

Brighton Bypass Northern Section
Comparative crude estimate of costs of various routes suggested by TAC and examined by DIER - August 2010 - Rev 0

Basic parameters		Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8
Total length (incl. i/changes)	(km)	2.8	2.0	2.0	3.8	3.5	2.4	2.0	2.5
Bridge length	(km)	0.6	0.4	0.5	0.4	0.5	0.3	0.4	0.4
Road length	(km)	2.2	1.6	1.5	3.4	3.0	2.1	1.6	2.1
Sealed width	(m)	24	24	24	24	24	24	24	24

Construction cost

Excavation including rock	Qty (m3)	123,000	300,000	238,000	404,000	283,000	271,000	217,000	666,000
	Cost	2,091,000	5,100,000	4,046,000	6,868,000	4,811,000	4,607,000	3,689,000	11,322,000
Embankment construction	Qty (m3)	510,000	298,000	420,000	868,000	392,000	320,000	406,000	415,000
	Cost	4,080,000	2,384,000	3,360,000	6,944,000	3,136,000	2,560,000	3,248,000	3,320,000
Import shortfall/export surplus	Cost	5,805,000	14,000	2,730,000	6,960,000	1,635,000	735,000	2,835,000	1,757,000
Pavement	Qty (m3)	36,300	34,000	35,000	50,300	42,300	35,000	33,200	36,500
	Cost	1,815,000	1,700,000	1,750,000	2,515,000	2,115,000	1,750,000	1,660,000	1,825,000
Seal	Qty (m2)	60,500	56,667	58,333	83,833	70,500	58,333	55,333	60,833
	Cost	726,000	680,000	700,000	1,006,000	846,000	700,000	664,000	730,000
Estimated ramp length	Qty (m)	500	-	200	2,230	-	500	-	-
	Cost	600,000	-	240,000	2,676,000	-	600,000	-	-
Estimated minor road length	Qty (m)	-	800	-	2,000	450	-	500	1,200
	Cost	-	1,600,000	-	4,000,000	900,000	-	1,000,000	2,400,000
Drainage and services	Qty (m)	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
*common allowance across all	Cost	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Barriers and linemarking	Qty (km)	2.8	2.0	2.0	3.8	3.5	2.4	2.0	2.5
*route length	Cost	1,400	1,000	1,000	1,900	1,750	1,200	1,000	1,250
Noise walls	Qty (m)	500	-	200	600	200	1,200	-	900
	Cost	1,000,000	-	400,000	1,200,000	400,000	2,400,000	-	1,800,000
Bridges	Qty (No.)	6	5	3	8	7	4	3	5
	Cost	3,000,000	2,500,000	1,500,000	4,000,000	3,500,000	2,000,000	1,500,000	2,500,000
Bridge deck area	Qty (m2)	15,000	9,640	11,430	8,670	12,450	6,510	9,520	9,180
	Cost	52,500,000	33,740,000	40,005,000	30,345,000	43,575,000	22,785,000	33,320,000	32,130,000
Reinstate existing route	Qty (km)	2.4	1.6	1.7	3.4	2.3	2.0	1.4	2.0
	Cost	12,000,000	8,000,000	8,500,000	17,000,000	11,500,000	10,000,000	7,000,000	10,000,000
Rail relocation	Qty (m)	600	-	750	600	-	-	-	-
	Cost	900,000	-	1,125,000	900,000	-	-	-	-
Less cost of Jordan Bridge and approaches	Cost	-	16,000,000	-	16,000,000	-	16,000,000	-	16,000,000
Plus margin paid on deleted work	Cost	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000
Subtotal		69,918,400	45,019,000	51,907,000	71,200,900	59,604,750	35,688,200	42,557,000	53,185,250

Design, surveys, acquisition

Surveys, approvals	Qty (km)	2.8	2.0	2.0	3.8	3.5	2.4	2.0	2.5
	Cost	420,000	300,000	300,000	570,000	525,000	360,000	300,000	375,000
Aboriginal archaeology	Qty (km)	2.8	2.0	2.0	3.8	3.5	2.4	2.0	2.5
*does not consider sensitivity	Cost	1,120,000	800,000	800,000	1,520,000	1,400,000	960,000	800,000	1,000,000
Design (incl ECI process)	Cost	6,991,840	4,501,900	5,190,700	7,120,090	5,960,475	3,568,820	4,255,700	5,318,525
Margin and overheads	Cost	17,479,600	11,254,750	12,976,750	17,800,225	14,901,188	8,922,050	10,639,250	13,296,313
Property acquisition	Qty (No.)	6	2	8	15	5	30	4	9
	Cost	2,400,000	800,000	3,200,000	6,000,000	2,000,000	12,000,000	1,600,000	3,600,000
Subtotal		28,411,440	17,656,650	22,467,450	33,010,315	24,786,663	25,810,870	17,594,950	23,589,838
Delay for design, approvals, tendering - years		2.0	2.0	2.0	2.0	2.0	2.0	1.8	1.8
	6% per year								
or total of	12%	12%	12%	12%	12%	12%	12%	11%	11%
Subtotal		12,153,568	7,746,710	9,192,682	12,880,506	10,430,779	7,601,285	7,434,781	9,489,401
Total		110,483,408	70,422,360	83,567,132	117,091,721	94,822,191	69,100,355	67,586,731	86,264,488

Contingency for errors in quantities and rates, additional infrastructure and unknowns	20%	22,096,682	14,084,472	16,713,426	23,418,344	18,964,438	13,820,071	13,517,346	17,252,898
Grand total		132,580,090	84,506,832	100,280,558	140,510,065	113,786,629	82,920,426	81,104,077	103,517,386

Rates and parameters

	Rate	Unit
Excavation including rock	17	/m3
Embankment construction	8	/m3
Dispose of excess	7	/m3
Import material	15	/m3
Pavement	50	/m2 based on 600 deep
Seal	12	/m2 based on mix of asphalt and spray seal
Ramps	1,200	/m
Minor roads	2,000	/m
Drainage and services	200	/km of pipe/drain
Barriers and linemarking	500	/m (3 barriers and 6 lines)
Noise walls	2,000	/m (approximately 4 m high)
Bridges	500,000	each establishment
Bridge deck area	3,500	/m2
Rail relocation	1,500	/m
Reinstatement	5,000,000	/km
Surveys	150,000	/km
Aboriginal archaeology	400,000	/km in floodplain areas
Design	10%	of contract value
Contractor margin and management	25%	of construction cost
Property acquisition	400,000	/per property

Assumptions and qualifications

Lower quantities result in less competitive rates than received on the Brighton Bypass:
 Construction in all areas is advanced to the point of needing reinstatement
 This estimate is based on basic concept design only
 It may only be accurate to approximately +50/-30%
 It does however provide a comparative order of cost
 Routes across TASI10757 include a further 100m long bridge to cross the levee
 All routes would impact known or expected Aboriginal heritage sites:
 Some routes would impact known historic heritage sites: