

## **APPENDIX 33**

Estimated costs of creek capacity upgrades, public bridge upgrades and creek rehabilitation (Part B Works)

## Cost Summary

**Cost Summary**  
Upper Brown Hill Creek channel widening works

Revision 7  
Date 24/07/2014



		ZONE 1	Zone 1A	Forestville Reserve	ZONE 2	Orphanage Park	ZONE 3	ZONE 5A	ZONE 5B	ZONE 6A	ZONE 6B	Private bridge replacements	TOTAL	
		ANZAC - Leah	Leah - Ethel	Ethel - DPTI Culvert	Victoria - Mitchell	Orphanage Park (4200 x 1200 RCBC Bypass Culvert)	Malcolm - Douglas	Cross - Hampton	Devonshire - Kent	Ayr - Paisley	Paisley - Muggs Hill Road	2 in Hawthorn and 2 in Torrens park		
<b>A</b>	<b>CONTRACT WORKS COSTS</b>													
1	Preliminaries	\$285,500	\$81,571	\$40,786	\$263,967	\$138,680	\$332,495	\$169,546	\$72,662	\$279,056	\$11,250	\$165,000	\$1,840,514	
2	Construction access works	\$26,400	\$10,000	\$17,200	\$60,600	na	\$46,072	\$57,760	\$24,200	\$40,600	\$0	incl	\$282,832	
3	Dewatering works	\$25,000	\$0	\$10,000	\$20,000	incl elsewhere	\$30,000	\$15,000	\$15,000	\$20,000	\$0	incl	\$135,000	
4	Environmental and protection works	\$18,000	\$7,800	\$11,000	\$37,800	incl elsewhere	\$28,000	\$35,200	\$26,200	\$43,800	\$0	incl	\$207,800	
5	Site Clearance	\$151,093	\$22,800	\$30,811	\$100,704	na	\$93,260	\$72,954	\$78,913	\$135,723	\$0	incl	\$686,257	
6	Excavation / filling works	\$304,244	\$0	\$75,079	\$124,767	na	\$247,607	\$99,662	\$14,420	\$156,774	\$0	incl	\$1,022,552	
7	Creek floor treatments	\$32,400	\$0	\$5,400	\$10,800	na	\$10,800	\$10,800	\$10,800	\$10,800	\$0	incl	\$91,800	
8	Creek bank batter treatments	\$33,500	\$10,000	\$7,500	\$19,000	na	\$50,500	\$41,500	\$4,000	\$166,000	\$0	incl	\$332,000	
9	Creek wall ( vertical or near vertical) treatments	\$1,190,296	\$0	\$150,702	\$350,275	na	\$761,969	\$319,441	\$47,000	\$469,177	\$75,000	incl	\$3,363,860	
10	Creek bund walls ( upper level) treatments	\$12,000	\$91,800	\$20,000	\$58,600	na	\$9,140	\$0	\$35,000	\$68,250	\$0	incl	\$294,790	
11	Pedestrian Bridges	\$0	\$0	\$2,400	\$43,200	na	\$62,400	\$45,600	\$14,400	\$40,800	\$0	na	\$208,800	
12	Reinstatement works	\$150,700	\$8,000	\$53,700	\$29,000	\$57,300	\$90,400	\$66,740	\$69,900	\$91,550	\$0	incl	\$617,290	
13	Vehicle Bridge replacements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,100,000	\$1,100,000	
14	Culverts	\$0	\$0	\$0	\$0	\$1,014,974	\$0	\$0	\$0	\$0	\$0	\$0	\$1,014,974	
15	Inlet/ outlet structures	\$0	\$0	\$0	\$0	\$102,000	\$0	\$0	\$0	\$0	\$0	\$0	\$102,000	
	<b>TOTAL CONSTRUCTION DIRECT COSTS</b>	<b>\$2,229,133</b>	<b>\$231,971</b>	<b>\$424,577</b>	<b>\$1,118,713</b>	<b>\$1,312,954</b>	<b>\$1,762,643</b>	<b>\$934,202</b>	<b>\$412,495</b>	<b>\$1,522,529</b>	<b>\$86,250</b>	<b>\$1,265,000</b>	<b>\$11,300,469</b>	
	<b>Other</b>													
16	Allowance for off site Overhead and profit	10.0%	\$222,913	\$23,197	\$42,458	\$111,871	\$131,295	\$176,264	\$93,420	\$41,249	\$152,253	\$8,625	\$126,500	\$1,130,047
17	Contractor Risk and opportunity allowance	5.0%	\$111,457	\$11,599	\$21,229	\$55,936	\$0	\$88,132	\$46,710	\$20,625	\$76,126	\$4,313	\$63,250	\$499,376
	<b>TOTAL CONSTRUCTION COST</b>	<b>\$2,563,503</b>	<b>\$266,767</b>	<b>\$488,264</b>	<b>\$1,286,520</b>	<b>\$1,444,249</b>	<b>\$2,027,039</b>	<b>\$1,074,333</b>	<b>\$474,369</b>	<b>\$1,750,909</b>	<b>\$99,188</b>	<b>\$1,454,750</b>	<b>\$12,929,891</b>	
<b>B</b>	<b>CLIENT COSTS</b>													
	<b>Scoping and development phase</b>													
1	Project management, planning and design	9.0%	\$230,715	\$24,009	\$43,944	\$115,787	\$129,982	\$182,434	\$96,690	\$42,693	\$157,582	\$8,927	\$130,928	\$1,163,690
	<b>Implementation phase</b>													
2	Project and contract management	6.3%	\$160,219	\$16,673	\$30,517	\$80,407	\$90,266	\$126,690	\$67,146	\$29,648	\$109,432	\$6,199	\$90,922	\$808,118
3	Community engagement and liaison	3.0%	\$76,905	\$8,003	\$14,648	\$38,596	\$43,327	\$60,811	\$32,230	\$14,231	\$52,527	\$2,976	\$43,643	\$387,897
	<b>Property costs / works</b>													
4	Property Compensation	EXCLUDED												EXCLUDED
	<b>Services relocations</b>													
5	Allowance for existing service modifications/ relocations	2.0%	\$51,270	\$5,335	\$9,765	\$25,730	\$28,885	\$40,541	\$21,487	\$9,487	\$35,018	\$1,984	\$29,095	\$258,598
	<b>TOTAL CLIENT COSTS</b>	<b>\$519,109</b>	<b>\$54,020</b>	<b>\$98,873</b>	<b>\$260,520</b>	<b>\$292,460</b>	<b>\$410,475</b>	<b>\$217,552</b>	<b>\$96,060</b>	<b>\$354,559</b>	<b>\$20,085</b>	<b>\$294,587</b>	<b>\$2,618,303</b>	
<b>C</b>	<b>CONTINGENCY</b>													
1	Construction costs	15.0%	\$384,526	\$40,015	\$73,240	\$192,978	\$216,637	\$304,056	\$161,150	\$71,155	\$262,636	\$14,878	\$218,213	\$1,939,484
2	Client costs	10.0%	\$46,784	\$4,869	\$8,911	\$23,479	\$26,358	\$36,993	\$19,607	\$8,657	\$31,954	\$1,810	\$26,549	\$235,971
3	Property Costs													
4	Service relocations	35.0%	\$17,945	\$1,867	\$3,418	\$9,006	\$10,110	\$14,189	\$7,520	\$3,321	\$12,256	\$694	\$10,183	\$90,509
	<b>TOTAL CLIENT COSTS</b>	<b>\$449,254</b>	<b>\$46,751</b>	<b>\$85,568</b>	<b>\$225,463</b>	<b>\$253,105</b>	<b>\$355,239</b>	<b>\$188,277</b>	<b>\$83,133</b>	<b>\$306,847</b>	<b>\$17,383</b>	<b>\$254,945</b>	<b>\$2,265,963</b>	
<b>D</b>	<b>TOTAL</b>													
	<b>TOTAL GST EXC</b>	<b>\$3,531,867</b>	<b>\$367,539</b>	<b>\$672,706</b>	<b>\$1,772,503</b>	<b>\$1,989,815</b>	<b>\$2,792,753</b>	<b>\$1,480,162</b>	<b>\$653,562</b>	<b>\$2,412,314</b>	<b>\$136,656</b>	<b>\$2,004,282</b>	<b>\$17,814,157</b>	

# Zone 1

Brown Hill Keswick Creek Stormwater Project

CONCEPT CONSTRUCTION ESTIMATE



## BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

ZONE 1, ANZAC HWY -LEAH

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
		UPGRADE LENGTH =	478			
<b>1</b>	<input type="checkbox"/> <b>Construction access works</b>					
1	Mobilisation, establishment, insurances and fees	item	1	\$92,000	\$64,400	
2	Run site, including accom, Onsite OH and project supervision	Item	1	\$200,250	\$140,175	
3	Traffic, pedestrian and resident management	Item	1	\$42,378	\$29,665	
4	Existing service relocations and protection	item	1	\$7,990	\$5,593	
5	Survey Setout and as built	item	1	\$46,800	\$32,760	
7	Tidy up and demobilisation	item	1	\$18,439	\$12,908	
8	Other					
					<b>000000</b>	
<input type="checkbox"/>	<b>Construction access works</b>					
1	Access Ramp from public roads	No	3	\$5,000.00	\$15,000	
2	Access Ramp from/ through private property	No	1	\$6,000.00	\$6,000	e/o
3	Stockpile/ storage areas	item	1	\$3,000.00	\$3,000	Preparation, access, baseline enviro testing etc
4	Longitudinal construction access	item	1	\$0.00	\$0	Endeavour to use creek floor as much as practically possible.
5	Temporary fencing	m	200	\$12.00	\$2,400	Parallel at top of creek embankments to prevent public/ landowner access in construction worksite. Assume droppers @ 3m centres, top and bottom wire and barrier mesh
6	Other					
					<b>000000</b>	
<b>3</b>	<b>Dewatering works</b>					
1	Localised dewatering	item	1	\$20,000.00	\$20,000	
2	Low flow diversions	item	1	\$5,000.00	\$5,000	Options include coffer dams, pumping, piped. French/agi drains or open channels
3	Rectification of works post storm/ large flow events					Refer Risk and opportunity
4	Other					
					<b>000000</b>	
<input type="checkbox"/>	<b>Environmental and protection works</b>					
1	Construction/setup of silt control devices and erosion protection	item	1	\$6,000.00	\$6,000	
2	Maintenance of control devices	item	1	\$3,000.00	\$3,000	
3	Private property dilapidation reports	No	6	\$1,200.00	\$7,200	
4	Significant tree construction protection works ( root zones)	No	1	\$1,800.00	\$1,800	
5	Other					
					<b>100000</b>	
<input type="checkbox"/>	<b>Vegetation clearance</b>					
1	Vegetation clearance light, (over nominal 10m width)	LM	320	\$33.75	\$10,800	defined as clearance of vege up to 50mm trunk diameter using large handheld brush cutters etc, Leah - end
2	Vegetation clearance Heavy, (over nominal 10m width)	LM	137	\$189.00	\$25,893	defined as works requiring chainsaws and earthmoving plant required to drag timber out, third - end
3	Tree removal medium, 300-1200	No	44	\$2,100.00	\$92,400	
4	Hard scaping / fencing removal	item	1	\$5,000.00	\$5,000	
5	Demolition of or cutting back of existing concrete/ rock walls	item	1	\$12,000.00	\$12,000	
6	Landowner services removals/ protection	item	1	\$5,000.00	\$5,000	
7	Other					
					<b>11003</b>	

# Zone 1

Brown Hill Keswick Creek Stormwater Project

CONCEPT CONSTRUCTION ESTIMATE



## BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

### ZONE 1, ANZAC HWY -LEAH

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES	
<b>Excavation works</b>							
1	Widen / layback batter one side	m3	3381	\$79.25	\$267,944	Retain existing creek rocks onsite for walls/ floor treatments, spoil to site stockpile, tested then to dump. To achieve floor width min. of 4 m, assume 2m wide strip x 2 h +50% for working space Including localised cut and fill top remove humps and hollows. Subject to longitudinal survey Excavation and backfilling with gravel/ cobbles etc where supporting structures. assume 5% of grading area	
2	Grading of Creek floor	m2	2400	\$12.00	\$28,800		
3	Unsuitable subgrade removal	m3	60.0	\$125.00	\$7,500		
4	Other						
<b>300000</b>							
<b>Creek floor treatments</b>							
1	Do nothing ( other than light grade, refer 6.4 above)					Suspect that this will be the majority of the upgrade assume 6m immediately upstream of all bridges	
2	Reno mattress's	m2	216	\$150.00	\$32,400		
3	Other						
<b>30000</b>							
<b>Creek bank batter treatments</b>							
1	Respread topsoil and Hydro seed - grass	m2	700	\$5.00	\$3,500	token	
2	remedial works to existing batter treatments	m2	300	\$100.00	\$30,000	Other than Vegetation clearance, perhaps stabilisation of banks	
3	Other						
<b>33000</b>							
<b>Gabions and wall treatments</b>							
1	Gabions	m	685	\$1,386.00	\$949,410	All include detail excavation footing treatments, backfill, and assume wall height of 2.4m on CTQR base, allow 3 x 1m3 units high, base keyed in approx 600mm, may require an extra gabion at the base, risk of this is an e/o \$280K Assume 0.18 thick RC on 1.5 x 0.3 thick base, wall 2.5m high	
2	Reinforced Concrete, (RC)	m	102	\$2,093.00	\$213,486		
3	Special matching around existing trees	No	1	\$2,400.00	\$2,400		
4	remedial works to existing walls	item	1	\$25,000.00	\$25,000		plug
5	Underpinning / stabilisation of walls	m3	0	\$1,500.00	\$0		
<b>110000</b>							
<b>Bank earth bund formation</b>							
10	Top of bank earth bund formation/ trimming	LM	0	\$50.00	\$0	All include footing treatments and assume wall height of 2.4m On RC base, assume 200 thk x 600mm high reinforced core filled on 0.45 x 0.3 thick RC footing, difficult access between Ethel and Charles Adjacent ANZAC Highway	
2	Besser block walls with capping	LM	0	\$540.00	\$0		
3	Reconstruct end of culvert roof	Item	1	\$12,000.00	\$12,000		
<b>10000</b>							
<b>Private Bridges</b>							
11	Removal/ demolition	No	0	\$2,400.00	\$0	Old Unley swim centre abandoned bridge	
<b>0</b>							
<b>Boundary fencing and services</b>							
1	Boundary fencing modifications	No	16	\$500.00	\$8,000	Perpendicular modifications, plug qty assumed qty, say tube stock @ 2/m2 and mulching Paths and the like, Wilberforce walk, assume 3 wide footpath and adjacent fence Staked 45 litre size assumed qty allowance for where cross creek or in embankments,	
2	Property landscape reinstatement	m2	800	\$12.00	\$9,600		
3	Property hard scaping reinstatement	m2	660	\$185.00	\$122,100		
4	Advanced trees	No	10	\$150.00	\$1,500		
5	Adjustments to, headwalls and scour protection for existing stormwater culverts discharging into the creek	No	3	\$1,500.00	\$4,500		
6	Services	item	1	\$5,000.00	\$5,000		

# Zone 1

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

#### ZONE 1, ANZAC HWY -LEAH

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
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1 000 000

TOTAL CONSTRUCTION DIRECT COSTS					1 133 000	
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13	Allowance for off site Overhead and profit	%	10.00%	\$2,229,133	\$222,913	
14	Contractor Risk and opportunity allowance	%	5.00%	\$2,229,133	\$111,457	Limited to inherent ( broadly measurable or known unknowns) risks

TOTAL CONSTRUCTION COST					3 003 000	
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The construction methodology is i) to provide minimal disruption to the existing residents ( access) and limit if possible access to public road networks. ii) to undertake the works outside the months of high rainfall so as to minimise contractor flood risks, iii) to limit where possible the works to only one side of the creek . iv) to minimise interference with properties at top of bank level as much as practically possible. v) to utilise the creek floor for the majority of construction access.

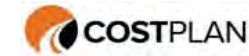
**NOTES**

- 1 Excludes GST
- 2 Excludes escalation
- 3 Excludes Clients, community liaison, Project management, Arbourist and design costs
- 4 Excludes vehicular Bridge upgrade works
- 5 Excludes clients contingency

WALL SCHEDULE		
RC Concrete	m	102
Stone, dry stacked	m	0
Gabion	m	685
Post and panel	m	0
<b>TOTAL</b>		887

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



## BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

## ZONE 1A, LEAH - EHTEL

REVISION  
ISSUE DATE7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
		UPGRADE LENGTH =	187			
1	□□□□ □□□□□					
1	Mobilisation, establishment, insurances and fees	item	0	\$92,000.00	\$18,400	
2	Run site, including accom, Onsite OH and project supervision	Item	0	\$200,250.00	\$40,050	
3	Traffic, pedestrian and resident management	Item	0	\$42,378.00	\$8,476	
4	Existing service relocations and protection	item	0	\$7,990.00	\$1,598	
5	Survey Setout and as builts	item	0	\$46,800.00	\$9,360	
7	Tidy up and demobilisation	item	0	\$18,439.36	\$3,688	
8	Other					
					□□1□□1	
□	<b>Construction access works</b>					
1	Access Ramp from public roads	No	2	\$5,000.00	\$10,000	
6	Other					
					□10,000	
3	<b>Dewatering works</b>					
3	Rectification of works post storm/ large flow events					Refer Risk and opportunity
4	Other					
					□0	
□	<b>Environmental and protection works</b>					
1	Construction/setup of silt control devices and erosion protection	item	1	\$2,000.00	\$2,000	
2	Maintenance of control devices	item	1	\$1,000.00	\$1,000	
3	Private property dilapidation reports	No	4	\$1,200.00	\$4,800	
4	Significant tree construction protection works ( root zones)	No	0	\$1,800.00	\$0	
5	Other					
					□□□00	
□	□□□□ □□□□□□					
1	Vegetation clearance light, (over nominal 10m width)	LM	320	\$33.75	\$10,800	defined as clearance of vege up to 100mm trunk diameter using large handheld brush cutters etc, Leah -third
5	Demolition of or cutting back of existing concrete/ rock walls	item	1	\$12,000.00	\$12,000	
7	Other					
					□□□□00	
□	<b>Excavation works</b>					
4	Other					Retain existing creek rocks onsite for walls/ floor treatments, spoil to site stockpile, tested then to dump.
					□0	
□	<b>Creek floor treatments</b>					
1	Do nothing ( other than light grade, refer 6.4 above)					Suspect that this will be the majority of the upgrade
2	Reno mattress's	m2	0	\$150.00	\$0	assume 6m immediately upstream of all bridges
3	Other					
					□0	
□	<b>Creek bank batter treatments</b>					
1	Respread topsoil and Hydro seed - grass	m2	0	\$5.00	\$0	token
2	remedial works to existing batter treatments	m2	100	\$100.00	\$10,000	Other than Vegetation clearance, perhaps stabilisation of banks
3	Other					



## Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



## BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

## ZONE 1B, FORESTVILLE RESERVE- ETHEL - FORESTVILLE RESERVE - DPTI CULVERT

REVISION

7

ISSUE DATE

25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
		UPGRADE LENGTH =	195			
<b>1</b>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					
1	Mobilisation, establishment, insurances and fees	item	0	\$92,000.00	\$9,200	
2	Run site, including accom, Onsite OH and project supervision	item	0	\$200,250.00	\$20,025	
3	Traffic, pedestrian and resident management	item	0	\$42,378.00	\$4,238	
4	Existing service relocations and protection	item	0	\$7,990.00	\$799	
5	Survey Setout and as built	item	0	\$46,800.00	\$4,680	
7	Tidy up and demobilisation	item	0	\$18,439.36	\$1,844	
8	Other					
					<input type="checkbox"/> 0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/>	<b>Construction access works</b>					
1	Access Ramp from public roads	No	1	\$5,000.00	\$5,000	
3	Stockpile/ storage areas	item	1	\$5,000.00	\$5,000	Preparation, access, baseline enviro testing etc
5	Temporary fencing	m	600	\$12.00	\$7,200	Parallel at top of creek embankments to prevent public/ landowner access in construction worksite. Assume droppers @ 3m centres, top and bottom wire and barrier mesh
6	Other					
					<input checked="" type="checkbox"/> 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<b>3</b>	<b>Dewatering works</b>					
1	Localised dewatering	item	1	\$5,000.00	\$5,000	
2	Low flow diversions	item	1	\$5,000.00	\$5,000	Options include coffer dams, pumping, piped. French/agi drains or open channels
3	Rectification of works post storm/ large flow events					Refer Risk and opportunity
4	Other					
					<input checked="" type="checkbox"/> 10 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/>	<b>Environmental and protection works</b>					
1	Construction/setup of silt control devices and erosion protection	item	1	\$5,000.00	\$5,000	
2	Maintenance of control devices	item	1	\$3,000.00	\$3,000	
3	Property dilapidation reports	No	1	\$1,200.00	\$1,200	swim centre
4	Significant tree construction protection works ( root zones)	No	1	\$1,800.00	\$1,800	plug
5	Other					
					<input checked="" type="checkbox"/> 11 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					
1	Vegetation clearance light, (over nominal 10m width)	LM	107	\$33.75	\$3,611	defined as clearance of vege up to 50mm trunk diameter using large handheld brush cutters etc, Leah -third
3	Tree removal medium, 300-1200	No	12	\$2,100.00	\$25,200	
4	Hard scaping / fencing removal	item	1	\$2,000.00	\$2,000	
7	Other					
					<input checked="" type="checkbox"/> 30 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/>	<b>Excavation works</b>					Retain existing creek rocks onsite for walls/ floor treatments, spoil to site stockpile, tested then to dump.
1	Widen / layback batter one side	m3	642	\$79.25	\$50,879	To achieve floor width min. of 4 m, assume 2m wide strip x 2 h +50% for working space
2	Grading of Creek floor	m2	1600	\$12.00	\$19,200	Including localised cut and fill top remove humps and hollows. Subject to longitudinal survey



Zone 1B

3	Unsuitable subgrade removal	m3	40.0	\$125.00	\$5,000	Excavation and backfilling with gravel/ cobbles etc where supporting structures. assume 5% of grading area
4	Other					
						0000
<b>□ Creek floor treatments</b>						
1	Do nothing ( other than light grade, refer 6.4 above)					Suspect that this will be the majority of the upgrade
2	Reno mattress's	m2	36	\$150.00	\$5,400	assume 6m immediately upstream of all bridges
3	Other					
						0000
<b>□ Creek bank batter treatments</b>						
1	Respread topsoil and Hydro seed - grass	m2	900	\$5.00	\$4,500	token
2	remedial works to existing batter treatments	m2	200	\$15.00	\$3,000	Other than Vegetation clearance, perhaps stabilisation of banks
3	Other					
						0000
<b>□ Gabions</b>						
1	Gabions	m	107	\$1,386.00	\$148,302	All include detail excavation footing treatments, backfill, and assume wall height of 2.4m on CTQR base, allow 3 x 1m3 units high, base keyed in approx 600mm, may require an extra gabion at the base, risk of this is an e/o \$40K
3	Special matching around existing trees	No	1	\$2,400.00	\$2,400	
						1000
<b>10 □ Top of bank earth bund formation/ trimming</b>						
1	Top of bank earth bund formation/ trimming	LM	400	\$50.00	\$20,000	All include footing treatments and assume wall height of 2.4m Forestville reserve
						0000
<b>11 Private Bridges</b>						
1	Removal/ demolition	No	1	\$2,400.00	\$2,400	Old Unley swim centre abandoned bridge
						0000
<b>1 □ Property landscape reinstatement</b>						
2	Property landscape reinstatement	m2	600	\$12.00	\$7,200	assumed qty, say tube stock @ 2/m2 and mulching
3	Property hard scaping reinstatement	m2	200	\$185.00	\$37,000	Paths and the like, Wilberforce walk, assume 3 wide footpath and adjacent fence
4	Advanced trees	No	10	\$150.00	\$1,500	Staked 45 litre size
5	Adjustments to, headwalls and scour protection for existing stormwater culverts discharging into the creek	No	2	\$1,500.00	\$3,000	assumed qty
6	Services	item	1	\$5,000.00	\$5,000	allowance for where cross creek or in embankments,
						3000
<b>TOTAL CONSTRUCTION DIRECT COSTS</b>						<b>000000</b>
<b>□ Allowance for off site Overhead and profit</b>						
13	Allowance for off site Overhead and profit	%	10.00%	\$424,577.49	\$42,458	
<b>□ Contractor Risk and opportunity allowance</b>						
14	Contractor Risk and opportunity allowance	%	5.00%	\$424,577.49	\$21,229	Limited to inherent ( broadly measurable or known unknowns) risks
<b>TOTAL CONSTRUCTION COST</b>						<b>000000</b>

The construction methodology is i) to provide minimal disruption to the existing residents ( access) and limit if possible access to public road networks. ii) to undertake the works outside the months of high rainfall so as to minimise contractor flood risks, iii) to limit where possible the works to only one side of the creek . iv) to minimise interference with properties at top of bank level as much as practically possible. v) to utilise the creek floor for the majority of construction access.

NOTES

- 1 Excludes GST
- 2 Excludes escalation
- 3 Excludes Clients, community liaison, Project management, Arbourist and design costs
- 4 Excludes vehicular Bridge upgrade works
- 5 Excludes clients contingency

# Zone 2

Brown Hill Keswick Creek Stormwater Project

CONCEPT CONSTRUCTION ESTIMATE



## BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

### ZONE 2, VICTORIA STREET - MITCHELL STREET

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
		UPGRADE LENGTH =	206	206 LM of wall works, 554m of section length		
<b>1</b>	<input type="checkbox"/>					
1	Mobilisation, establishment, insurances and fees	item	1	\$68,000.00	\$68,000	
2	Run site, including accom, Onsite OH and project supervision	Item	1	\$99,900.00	\$99,900	
3	Traffic, pedestrian and resident management	Item	1	\$49,978.00	\$49,978	
4	Existing service relocations and protection	item	1	\$7,990.00	\$7,990	
5	Survey Setout and as built	item	1	\$31,200.00	\$31,200	
7	Tidy up and demobilisation	item	1	\$6,899.08	\$6,899	
8	Other					
					<b>3</b>	
<input type="checkbox"/>	<b>Construction access works</b>					
1	Access Ramp from public roads	No	2	\$20,000.00	\$40,000	Will need to reconstruct a section of wall around Mitchell St e/o
2	Access Ramp from/ through private property	No	2	\$6,000.00	\$12,000	
3	Stockpile/ storage areas	item	1	\$5,000.00	\$5,000	Preparation, access, baseline enviro testing etc Endeavour to use creek floor as much as practically possible.
4	Longitudinal construction access	item	1	\$0.00	\$0	
5	Temporary fencing	m	300	\$12.00	\$3,600	Parallel at top of creek embankments to prevent public/ landowner access in construction worksite. Assume droppers @ 3m centres, top and bottom wire and barrier mesh
6	Other					
					<b>0</b>	
<b>3</b>	<b>Dewatering works</b>					
1	Localised dewatering	item	1	\$10,000.00	\$10,000	Options include coffer dams, pumping, piped. French/agi drains or open channels Refer Risk and opportunity
2	Low flow diversions	item	1	\$10,000.00	\$10,000	
3	Rectification of works post storm/ large flow events					
4	Other					
					<b>0</b>	
<input type="checkbox"/>	<b>Environmental and protection works</b>					
1	Construction/setup of silt control devices and erosion protection	item	1	\$10,000.00	\$10,000	
2	Maintenance of control devices	item	1	\$5,000.00	\$5,000	
3	Private property dilapidation reports	No	16	\$1,200.00	\$19,200	
4	Significant tree construction protection works ( root zones)	No	2	\$1,800.00	\$3,600	
5	Other					
					<b>3</b>	
<input type="checkbox"/>	<b>Vegetation and site works</b>					
1	Vegetation clearance light, (over nominal 10m width)	LM	161	\$33.75	\$5,434	defined as clearance of vege up to 100mm trunk diameter using large handheld brush cutters etc
2	Vegetation clearance Heavy, (over nominal 10m width)	LM	30	\$189.00	\$5,670	
3	Tree removal medium, 300-1200	No	29	\$2,400.00	\$69,600	defined as works requiring chainsaws and earthmoving plant required to drag timber out
4	Hard scaping / fencing removal	item	1	\$10,000.00	\$10,000	
5	Demolition of or cutting back of existing concrete/ rock walls	item	1	\$5,000.00	\$5,000	
6	Landowner services removals/ protection	item	1	\$5,000.00	\$5,000	
7	Other					

# Zone 2

Brown Hill Keswick Creek Stormwater Project

CONCEPT CONSTRUCTION ESTIMATE



## BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

### ZONE 2, VICTORIA STREET - MITCHELL STREET

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
<b>100000</b>						
<input type="checkbox"/>	<b>Excavation works</b>					Retain existing creek rocks onsite for walls/ floor treatments, spoil to site stockpile, tested then to dump.
1	Widen / layback batter one side	m3	1146	\$79.25	\$90,821	To achieve floor width min. of 4 m, assume 2m wide strip x 2 h +50% for working space
2	Grading of Creek floor	m2	1392	\$12.00	\$16,704	Including localised cut and fill top remove humps and hollows. Subject to longitudinal survey
3	Unsuitable subgrade removal	m3	34.8	\$125.00	\$4,350	Excavation and backfilling with gravel/ cobbles etc where supporting structures. assume 5% of grading area
4	Removal of concrete floor	m	191.0	\$67.50	\$12,893	
<b>100000</b>						
<input type="checkbox"/>	<b>Creek floor treatments</b>					
1	Do nothing ( other than light grade, refer 6.4 above)					Suspect that this will be the majority of the upgrade
2	Reno mattress's	m2	72	\$150.00	\$10,800	assume 6m immediately upstream of all bridges
3	Other					
<b>100000</b>						
<input type="checkbox"/>	<b>Creek bank batter treatments</b>					
1	Respread topsoil and Hydro seed - grass	m2	600	\$5.00	\$3,000	token
2	remedial works to existing batter treatments	m2	800	\$20.00	\$16,000	Other than Vegetation clearance
3	Other					
<b>100000</b>						
<input type="checkbox"/>	<b>Gabions</b>					
1	Gabions	m	84	\$1,386.00	\$116,424	All include detail excavation footing treatments, backfill, and assume wall height of 2.4m on CTQR base, allow 3 x 1m3 units high, base keyed in approx 600mm, may require an extra gabion at the base, risk of this is an e/o \$30K
2	Reinforced Concrete, (RC)	m	107	\$2,093.00	\$223,951	Assume 0.18 thick RC on 1.5 x 0.3 thick base, wall 2.5m high
4	Special matching around existing trees	No	1	\$2,400.00	\$2,400	
6	Underpinning / stabilisation of walls	m3	5	\$1,500.00	\$7,500	
7						
<b>300000</b>						
<b>10</b>	<b>Top of bank earth bund formation/ trimming</b>					All include footing treatments and assume wall height of 2.4m
1	Top of bank earth bund formation/ trimming	LM	200	\$50.00	\$10,000	
2	Remove and replace house decking/ bearers/ to gain creek access	item	1	33600	\$33,600	Replace with new deck
3	Reconstruct end of culvert roof	Item	1	\$15,000.00	\$15,000	Adjacent WEST side of Goodwood road
<b>000000</b>						
<b>11</b>	<b>Private Bridges</b>					
2	Removal/ replace/ raise existing on new sub structure	No	1	\$7,200.00	\$7,200	
3	Removal/ replace with new	No	3	\$12,000.00	\$36,000	
<b>000000</b>						
<b>100</b>	<b>Boundary fencing modifications</b>					
1	Boundary fencing modifications	No	6	\$500.00	\$3,000	Perpendicular modifications, plug qty
2	Property landscape reinstatement	m2	600	\$12.00	\$7,200	assumed qty, say tube stock @ 2/m2 and mulching
3	Property hard scaping reinstatement	m2	100	\$95.00	\$9,500	Paths and the like,
4	Advanced trees	No	12	\$150.00	\$1,800	Staked 45 litre size
5	Adjustments to, headwalls and scour protection for existing stormwater culverts discharging into the creek	No	1	\$1,500.00	\$1,500	assumed qty

