lane freeway transition section - Highways	Km	2.0	\$9,567,545	\$18,656,712
6-lane freeway transition section - Structural	L.S.	1.0	\$51,750,000	\$51,750,000
6-lane freeway above grade section - Highways	Km	0.6	\$9,583,569	\$5,366,798
6-lane freeway tunnel section - Howard Ave. to E.C. ROW Expressway	Km	5.8	\$304,322,277	\$1,757,461,148
Ventilation Buildings	Each	2.0	\$75,000,000	\$150,000,000
Control Centre	L.S.	1.0	\$4,545,455	\$4,545,455
Tunnel below Turkey Creek	Each	1.0	\$95,400,000	\$95,400,000
Turkey Creek Bridge	Each	1.0	\$8,007,000	\$8,007,000
Construction staging	L.S.	1.0	\$30,000,000	\$30,000,000
Interchange at St. Clair College	Each	1.0	\$95,000,000	\$95,000,000
Interchange at Lambton Road	Each	1.0	\$75,000,000	\$75,000,000
Municipal road from Howard Ave to E.C. ROW Expressway	Km	5.6	\$2,468,557	\$13,823,917
6-lane freeway transition section from Huron Church Road to Plaza A - Structure (36m wide)	Km	0.8	\$80,000,000	\$60,800,000
Overpass structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000

**Practical Alternative 3 - Cut and Cover Tunnel on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO PLAZA A**

Interchange at Malden Road	L.S.	1.0	\$50,000,000	\$50,000,000
Stormwater Management Facility	L.S.	1.0	\$1,387,500	\$1,387,500
Oil Grit Separator	L.S.	1.0	\$160,000	\$160,000
Drainage	L.S.	1.0	\$336,400	\$336,400
Pumping Station	L.S.	1.0	\$4,000,000	\$4,000,000
Roadway Storm Sewer	L.S.	1.0	\$2,787,040	\$2,787,040
Signalized intersection	Each	10.0	\$200,000	\$2,000,000
Utility Relocations	L.S.	1.0	\$25,000,000	\$25,000,000
Subtotal				\$2,507,274,497
Contingency		20.0%		\$501,454,899
Total Construction Cost \$CAD				\$3,008,729,396
Engineering (Design, Construction Administration)		10.0%		\$250,727,450
Total Cost \$CAD (2006)				\$3,259,456,846
Cost Escalate \$CAD (2011)		3.0%		\$3,778,603,818
		1.16		
Rounded Cost \$CAD (2011)				\$3,780,000,000

* All cost based on 2006 HICO unit prices

**Practical Alternative 3 - Cut and Cover Tunnel on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Howard Ave.	Km	1.7	\$13,489,722	\$22,932,527
Interchange at Highway 401 / Highway 3 / Howard Avenue	Each	1.0	\$30,000,000	\$30,000,000
6-lane freeway at-grade section - Highways	Km	0.4	\$13,489,722	\$5,395,889
6-lane freeway transition section - Highways	Km	1.2	\$9,567,545	\$11,002,676
6-lane freeway transition section - Structural	L.S.	1.0	\$51,750,000	\$51,750,000
6-lane freeway above grade section - Highways	Km	0.5	\$9,583,569	\$4,791,784
6-lane freeway tunnel section - Howard Ave. to E.C. ROW Expressway	Km	5.8	\$304,322,277	\$1,757,461,148
Ventilation Buildings	Each	2.0	\$75,000,000	\$150,000,000
Control Centre	L.S.	1.0	\$4,545,455	\$4,545,455
Tunnel below Turkey Creek	Each	1.0	\$95,400,000	\$95,400,000
Turkey Creek Bridge	Each	1.0	\$8,007,000	\$8,007,000
Construction staging	L.S.	1.0	\$30,000,000	\$30,000,000
Interchange at St. Clair College	Each	1.0	\$95,000,000	\$95,000,000
Interchange at Lambton Road	Each	1.0	\$75,000,000	\$75,000,000
Municipal road from Howard Ave to E.C. ROW Expressway	Km	5.6	\$2,468,557	\$13,823,917
Overpass structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Stormwater Management Facility	L.S.	1.0	\$1,387,500	\$1,387,500

**Practical Alternative 3 - Cut and Cover Tunnel on Talbot Road / Huron Church Road
NORTH TALBOT ROAD TO MALDEN ROAD**

Oil Grit Separator	L.S.	1.0	\$160,000	\$160,000
Drainage	L.S.	1.0	\$336,400	\$336,400
Pumping Station	L.S.	1.0	\$4,000,000	\$4,000,000
Roadway Storm Sewer	L.S.	1.0	\$2,787,040	\$2,787,040
Signalized intersection	Each	10.0	\$200,000	\$2,000,000
Utility Relocations	L.S.	1.0	\$25,000,000	\$25,000,000
Subtotal				\$2,393,641,336
Contingency		20.0%		\$478,728,267
Total Construction Cost \$CAD				\$2,872,369,603
Engineering (Design, Construction Administration)		10.0%		\$239,364,134
Total Cost \$CAD (2006)				\$3,111,733,737
Cost Escalate \$CAD (2011)		3.0% 1.16		\$3,607,352,247
Rounded Cost \$CAD (2011)				\$3,610,000,000

* All cost based on 2006 HICO unit prices

URS Canada Inc.

Alignment Alternative "3" Practical - Wider Tunnel Option (incorporating RWDI Comments), Highway 401 Along Talbot / Huron Church Road with Service Roads on Both Sides

Structure I.D.	Structure Name	Structure Type	Length (M)	Width (M)	Cost (\$)
3 - 10	Highway 3 WB Underpass	Three Spans Bridge	42+26+23	12.55	\$2,398,000
3 - 11	Ramp W-E Underpass	Single Span Bridge	36	12.05	\$911,000
3 - 12	Highway 401 Ramp E-N/S Overpass	Single Span Bridge	39	12.05	\$987,000
3 - 13	Ramp E-W at East of Howard Avenue	Deeper Boat Section	425	Length	\$19,125,000
3 - 20	Approach Ramp of Highway 401 at East of Howard Avenue	Deeper Boat Section	750	Length	\$33,750,000
3 - 25	Ramp E-W Tunnel (Narrow)	Cut and Cover Tunnel	75	Length	\$6,750,000
3 - 30	Ramps E-W and W-E	Deeper Boat Section	500	Length	\$22,500,000
3 - 35	Ramp E-W and W-E Tunnels (Narrow)	Cut and Cover Tunnels	225	Length	\$16,875,000
3 - 40	Approach Ramps E-W and W-E	Deeper Boat Section	500	Length	\$22,500,000
3 - 45	Ramp E-W and W-E Tunnels (Narrow)	Cut and Cover Tunnels	275	Length	\$20,625,000
3 - 55	Turkey Creek Bridge for Service Roads (incl.staged const.,temp.bridge etc)	Single Span Bridge	28	40.85	\$8,007,000
3 - 60	Approach Ramps S-N & N-S	Deeper Boat Section	425	Length	\$27,625,000
3 - 65	Ramp S-N & N-S Tunnels (Narrow)	Deeper Cut and Cover T	350	Length	\$47,250,000
3 - 70	Approach Ramp of Highway 401 near EC ROW Parkway	Deeper Boat Section	400	Length	\$18,000,000
3 - 90	Malden Road Overpass	Single Span Bridge	35	40.85	\$2,860,000
3 - 91	Ramp W-E Underpass	Two Spans Bridge	45+45	9.3	\$1,758,000
3 - 92	Matchette Road Overpass	Single Span Bridge	40	40.85	\$3,268,000
3 - 93	Ojibway / ETR Overpass	Three Spans Bridge	34+34+45	37.85	\$10,693,000
3 - 94	Ramp E-W at Ojibway Parkway Overpass	Single Span Bridge	44	12.05	\$1,060,000
3 - 95	Ramp E-W at ETR Overpass	Single Span Bridge	30	12.05	\$904,000
3 - 301	Highway 401 Tunnel from East to West of Howard Avenue	Cut and Cover Tunnel	175	Length	\$43,050,000
3 - 302	Highway 401 Tunnel between Howard Avenue & Cousineau Road	Cut and Cover Tunnel	1175	Length	\$252,625,000
3 - 303	Highway 401 Tunnel at East of Cousineau Road	Cut and Cover Tunnel	175	Length	\$43,050,000
3 - 311	Highway 401 Tunnel at West of Cousineau Road	Cut and Cover Tunnel	1450	Length	\$311,750,000
3 - 312	Highway 401 Tunnel at West of Huron Church Line	Cut and Cover Tunnel	200	Length	\$49,200,000
3 - 313	Highway 401 Tunnel at East of Cabana Road West/Todd Lane	Cut and Cover Tunnel	500	Length	\$107,500,000
3 - 321	Highway 401 Tunnel at West of Cabana Road West/Todd Lane	Cut and Cover Tunnel	950	Length	\$204,250,000
3 - 322	Highway 401 Tunnel below Turkey Creek	Deeper Tunnel	300	Length	\$95,400,000
3 - 323	Highway 401 Tunnel at East of Grand Marais Road West	Cut and Cover Tunnel	150	Length	\$36,900,000
3 - 331	Highway 401 Tunnel at West of Grand Marais Road West	Cut and Cover Tunnel	1000	Length	\$215,000,000
TOTAL COST					\$1,628,071,000
Tunnel Cost					\$1,358,725,000
Note: Above Costs include only Structural Costs. These costs do not include Roadwork, Earthwork, Road & Traffic Diversions, Roadway Protection etc; which are included in the Highway Costs.					

Detroit River International Crossing
STORMWATER MANAGEMENT STUDY
 Highway 3 / Huron Church Road Corridor
ALTERNATIVE 3 - Tunnel
CONSTRUCTION COST ESTIMATE

PRELIMINARY
 COST TO BE CONFIRMED

Item	Description	Quantity	Unit	Unit Cost	Total
I	Stormwater Management Facility	18,500	cu.m.	\$ 75.00	\$ 1,387,500.00
	Inlet/ Outlet Control Structure	2	L.S.	125,000.00	250,000.00
	Landscaping	2	L.S.	200,000.00	400,000.00
	Earthworks	73,750	cu.m.	10.00	737,500.00
III	Oil Grit Separator	2	unit	\$ 80,000.00	\$ 160,000.00
IV	Drainage	58	l.m.	\$ 5,800.00	\$ 336,400.00
	Basin Drain, Replacement 2.1 x 1.50	58	l.m.	3,000.00	174,000.00
	Titcombe Drain (1200mmØ)	50	l.m.	575.00	28,750.00
	Installation and Demolition (60% of direct cost) 202,750		L.S.		121,650.00
	Earthworks	1,000	cu.m.	12.00	12,000.00
V	Pumping Station	5	unit	\$ 800,000.00	\$ 4,000,000.00
	Pump No. of Pumping Sta.= 5	5	unit	600,000.00	3,000,000.00
	Pump House	5	unit	200,000.00	1,000,000.00
VI	Roadway Storm Sewer	10,890	l.m.	\$ 255.93	\$ 2,787,040.00
	Highway 401				
	Storm Sewer (average size = 450 mm)	10,890	l.m.	90.00	980,100.00
	Manholes (average size = 1200 mm)	121	unit	3,000.00	363,000.00
	Catch Basins (standard depth)	242	unit	700.00	169,400.00
	Catch Basin Leads	8,470	l.m.	50.00	423,500.00
	Miscellaneous (MH/CB Covers, etc)	121	unit	1,500.00	181,500.00
	Earthworks	8,000	cu.m.	12.00	96,000.00
	Installation (60% of direct cost) 955,900				573,540.00
Estimated Direct and Indirect Cost					\$ 8,670,940.00
Add 20% Contingency					\$ 1,734,188.00
Total Estimated Construction Cost					\$ 10,405,128.00

90% = \$ 10,000,000.00

The Parkway

**The Parkway - Practical Alternative
NORTH TALBOT ROAD TO PLAZA A**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Highway 3	Km	1.3	\$13,489,722	\$17,536,638
Interchange at Highway 401 / Highway 3 / Howard Avenue (Including structures)	Each	1.0	\$28,000,000	\$28,000,000
6-lane freeway transition section - Highways	Km	0.8	\$9,567,545	\$7,654,036
6-lane freeway below grade section - Highways	Km	6.4	\$9,567,545	\$61,232,285
6-lane freeway below grade section - Structural	L.S.	1.0	\$222,882,500	\$222,882,500
6-lane freeway above grade section - Highways	Km	1.0	\$9,583,569	\$9,583,569
Laurier Parkway Connection to Howard Avenue	Km	0.9	\$2,062,014	\$1,855,812
Excavation - transition section	m ³	210000	\$10	\$2,100,000
Excavation - below grade section	m ³	2670000	\$10	\$26,700,000
One-Way Municipal Road	Km	2.9	\$1,306,187	\$3,787,943
Two-Way Municipal Road	Km	4.6	\$2,062,014	\$9,485,263
Realigned Side Roads (4-lane section)	Km	1.5	\$2,062,014	\$3,093,021
Underpass Structure at North Talbot Road	Each	1.0	\$2,273,000	\$2,273,000
Underpass Structure at Howard Avenue	Each	1.0	\$5,166,000	\$5,166,000
Oliver Estates Short Tunnel (240m)	Each	1.0	\$29,800,000	\$29,800,000
Interchange west of Howard Avenue	Each	1.0	\$25,000,000	\$25,000,000
Underpass Structure at Montgomery Drive	Each	1.0	\$7,523,000	\$7,523,000
Hearthwood Place Short Tunnel (220m)	Each	1.0	\$43,198,000	\$43,198,000

**The Parkway - Practical Alternative
NORTH TALBOT ROAD TO PLAZA A**

Cousineau Road Short Tunnel (120m)	Each	1.0	\$18,224,000	\$18,224,000
St. Clair College Short Tunnel (120m)	Each	1.0	\$16,052,000	\$16,052,000
Interchange at St. Clair College	Each	1.0	\$16,000,000	\$16,000,000
Underpass Structure at East of Cahill Drain	Each	1.0	\$4,171,000	\$4,171,000
Underpass Structure at East of Huron Church Line	Each	1.0	\$3,905,000	\$3,905,000
Huron Church Line Short Tunnel (240m)	Each	1.0	\$38,772,000	\$38,772,000
Partial Interchange at Huron Church Line	Each	1.0	\$7,000,000	\$7,000,000
Todd Lane/Cabana Road Short Tunnel (120m)	Each	1.0	\$17,435,000	\$17,435,000
Interchange at Todd Lane / Cabana Road	Each	1.0	\$16,000,000	\$16,000,000
Reddock Street Short Tunnel (120m)	Each	1.0	\$28,728,000	\$28,728,000
Overpass Structure at West of Reddock Street	Each	1.0	\$1,073,000	\$1,073,000
Pulford Street Short Tunnel (120m)	Each	1.0	\$19,584,000	\$19,584,000
Grand Marais Road Short Tunnel (120m)	Each	1.0	\$19,851,000	\$19,851,000
Interchange at Grand Marais Road West	Each	1.0	\$11,000,000	\$11,000,000
Underpass Structure at Grand Marais Road West	Each	1.0	\$3,719,000	\$3,719,000
Labelle Street Short Tunnel (240m)	Each	1.0	\$32,568,000	\$32,568,000
Spring Garden Short Tunnel (200m)	Each	1.0	\$24,000,000	\$24,000,000
Modify the existing interchange at Huron Church / E.C. ROW Expressway	Each	1.0	\$2,000,000	\$2,000,000

**The Parkway - Practical Alternative
NORTH TALBOT ROAD TO PLAZA A**

Overpass Structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Interchange at Malden Road (including structures)	L.S.	1.0	\$50,000,000	\$50,000,000
Stormwater Management Facility	L.S.	1.0	\$4,538,630	\$4,538,630
Drainage	L.S.	1.0	\$39,553,240	\$39,553,240
Pumping Stations	L.S.	1.0	\$4,000,000	\$4,000,000
Roadway Storm Sewer	L.S.	1.0	\$12,472,048	\$12,472,048
Signalized intersection	Each	11.0	\$200,000	\$2,200,000
Small drain culverts	L.S.	1.0	\$6,650,000	\$6,650,000
Construction staging	L.S.	1.0	\$20,000,000	\$20,000,000
Utility Relocations	L.S.	1.0	\$30,000,000	\$30,000,000
Subtotal				\$959,226,985
Landscaping on short tunnels, trail, pedestrian overpasses, contour grading, side slopes and outside service roads		10.0%		\$95,922,699
Subtotal Construction Cost \$CAD				\$1,055,149,684
Contingency		20.0%		\$211,029,937
Engineering (Design, Construction Administration)		10.0%		\$105,514,968
Total Cost \$CAD (2006)				\$1,371,694,589
Cost Escalate \$CAD (2011)		3.0% 1.16		\$1,590,169,975
Rounded Cost \$CAD (2011)				\$1,600,000,000

* All cost based on 2006 HICO unit prices

**The Parkway - Practical Alternative
NORTH TALBOT ROAD TO MALDEN ROAD**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Highway 401 - North Talbot Road to Highway 3	Km	1.3	\$13,489,722	\$17,536,638
Interchange at Highway 401 / Highway 3 / Howard Avenue (Including structures)	Each	1.0	\$28,000,000	\$28,000,000
6-lane freeway transition section - Highways	Km	0.8	\$9,567,545	\$7,654,036
6-lane freeway below grade section - Highways	Km	6.4	\$9,567,545	\$61,232,285
6-lane freeway below grade section - Structural	L.S.	1.0	\$222,882,500	\$222,882,500
6-lane freeway above grade section - Highways	Km	0.6	\$9,583,569	\$5,750,141
Laurier Parkway Connection to Howard Avenue	Km	0.9	\$2,062,014	\$1,855,812
Excavation - transition section	m ³	180000	\$10	\$1,800,000
Excavation - below grade section	m ³	2580000	\$10	\$25,800,000
One-Way Municipal Road	Km	2.9	\$1,306,187	\$3,787,943
Two-Way Municipal Road	Km	4.6	\$2,062,014	\$9,485,263
Realigned Side Roads (4-lane section)	Km	1.5	\$2,062,014	\$3,093,021
Underpass Structure at North Talbot Road	Each	1.0	\$2,273,000	\$2,273,000
Underpass Structure at Howard Avenue	Each	1.0	\$5,166,000	\$5,166,000
Oliver Estates Short Tunnel (240m)	Each	1.0	\$29,800,000	\$29,800,000
Interchange west of Howard Avenue	Each	1.0	\$25,000,000	\$25,000,000
Underpass Structure at Montgomery Drive	Each	1.0	\$7,523,000	\$7,523,000
Hearthwood Place Short Tunnel (220m)	Each	1.0	\$43,198,000	\$43,198,000

**The Parkway - Practical Alternative
NORTH TALBOT ROAD TO MALDEN ROAD**

Cousineau Road Short Tunnel (120m)	Each	1.0	\$18,224,000	\$18,224,000
St. Clair College Short Tunnel (120m)	Each	1.0	\$16,052,000	\$16,052,000
Interchange at St. Clair College	Each	1.0	\$16,000,000	\$16,000,000
Underpass Structure at East of Cahill Drain	Each	1.0	\$4,171,000	\$4,171,000
Underpass Structure at East of Huron Church Line	Each	1.0	\$3,905,000	\$3,905,000
Huron Church Line Short Tunnel (240m)	Each	1.0	\$38,772,000	\$38,772,000
Partial Interchange at Huron Church Line	Each	1.0	\$7,000,000	\$7,000,000
Todd Lane/Cabana Road Short Tunnel (120m)	Each	1.0	\$17,435,000	\$17,435,000
Interchange at Todd Lane / Cabana Road	Each	1.0	\$16,000,000	\$16,000,000
Reddock Street Short Tunnel (120m)	Each	1.0	\$28,728,000	\$28,728,000
Overpass Structure at West of Reddock Street	Each	1.0	\$1,073,000	\$1,073,000
Pulford Street Short Tunnel (120m)	Each	1.0	\$19,584,000	\$19,584,000
Grand Marais Road Short Tunnel (120m)	Each	1.0	\$19,851,000	\$19,851,000
Interchange at Grand Marais Road West	Each	1.0	\$11,000,000	\$11,000,000
Underpass Structure at Grand Marais Road West	Each	1.0	\$3,719,000	\$3,719,000
Labelle Street Short Tunnel (240m)	Each	1.0	\$32,568,000	\$32,568,000
Spring Garden Short Tunnel (200m)	Each	1.0	\$24,000,000	\$24,000,000
Overpass Structure at Malden Road	Each	1.0	\$2,860,000	\$2,860,000
Stormwater Management Facility	L.S.	1.0	\$4,538,630	\$4,538,630

**The Parkway - Practical Alternative
NORTH TALBOT ROAD TO MALDEN ROAD**

Drainage	L.S.	1.0	\$39,553,240	\$39,553,240
Pumping Stations	L.S.	1.0	\$4,000,000	\$4,000,000
Roadway Storm Sewer	L.S.	1.0	\$12,472,048	\$12,472,048
Signalized intersection	Each	11.0	\$200,000	\$2,200,000
Small drain culverts	L.S.	1.0	\$6,650,000	\$6,650,000
Construction staging	L.S.	1.0	\$20,000,000	\$20,000,000
Utility Relocations	L.S.	1.0	\$30,000,000	\$30,000,000
Subtotal				\$902,193,558
Landscaping on short tunnels, trail, pedestrian overpasses, contour grading, side slopes and outside service roads		10.0%		\$90,219,356
Subtotal Construction Cost \$CAD				\$992,412,914
Contingency		20.0%		\$198,482,583
Engineering (Design, Construction Administration)		10.0%		\$99,241,291
Total Cost \$CAD (2006)				\$1,290,136,788
Cost Escalate \$CAD (2011)		3.0%		\$1,495,622,130
		1.16		
Rounded Cost \$CAD (2011)				\$1,500,000,000

* All cost based on 2006 HICO unit prices

The Parkway
Below Grade Freeway Parallel to Hwy 3 Corridor (Huron Church Road)

Structure I.D.	Structure Name	Structure Type	CassionWall Type	Length (M)	Width (M)	Unit Cost (\$)	Cost (\$)
Bridges							
BR - 1	North Talbot Road Underpass	Two Spans Bridge		31+31	15.6	\$2,350	\$2,273,000
BR - 2	Ramp E-E/W Underpass	Four Spans Bridge		16+30+23+16	9.3	\$2,300	\$1,818,000
BR - 3	Hwy 3 Underpass at East of Howard Avenue	Four Spans Bridge		18+24+20+18	24.05	\$2,000	\$3,848,000
BR - 4	Howard Avenue Underpass	Four Spans Bridge		19+30+30+21	24.6	\$2,100	\$5,166,000
BR - 5	Hwy 3 Underpass near Montgomery Street	Four Spans Bridge		20+48+48+20	24.05	\$2,300	\$7,523,000
BR - 6	Hwy 3 Underpass at East of Cahill Drain	Four Spans Bridge		30+47+50+30	11.55	\$2,300	\$4,171,000
BR - 7	Hwy 3 EB Underpass Crossing at East of Huron Church Line	Four Spans Bridge		30+47+40+30	11.55	\$2,300	\$3,905,000
BR - 8	Highway 3 Overpass at West of Reddock Street	Single Span Bridge		19	24.55	\$2,300	\$1,073,000
BR - 9	Hwy 3 Underpass at West of Grand Marais Road West	Five Spans Bridge		20+34+35+31+20	11.55	\$2,300	\$3,719,000
BR - 10	Malden Road Overpass	Single Span Bridge		35	40.85	\$2,000	\$2,860,000
BR - 11	Ramp W-E Underpass	Two Spans Bridge		47.5+47.5	9.3	\$2,100	\$1,855,000
BR - 12	Matchette Road Overpass	Single Span Bridge		40	40.85	\$2,000	\$3,268,000
BR - 13	Ojibway / ETR Overpass	Three Spans Bridge		34+34+45	43.55	\$2,500	\$12,303,000
BR - 14	Ramp E-W at Ojibway Parkway Overpass	Single Span Bridge		44	12.05	\$2,000	\$1,060,000
BR - 15	Ramp E-W at ETR Overpass	Single Span Bridge		30	12.05	\$2,500	\$904,000
	Sub-Total : Bridges						\$55,746,000

Structure I.D.	Structure Name	Structure Type	CassionWall Type	Length (M)	Width (M)	Unit Cost (\$)	Cost (\$)
Trail Bridges							
TB - 1	Trail Bridge Above Hwy 3 at West of Howard Avenue	Single Span Bridge		26	4.6	\$2,400	\$287,000
TB - 2	Deleted						
TB - 3	Trail Bridge Above Hwy 3 at West of Cousineau Road	Single Span Bridge		26	4.6	\$2,400	\$287,000
TB - 4	Trail Bridge Above Cousineau Road at South of Hwy 401	Single Span Bridge		22	4.6	\$2,400	\$243,000
TB - 5	Trail Bridge Above St. Clair College Road	Single Span Bridge		22	4.6	\$2,400	\$243,000
TB - 6	Trail Bridge Above Hwy 3 at West of St. Clair College Road	Single Span Bridge		26	4.6	\$2,400	\$287,000
TB - 7	Trail Bridge Above Hwy 3 at East of Huron Church Line	Single Span Bridge		26	4.6	\$2,400	\$287,000
TB - 8	Trail Bridge Above Huron Church Line	Single Span Bridge		25	4.6	\$2,400	\$276,000
TB - 9	Trail Bridge Above Hwy 3 at South of Cabana Road West	Single Span Bridge		33	4.6	\$2,200	\$334,000
TB - 10	Trail Bridge Above Cabana Road West	Single Span Bridge		22	4.6	\$2,400	\$243,000
TB - 11	Trail Bridge Above Hwy 401 EB Lane Ramps at South of Reddock St.	Single Span Bridge		26	4.6	\$2,400	\$287,000
TB - 12	Trail Bridge Above Pulford Street	Single Span Bridge		22	4.6	\$2,400	\$243,000
TB - 13	Trail Bridge Above Hwy 3 at North of Pulford Street	Single Span Bridge		26	4.6	\$2,400	\$287,000
TB - 14	Trail Bridge Above Hwy 3 at East of Grand Marais Road West	Single Span Bridge		26	4.6	\$2,400	\$287,000
TB - 15	Trail Bridge Above Grand Marais Road West at East of Hwy 401	Single Span Bridge		22	4.6	\$2,400	\$243,000
TB - 16	Deleted						
TB - 17	Trail Bridge Above Hwy 3 at South of Labelle Street	Single Span Bridge		19	4.6	\$2,400	\$210,000
TB - 18	Trail Bridge Above Bethlehem Avenue	Single Span Bridge		19	4.6	\$2,400	\$210,000
TB - 19	Trail Bridge Above EB Hwy 3 at East of Bethlehem Avenue	Single Span Bridge		17	4.6	\$2,400	\$188,000
TB - 20	Trail Bridge Above Howard Avenue at South of Hwy 401	Single Span Bridge		22	4.6	\$2,400	\$243,000
TB - 21	Trail Bridge Above Laurier Parkway Connection at South of Hwy 3	Single Span Bridge		26	4.6	\$2,400	\$287,000
	Sub-Total : Trail Bridges						\$4,972,000

Structure I.D.	Structure Name	Structure Type	CassionWall Type	Length (M)	Width (M)	Unit Cost (\$)	Cost (\$)
Short Tunnels							
ST - 1 (A)	Short Tunnel at West of Howard Avenue Underpass (East side)	Three Spans Bridge		19+21+23	80	\$2,500	\$12,600,000
ST - 1 (B)	Short Tunnel at West of Howard Avenue Underpass (West side)	Two Spans Bridge		20+23	160	\$2,500	\$17,200,000
ST - 2 (A)	Short Tunnel at Hearthwood (East side)	Three Spans Bridge		38+33+30	165	\$2,100	\$34,997,000
ST - 2 (B)	Short Tunnel at Hearthwood (West side)	Two Spans Bridge		38+33	55	\$2,100	\$8,201,000
ST - 3 (A)	Short Tunnel at Cousineau Road / Sandwich Parkway (East side)	Two Spans Bridge		34+34	50	\$2,000	\$6,800,000
ST - 3 (B)	Short Tunnel at West of Cousineau Road / Sandwich Parkway	Two Spans Bridge		34+34	70	\$2,400	\$11,424,000
ST - 4 (A)	Short Tunnel at St. Clair College Road (East side)	Two Spans Bridge		31+31	51	\$2,000	\$6,324,000
ST - 4 (B)	Short Tunnel at St. Clair College Road (Middle)	Two Spans Bridge		31+31	22.05	\$2,000	\$2,734,000
ST - 4 (C)	Short Tunnel at St. Clair College Road (West side)	Two Spans Bridge		31+31	47	\$2,400	\$6,994,000
ST - 5 (A)	Short Tunnel at Huron Church Line (East side)	Four Spans Bridge		14+22+22+14	60	\$2,500	\$10,800,000
ST - 5 (B)	Short Tunnel at Huron Church Line (Middle)	Four Spans Bridge		14+22+22+14	45	\$2,100	\$6,804,000
ST - 5 (C)	Short Tunnel at Huron Church Line (West side)	Four Spans Bridge		14+22+22+14	140	\$2,100	\$21,168,000
ST - 6 (A)	Short Tunnel at East of Cabana Road West (East side)	Two Spans Bridge		32+36	71	\$2,400	\$11,587,000
ST - 6 (B)	Short Tunnel at East of Cabana Road West (Middle)	Two Spans Bridge		32+36	28	\$2,000	\$3,808,000
ST - 6 (C)	Short Tunnel at East of Cabana Road West (West side)	Two Spans Bridge		32+36	15	\$2,000	\$2,040,000
ST - 7	Short Tunnel at Reddock Street	Three Spans Bridge		40+40+34	120	\$2,100	\$28,728,000
ST - 8	Short Tunnel at Pulford Street	Two Spans Bridge		34+34	120	\$2,400	\$19,584,000
ST - 9 (A)	Short Tunnel at South of Grand Marais Road West (East side)	Two Spans Bridge		34+37	96	\$2,400	\$16,358,000
ST - 9 (B)	Grand Marais Road West Underpass (West side)	Two Spans Bridge		34+37	24.6	\$2,000	\$3,493,000
ST - 10 (A)	Short Tunnel at South of Labelle Street (East side)	Two Spans Bridge		30+30	107	\$2,000	\$12,840,000
ST - 10 (B)	Short Tunnel at South of Labelle Street (Middle)	Two Spans Bridge		30+30	105	\$2,400	\$15,120,000
ST - 10 (C)	Short Tunnel at South of Labelle Street (West side)	Two Spans Bridge		30+30	32	\$2,400	\$4,608,000
ST - 11	Short Tunnel near E.C. ROW Expressway	Two Spans Bridge		30+30	200	\$2,000	\$24,000,000
	Sub-Total : Short Tunnels						\$288,212,000

Structure I.D.	Structure Name	Structure Type	CassionWall Type	Length (M)	Width (M)	Unit Cost (\$)	Cost (\$)
Retaining Walls							
RW - 1	Below Grade Hwy 401at West of Ramp E-E/W (South Side - S)	C.W. with Open Cut	D	230	Length	\$27,000	\$6,210,000
RW - 2	Below Grade Hwy 401at West of Ramp E-E/W (North Side - N)	C.W. with Open Cut	D	170	Length	\$27,000	\$4,590,000
RW - 3	Approach Ramp of Hwy 3 S-W Bullnose Entrance (East Side - E)	C.W. with Open Cut	D	75	Length	\$27,000	\$2,025,000
RW - 4	Below Grade Hwy 401at East of Hwy 3 Crossing (N)	C.W. with Open Cut	D	130	Length	\$27,000	\$3,510,000
RW - 5A	Below Grade Hwy 401with Hwy 3 EB Ramp at East of Howard Avenue (West Side)	C.W. with Open Cut	D	150	Length	\$27,000	\$4,050,000
RW - 5B	Below Grade Hwy 401with Hwy 3 EB Ramp at East of Howard Avenue (East Side)	C.W. with Open Cut	D	150	Length	\$27,000	\$4,050,000
RW - 6	Hwy 3 EB Ramp at East of Howard Avenue (N)	C.W. with Open Cut	D	150	Length	\$27,000	\$4,050,000
RW - 7	Below Garde Hwy 401 at East of Howard Avenue (N)	C.W. with Open Cut	D	295	Length	\$27,000	\$7,965,000
RW - 8	Below Grade Hwy 401 at West of Howard Avenue (S)	Full Height C.W.	BS3	145	Length	\$32,500	\$4,712,500
RW - 9	Below Grade Hwy 401 at West of Howard Avenue (N)	C.W. with Open Cut	D	110	Length	\$27,000	\$2,970,000
RW - 10A	Below Grade Hwy 401 with EB lane of Hwy 3 at West of Howard Avenue (East Side)	C.W. with Open Cut	A	155	Length	\$31,000	\$4,805,000
RW - 10B	Below Grade Hwy 401 with EB lane of Hwy 3 at West of Howard Avenue (West Side)	C.W. with Open Cut	A	150	Length	\$31,000	\$4,650,000
RW - 11	Approach Ramp of EB Lane of Hwy 3 at East of Montgomery Drive (N)	C.W. with Open Cut	A	150	Length	\$31,000	\$4,650,000
RW - 12	Below Grade Hwy 401 at East of Montgomery Drive (N)	C.W. with Open Cut	A	230	Length	\$31,000	\$7,130,000
RW - 13	Below Grade Hwy 401 at East of Hearthwood Short Tunnel (S)	C.W. with Open Cut	A	425	Length	\$31,000	\$13,175,000
RW - 14	Approach Ramp of Hwy 3 WB Lane Near Montgomery Drive (S)	C.W. with Open Cut	A	225	Length	\$31,000	\$6,975,000
RW - 15A	Below Grade Hwy 401 at East of Hearthwood Short Tunnel (West Side)	C.W. with Open Cut	A	275	Length	\$31,000	\$8,525,000
RW - 15B	Below Grade Hwy 401 at East of Hearthwood Short Tunnel (East Side)	C.W. with Open Cut	A	225	Length	\$31,000	\$6,975,000
RW - 16	Ramp of Hwy 3 at East of Hearthwood Short Tunnel (S)	Full Height C.W.	BS1	200	Length	\$15,000	\$3,000,000
RW - 17	Ramp of Hwy 3 at West of Hearthwood Short Tunnel (S)	Full Height C.W.	BS1	240	Length	\$15,000	\$3,600,000
RW - 18	Below Grade Hwy 401 at East of Cousineau Road (S)	C.W. with Open Cut	D	210	Length	\$27,000	\$5,670,000
RW - 19	Below Grade Hwy 401 at East of Cousineau Road (N)	C.W. with Open Cut	D	210	Length	\$27,000	\$5,670,000
RW - 20	Below Grade Hwy 401 between Cousineau Road & St.Clair College (S)	C.W. with Open Cut	C	390	Length	\$32,500	\$12,675,000
RW - 21	Below Grade Hwy 401 between Cousineau Road & St.Clair College (N)	C.W. with Open Cut	C	390	Length	\$32,500	\$12,675,000
RW - 22	Below Grade Hwy 401 with WB Ramp at west of St.Clair College (S)	C.W. with Open Cut	C	135	Length	\$32,500	\$4,387,500
RW - 23	WB Lane Ramp at West of St.Clair College (S)	C.W. with Open Cut	E	210	Length	\$18,000	\$3,780,000
RW - 24	WB Lane Ramp at West of St.Clair College (N)	C.W. with Open Cut	E	245	Length	\$18,000	\$4,410,000
RW - 25	EB Lane Ramp at West of Cahill Drain Crossing (S)	C.W. with Open Cut	E	180	Length	\$18,000	\$3,240,000
RW - 26	EB Lane Ramp at West of Cahill Drain Crossing (N)	C.W. with Open Cut	E	150	Length	\$18,000	\$2,700,000
RW - 27	Below Grade Hwy 401 between Huron Church Line and Cahill Drain (S)	C.W. with Open Cut	A	300	Length	\$31,000	\$9,300,000
RW - 28	Below Grade Hwy 401 between Huron Church Line and Cahill Drain (N)	C.W. with Open Cut	A	480	Length	\$31,000	\$14,880,000
RW - 29	EB Lane Ramp at East of Huron Church Line (S)	Full Height C.W.	BS1	240	Length	\$15,000	\$3,600,000
RW - 30	EB Lane Ramp at East of Huron Church Line (N)	Full Height C.W.	BS1	140	Length	\$15,000	\$2,100,000
RW - 31	Below Grade Hwy 401 at West of Huron Church Line (N)	C.W. with Open Cut	C	130	Length	\$31,000	\$4,030,000
RW - 32	Below Grade Hwy 401 at West of Huron Church Line (S)	C.W. with Open Cut	B	265	Length	\$31,000	\$8,215,000
RW - 33	Below Grade Hwy 401 at West of Huron Church Line (N)	C.W. with Open Cut	B	245	Length	\$29,500	\$7,227,500

Structure I.D.	Structure Name	Structure Type	CassionWall Type	Length (M)	Width (M)	Unit Cost (\$)	Cost (\$)
Retaining Walls (Continued)							
RW - 34	EB Lane Ramp From Todd Lane to Hwy 401 EB (S)	Full Height C.W.	BS1	180	Length	\$15,000	\$2,700,000
RW - 35	EB Lane Ramp at South of Reddock St. Short Tunnel (S)	Full Height C.W.	BS1	180	Length	\$15,000	\$2,700,000
RW - 36	Below Grade Hwy 401 at South of Reddock St. Short Tunnel (S)	C.W. with Open Cut	B	185	Length	\$29,500	\$5,457,500
RW - 37	Below Grade Hwy 401 at North of Cabana Road West / Todd Lane	C.W. with Open Cut	B	265	Length	\$29,500	\$7,817,500
RW - 38	Ramp of Hwy 3 at South of Reddock Street Short Tunnel (N)	Full Height C.W.	BS1	200	Length	\$15,000	\$3,000,000
RW - 39	Below Grade Hwy 401 at North of Reddock St. Short Tunnel (S)	C.W. with Open Cut	B	310	Length	\$29,500	\$9,145,000
RW - 40	Below Grade Hwy 401 at North of Reddock St. Short Tunnel (N)	C.W. with Open Cut	B	265	Length	\$29,500	\$7,817,500
RW - 41	Ramp of WB Lane of Hwy 3 at South of Pulford St. (N)	C.W. with Open Cut	B	110	Length	\$29,500	\$3,245,000
RW - 42	Ramp of Hwy 3 at North of Reddock Street Short Tunnel (N)	Full Height C.W.	BS1	140	Length	\$15,000	\$2,100,000
RW - 43	Ramp of WB Lane of Hwy 3 at North of Reddock St. Short Tunnel (N)	C.W. with Open Cut	B	155	Length	\$29,500	\$4,572,500
RW - 44	EB Lane Ramp at North of Grand Marais Road West (S)	Full Height C.W.	BS1	260	Length	\$15,000	\$3,900,000
RW - 45	Below Grade Hwy 401 at North of Grand Marais Road West (S)	C.W. with Open Cut	B	150	Length	\$29,500	\$4,425,000
RW - 46	Below Grade Hwy 401 at North of Grand Marais Road West (N)	C.W. with Open Cut	B	120	Length	\$29,500	\$3,540,000
RW - 47	Below Grade Hwy 401 at South of Labelle St.	C.W. with Open Cut	B	165	Length	\$29,500	\$4,867,500
RW - 48	Below Grade Hwy 401 at North of Hwy 3 Crossing at South of Labelle St.	C.W. with Open Cut	B	220	Length	\$29,500	\$6,490,000
RW - 49	WB Lane Ramp at South of Labelle Street	Full Height C.W.	BS1	80	Length	\$15,000	\$1,200,000
RW - 50	Below Grade Hwy 401 at North of Labelle Street (S)	C.W. with Open Cut	B	200	Length	\$29,500	\$5,900,000
RW - 51	Below Grade Hwy 401 at North of Labelle Street (N)	C.W. with Open Cut	B	200	Length	\$29,500	\$5,900,000
RW - 52	Hwy 401 Ramp at West of Short Tunnel near E.C.ROW Expressway (S)	Full Height C.W.	BS1	150	Length	\$15,000	\$2,250,000
RW - 53	Hwy 401 Ramp at West of Short Tunnel near E.C.ROW Expressway (N)	Full Height C.W.	BS1	150	Length	\$15,000	\$2,250,000
	Sub-Total : Retaining Walls						\$301,455,000
Culverts							
CV - 1	Culvert at West of Howard Avenue	Twin Cell Box Culvert		15	Length	\$35,000	\$525,000
CV - 2	Culvert at North of Hearthwood	Twin Cell Box Culvert		40	Length	\$35,000	\$1,400,000
CV - 3	Culvert under Cousineau Road	Twin Cell Box Culvert		70	Length	\$35,000	\$2,450,000
CV - 4	Culvert under St. Clair College Road	Twin Cell Box Culvert		65	Length	\$35,000	\$2,275,000
	Sub-Total : Culverts						\$6,650,000
	TOTAL COST OF ALL STRUCTURES						\$657,035,000
<p>Note: Above Costs include only Structural Costs. These costs do not include Roadwork, Earthwork, Road & Traffic Diversions, Roadway Protection etc; which are included in the Hwy Costs.</p>							

Detroit River International Crossing
STORMWATER MANAGEMENT STUDY
 Highway 3/Talbot Road/Church Huron Corridor
THE PARKWAY
CONSTRUCTION COST ESTIMATE

PRELIMINARY COST TO BE CONFIRMED

Item	Description	Quantity	Unit	Unit Cost	Total
I	Stormwater Management Facility				\$ 4,538,630.00
	Inlet/ Outlet Control Structure	7	L.S.	125,000.00	875,000.00
	Landscaping	7	L.S.	200,000.00	1,400,000.00
	Earthworks	226,363	cu.m.	10.00	2,263,630.00
III	Oil Grit Separator	-	unit		
IV	Drainage	901	l.m.	\$ 43,899.27	\$ 39,553,240.00
	Cahill Drain Crossing, Siphon 4.5 x 1.5	212	l.m.	22,500.00	4,770,000.00
	Cahill West Tributary Replacement (1200mmØ)	92	l.m.	575.00	52,900.00
	Lennon Drain Replacement, Siphon 3.0 x 1.50	158	l.m.	15,000.00	2,370,000.00
	Turkey Creek, 3 cells 10.00x2.00	140	l.m.	120,000.00	16,800,000.00
	Turkey Creek Transition	224	l.m.	2,000.00	448,000.00
	Marentette Mangin Drain (1200mmØ)	15	l.m.	\$575.00	8,625.00
	Basin Drain, Replacement 2.1 x 1.50	60	l.m.	3,000.00	180,000.00
	Titcombe Drain (1200mmØ)	50	l.m.	575.00	28,750.00
	Installation and Demolition (60% of direct cost) 24,658,275		L.S.		14,794,965.00
	Earthworks	10,000	cu.m.	10.00	100,000.00
V	Pumping Station	5	unit	\$ 800,000.00	\$ 4,000,000.00
	Pump No. of Pum 5	5	unit	600,000.00	3,000,000.00
	Pump House	5	unit	200,000.00	1,000,000.00
VI	Roadway Storm Sewer (Conveying 100-Year Storm)	10,890	l.m.	\$ 1,145.28	\$ 12,472,048.00
	Highway 401				
	Storm Sewer (average size = 1050 mm)	10,890	l.m.	460.00	5,009,400.00
	Manholes (average size = 1800 mm)	156	unit	5,180.00	808,080.00
	Catch Basins (standard depth)	624	unit	700.00	436,800.00
	Catch Basin Leads	21,840	l.m.	50.00	1,092,000.00
	Miscellaneous (MH/CB Covers, etc)	156	unit	3,000.00	468,000.00
	Earthworks	25,000	cu.m.	10.00	250,000.00
	Installation (60% of direct cost) 7,346,280				4,407,768.00
Estimated Direct and Indirect Cost					\$ 60,563,918.00
Add 20% Contingency					\$ 12,112,783.60
Total Estimated Construction Cost					\$ 72,676,701.60

Malden Road to Plaza B

**Alternatives 1A, 1B, 2A, 2B and 3 - From Malden Road to Plaza B
PRELIMINARY COST ESTIMATE**

Description	Unit	Quantity	Unit Price	\$CAD Cost
6-lane freeway above-grade section from Huron Church Road to Plaza B	Km	2.3	\$9,583,569	\$22,042,208
Underpass structure at W-E Ramp	Each	1.0	\$1,758,000	\$1,758,000
Overpass structure at Matchette Road	Each	1.0	\$3,268,000	\$3,268,000
Directional ramps to / from E.C. ROW Expy	Km	2.0	\$1,816,283	\$3,632,566
Signalized intersection	Each	2.0	\$200,000	\$400,000
Structure on directional ramps	Each	2.0	\$1,000,000	\$2,000,000
Interchange at Ojibway Parkway	L.S.	1.0	\$15,000,000	\$15,000,000
Utility Relocations	L.S.	1.0	\$8,000,000	\$8,000,000
Subtotal				\$56,100,774
Contingency		20.0%		\$11,220,155
Total Construction Cost \$CAD				\$67,320,929
Engineering (Design, Construction Administration)		10.0%		\$5,610,077
Total Cost \$CAD (2006)				\$72,931,007
Cost Escalate \$CAD (2011)		3.0%		\$84,547,025
Rounded Cost \$CAD (2011)				\$85,000,000

**The Parkway - From Malden Road to Plaza B
PRELIMINARY COST ESTIMATE**

Description	Unit	Quantity	Unit Price	\$CAD Cost
6-lane freeway above-grade section from Malden Road to Plaza B	Km	2.3	\$9,583,569	\$22,042,208
Underpass structure at W-E Ramp	Each	1.0	\$1,855,000	\$1,855,000
Overpass structure at Matchette Road	Each	1.0	\$3,268,000	\$3,268,000
Highway 401 W-E Ramp to E.C. ROW Expy	Km	0.75	\$1,421,241	\$1,065,931
Signalized intersection	Each	2.0	\$200,000	\$400,000
Interchange at Ojibway Parkway	L.S.	1.0	\$15,000,000	\$15,000,000
Utility Relocations	L.S.	1.0	\$8,000,000	\$8,000,000
Subtotal				\$51,631,139
Contingency		20.0%		\$10,326,228
Total Construction Cost \$CAD				\$61,957,367
Engineering (Design, Construction Administration)		10.0%		\$5,163,114
Total Cost \$CAD (2006)				\$67,120,481
Cost Escalate \$CAD (2011)		3.0%		\$77,188,553
Rounded Cost \$CAD (2011)				\$80,000,000

Malden Road to Plaza C

**Alternatives 1A, 1B, 2A, 2B and 3 - From Malden Road to Plaza C
PRELIMINARY COST ESTIMATE**

Description	Unit	Quantity	Unit Price	\$CAD Cost
6-lane freeway at-grade section from Huron Church Road to Plaza B	Km	0.7	\$13,489,722	\$9,982,394
6-lane freeway above-grade section from Huron Church Road to Plaza B	Km	2.3	\$9,583,569	\$22,042,208
Underpass structure at W-E Ramp	Each	1.0	\$1,758,000	\$1,758,000
Overpass structure at Matchette Road	Each	1.0	\$3,268,000	\$3,268,000
Directional ramps to / from E.C. ROW Expressway	Km	2.0	\$1,816,283	\$3,632,566
Signalized intersection	Each	3.0	\$200,000	\$600,000
Structure on directional ramps	Each	2.0	1,000,000	\$2,000,000
Interchange at Ojibway Parkway	L.S.	1.0	\$15,000,000	\$15,000,000
Utility Relocations	L.S.	1.0	\$12,000,000	\$12,000,000
Subtotal				\$60,300,774
Contingency		20.0%		\$12,060,155
Total Construction Cost \$CAD				\$72,360,929
Engineering (Design, Construction Administration)		10.0%		\$6,030,077
Total Cost \$CAD (2006)				\$78,391,007
Cost Escalate \$CAD (2011)		3.0%		\$90,149,658
Rounded Cost \$CAD (2011)				\$100,000,000

**The Parkway - From Malden Road to Plaza C
PRELIMINARY COST ESTIMATE**

Description	Unit	Quantity	Unit Price	\$CAD Cost
6-lane freeway at-grade section from Plaza C to Ojibway Parkway	Km	0.7	\$13,489,722	\$9,442,805
6-lane freeway above-grade section from Ojibway Parkway to Malden Road	Km	2.3	\$9,583,569	\$22,042,208
Underpass structure at W-E Ramp	Each	1.0	\$1,855,000	\$1,855,000
Overpass structure at Matchette Road	Each	1.0	\$3,268,000	\$3,268,000
Highway 401 W-E Ramp to E.C. ROW Expy	Km	0.75	\$1,421,241	\$1,065,931
Signalized intersection	Each	2.0	\$200,000	\$400,000
Interchange at Ojibway Parkway	L.S.	1.0	\$15,000,000	\$15,000,000
Utility Relocations	L.S.	1.0	\$12,000,000	\$12,000,000
Subtotal				\$65,073,944
Contingency		20.0%		\$13,014,789
Total Construction Cost \$CAD				\$78,088,733
Engineering (Design, Construction Administration)		10.0%		\$6,507,394
Total Cost \$CAD (2006)				\$84,596,128
Cost Escalate \$CAD (2011)		3.0%		\$97,285,547
Rounded Cost \$CAD (2011)				\$100,000,000

Plaza Costs

**PLAZA
PRELIMINARY COST ESTIMATE**

Description	Unit	Quantity	Unit Price	\$CAD Cost
Plaza A Construction	LS	1.0	150,000,000	150,000,000
Total Cost \$CAD (2006)				\$150,000,000
Cost Escalate \$CAD (2011)		3.0%		\$172,500,000
Rounded Cost \$CAD (2011)				\$180,000,000

Plaza B Construction	LS	1.0	\$150,000,000	\$150,000,000
Total Cost \$CAD (2006)				\$150,000,000
Cost Escalate \$CAD (2011)		3.0%		\$172,500,000
Rounded Cost \$CAD (2011)				\$180,000,000

Plaza C Construction	LS	1.0	\$150,000,000	\$150,000,000
Total Cost \$CAD (2006)				\$150,000,000
Cost Escalate \$CAD (2011)		3.0%		\$172,500,000
Rounded Cost \$CAD (2011)				\$180,000,000

Supporting Data

CUT AND COVER TUNNEL - UNIT COST						
Item	Unit	Unit Price	Quantity	Total	Comments	
Support of Excavation Walls	m ²	\$432	215000	\$92,840,909		
Temporary Surface Traffic Lanes	m ²	\$114	127300	\$14,465,909		
Excavation	m ³	\$11	3300000	\$37,500,000		
Haul and Disposal	m ³	\$25	4290000	\$107,250,000		
Temporary Bridge Decking	each	\$1,704,545	5	\$8,522,727		
Concrete Tunnel	m	\$215,000	5800	\$1,247,000,000		
Backfill	m ³	\$73	1100000	\$80,000,000		
Final Surface Traffic Lanes	m ²	\$114	174200	\$19,795,455		
Standpipe	L.M.	\$455	12800	\$5,818,182		
Pump Station	each	\$909,091	3	\$2,727,273		
Signs, Striping	L.S.	\$3,409,091	1	\$3,409,091		
Sub-Total				\$1,619,329,545		
Misc. Fittings	%		2%	\$32,386,591		
Communication, Control, CCTV	%		4%	\$64,773,182		
Tunnel Lighting and Power	%		3%	\$48,579,886		
GRAND TOTAL				\$1,765,069,205		
			TOTAL LENGTH	5.8		
Grand Total (per km)	km			\$304,322,277		

401 MAINLINE FOR AT GRADE SECTION - UNIT COST (KM)					
Item	Unit	Unit Price	Quantity	Total	Comments
Jointed Plain Conc. Pavement (260mm depth)	m ²	\$175	23000	\$4,025,000	11.5m WIDE x 2
Asphalt (Superpave 12.5)	t	\$75	990	\$185,625	multiplier of 2.5
Open Grade Drainage Layer	t	\$25	3330	\$199,800	multiplier of 2.4
Granular A	t	\$16	14374	\$551,962	multiplier of 2.4
Tall Wall	m	\$200	1000	\$200,000	
Changeable Signs	each	\$80,000	1	\$80,000	Assume 1 per km
Subdrain	m	\$25	6000	\$150,000	6 runs
Noise Barrier System (inc. Jersey barrier)	m	\$2,000	2000	\$4,000,000	2 runs
Light Stands	each	\$60,000	10	\$600,000	along CL every 100m
Sub-Total				\$9,992,387	
Minor Items		35%		\$3,497,335	
Grand Total (per km)	km			\$13,489,722	

WITH NOISE WALL

401 MAINLINE FOR AT GRADE SECTION - UNIT COST (KM)					
Item	Unit	Unit Price	Quantity	Total	Comments
Jointed Plain Conc. Pavement (260mm depth)	m ²	\$175	23000	\$4,025,000	11.5m WIDE x 2
Asphalt (Superpave 12.5)	t	\$75	990	\$185,625	multiplier of 2.5
Open Grade Drainage Layer	t	\$25	3330	\$199,800	multiplier of 2.4
Granular A	t	\$16	14374	\$551,962	multiplier of 2.4
Tall Wall	m	\$200	1000	\$200,000	
Changeable Signs	each	\$80,000	1	\$80,000	Assume 1 per km
Subdrain	m	\$25	6000	\$150,000	6 runs
Light Stands	each	\$60,000	10	\$600,000	along CL every 100m
Sub-Total				\$5,992,387	
Minor Items		35%		\$2,097,335	
Grand Total (per km)	km			\$8,089,722	

WITHOUT NOISE WALL

401 MAINLINE FOR ABOVE GRADE SECTION - UNIT COST (KM)					
Item	Unit	Unit Price	Quantity	Total	Comments
Jointed Plain Conc. Pavement (260mm depth)	m ²	\$175	23000	\$4,025,000	11.5m WIDE x 2
Asphalt (Superpave 12.5)	t	\$75	990	\$185,625	multiplier of 2.5
Open Grade Drainage Layer	t	\$25	3330	\$199,800	multiplier of 2.4
Granular A	t	\$16	15792	\$606,413	multiplier of 2.4
Earth Borrow	m ³	\$7	164586	\$1,152,102	Average of 4m fill
Tall Wall	m	\$200	1000	\$200,000	
Changeable Signs	each	\$80,000	1	\$80,000	Assume 1 per km
Subdrain	m	\$25	2000	\$50,000	2 runs
Light Stands	each	\$60,000	10	\$600,000	along CL every 100m
Sub-Total				\$7,098,940	
Minor Items		35%		\$2,484,629	
Grand Total (per km)	km			\$9,583,569	

401 MAINLINE FOR BELOW GRADE SECTION - UNIT COST (KM)

Item	Unit	Unit Price	Quantity	Total	Comments
Jointed Plain Conc. Pavement (260mm depth)	m ²	\$175	23000	\$4,025,000	11.5m WIDE x 2
Asphalt (Superpave 12.5)	t	\$75	1092	\$204,750	multiplier of 2.5
Open Grade Drainage Layer	t	\$25	3330	\$199,800	multiplier of 2.4
Granular A	t	\$16	15300	\$587,520	multiplier of 2.4
Jersey Barrier	m	\$120	2000	\$240,000	
Jersey Barrier c/w Chain Link Fence	m	\$425	2000	\$850,000	Top of retain wall
Tall Wall	m	\$200	1000	\$200,000	
Changeable Signs	each	\$80,000	1	\$80,000	Assume 1 per km
Subdrain	m	\$25	4000	\$100,000	4 runs
Light Stands	each	\$60,000	10	\$600,000	along CL every 100m
Sub-Total				\$7,087,070	
Minor Items		35%		\$2,480,475	
Grand Total (per km)	km			\$9,567,545	

MUNICIPAL ROADS FOR TUNNEL SECTION - UNIT COST (KM) FOR BOTH SIDES

Item	Unit	Unit Price	Quantity	Total	Comments
Hot Mix HL-1 (45mm Depth)	t	\$75	988	\$185,250	multiplier of 2.5
Asphalt (55mm HDBC, 50mm HL-8)	t	\$60	2304	\$345,600	multiplier of 2.5
Granular A	t	\$16	3486	\$133,862	multiplier of 2.4
Granular B	t	\$14	14066	\$393,848	multiplier of 2.0
Curb and Gutter	m	\$50	4000	\$200,000	4 runs
Concrete Sidewalk	m ²	\$50	3000	\$150,000	1.5m wide x 2 runs
Subdrain	m	\$25	4000	\$100,000	4 runs
Light Stands	each	\$8,000	40	\$320,000	every 50m x 2 rows = 40
Sub-Total				\$1,828,560	
Minor Items		35%		\$639,996	
Grand Total (per km) for both sides				\$2,468,557	

MUNICIPAL ROADS FOR AT GRADE SECTION - UNIT COST (KM) FOR BOTH SIDES

Item	Unit	Unit Price	Quantity	Total	Comments
Hot Mix HL-1 (45mm Depth)	t	\$75	1124	\$210,750	multiplier of 2.5
Asphalt (55mm HDBC, 50mm HL-8)	t	\$60	2620	\$393,000	multiplier of 2.5
Granular A	t	\$16	3936	\$151,142	multiplier of 2.4
Granular B	t	\$14	14650	\$410,200	multiplier of 2.0
Curb and Gutter	m	\$50	4000	\$200,000	4 runs
Concrete Sidewalk	m ²	\$50	3000	\$150,000	1.5m wide x 2 runs
Subdrain	m	\$25	4000	\$100,000	4 runs
Light Stands	each	\$8,000	40	\$320,000	every 50m x 2 rows = 40
Sub-Total				\$1,935,092	
Minor Items		35%		\$677,282	
Grand Total (per km) for both sides				\$2,612,375	

MUNICIPAL ROADS FOR AT GRADE SECTION - UNIT COST (KM) FOR TWO-LANE (ONE-WAY) SERVICE ROAD

Item	Unit	Unit Price	Quantity	Total	Comments
Hot Mix HL-1 (45mm Depth)	t	\$75	562	\$105,375	multiplier of 2.5
Asphalt (55mm HDBC, 50mm HL-8)	t	\$60	1310	\$196,500	multiplier of 2.5
Granular A	t	\$16	1968	\$75,571	multiplier of 2.4
Granular B	t	\$14	7325	\$205,100	multiplier of 2.0
Curb and Gutter	m	\$50	2000	\$100,000	2 runs
Concrete Sidewalk	m ²	\$50	1500	\$75,000	1.5m wide x 1 run
Subdrain	m	\$25	2000	\$50,000	2 runs
Light Stands	each	\$8,000	20	\$160,000	every 50m x 1 row = 20
Sub-Total				\$967,546	
Minor Items		35%		\$338,641	
Grand Total (per km)				\$1,306,187	

MUNICIPAL ROADS FOR AT GRADE SECTION - UNIT COST (KM) FOR FOUR-LANE (TWO-WAY) SERVICE ROAD						
Item	Unit	Unit Price	Quantity	Total	Comments	
Hot Mix HL-1 (45mm Depth)	t	\$75	944	\$177,000	multiplier of 2.5	
Asphalt (55mm HDBC, 50mm HL-8)	t	\$60	2282	\$342,300	multiplier of 2.5	
Granular A	t	\$16	3594	\$138,010	multiplier of 2.4	
Granular B	t	\$14	12861	\$360,108	multiplier of 2.0	
Curb and Gutter	m	\$50	4000	\$200,000	4 runs	
Concrete Sidewalk	m ²	\$50	1500	\$75,000	1.5m wide x 1 run	
Subdrain	m	\$25	3000	\$75,000	3 runs	
Light Stands	each	\$8,000	20	\$160,000	every 50m x 1 row = 20	
Sub-Total				\$1,527,418		
Minor Items		35%		\$534,596		
Grand Total (per km)				\$2,062,014		

INTERCHANGE RAMPS FOR ABOVE-GRADE SECTION (TWO LANES) - UNIT COST

Item	Unit	Unit Price	Quantity	Total	Comments
Hot Mix HL-1 (45mm Depth)	t	\$75	495	\$92,813	multiplier of 2.5
Asphalt (55mm HDBC, 50mm HL-8)	t	\$60	1156	\$173,400	multiplier of 2.5
Granular A	t	\$16	2246	\$86,246	multiplier of 2.4
Granular B	t	\$14	7962	\$222,936	multiplier of 2.0
Earth Borrow	m ³	\$7	110000	\$770,000	
Sub-Total				\$1,345,395	
Minor Items		35%		\$470,888	
Grand Total (per km)				\$1,816,283	

INTERCHANGE RAMPS FOR ABOVE-GRADE SECTION (ONE LANE) - UNIT COST					
Item	Unit	Unit Price	Quantity	Total	Comments
Hot Mix HL-1 (45mm Depth)	t	\$75	371	\$69,563	multiplier of 2.5
Asphalt (55mm HDBC, 50mm HL-8)	t	\$60	866	\$129,900	multiplier of 2.5
Granular A	t	\$16	1802	\$69,197	multiplier of 2.4
Granular B	t	\$14	5504	\$154,112	multiplier of 2.0
Earth Borrow	m ³	\$7	90000	\$630,000	
Sub-Total				\$1,052,771	
Minor Items		35%		\$368,470	
Grand Total (per km)				\$1,421,241	

INTERCHANGE RAMPS FOR AT-GRADE SECTION (ONE LANE) - UNIT COST

Item	Unit	Unit Price	Quantity	Total	Comments
Hot Mix HL-1 (45mm Depth)	t	\$75	371	\$69,563	multiplier of 2.5
Asphalt (55mm HDBC, 50mm HL-8)	t	\$60	866	\$129,900	multiplier of 2.5
Granular A	t	\$16	1802	\$69,197	multiplier of 2.4
Granular B	t	\$14	5504	\$154,112	multiplier of 2.0
Sub-Total				\$422,771	
Minor Items		35%		\$147,970	
Grand Total (per km)				\$570,741	