# Zone 2

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

#### ZONE 2, VICTORIA STREET - MITCHELL STREET

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
6	Services	item	1	\$6,000.00	\$6,000	allowance for where cross creek or in embankments,
					<b>000000</b>	
<b>TOTAL CONSTRUCTION DIRECT COSTS</b>					<b>111113</b>	
13	Allowance for off site Overhead and profit	%	10.00%	\$1,118,712.83	\$111,871	
14	Contractor Risk and opportunity allowance	%	5.00%	\$1,118,712.83	\$55,936	Limited to inherent ( broadly measurable or known unknowns) risks
<b>TOTAL CONSTRUCTION COST</b>					<b>111113</b>	

The construction methodology is i) to provide minimal disruption to the existing residents ( access) and limit if possible access to public road networks. ii) to undertake the works outside the months of high rainfall so as to

**NOTES**

- 1 Excludes GST
- 2 Excludes escalation
- 3 Excludes Clients, community liaison, Project management, Arbourist and design costs
- 4 Excludes vehicular Bridge upgrade works
- 5 Excludes clients contingency
- 6 For rev 4 assume works limited to major tree clearance and bank works downstream of No 25 Victoria street and section between Mitchell street and Goodwood Road culvert

WALL SCHEDULE		
RC Concrete	m	107
Stone, dry stacked	m	0
Gabion	m	84
Post and panel	m	0
<b>TOTAL</b>		<b>191</b>

Orphanage Park 4.2x1.2



Brownhill Keswick Creek Stormwater Project  
CONSTRUCTION CONCEPT ESTIMATE FOR ORPHANAGE PARK CREEK MODIFICATIONS

OPTION 4, Adjacent Bypass Culvert 4200 x 1200 RCBC

REVISION  
DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
<u>1</u>	<u>Preliminaries</u>					
1	Mobilisation, establishment, insurances and fees	item	1	\$34,000.00	\$34,000	
2	Run site, including accom, Onsite OH and project supervision	item	1	\$50,600.00	\$50,600	
3	Traffic, pedestrian and resident management	item	1	\$36,040.00	\$36,040	
4	Existing service relocations and protection	item	1	\$2,440.00	\$2,440	
5	Survey setout	item	1	\$11,200.00	\$11,200	
	Tidy up and demobilisation	item	1	\$4,400.00	\$4,400	
						13 000
<u>2</u>	<u>Supply and Lay Box culverts</u>					
1	FRPS culvert base units, 4500 wide x250mm thick	m2	891	\$237.50	\$211,613	In situ RC Base, 250mm thick
2	Supply Culvert crown units, 4200 wide x 1200 high	No	163	\$2,385.00	\$388,755	1.22m units
3	Excavate, bed, lay and backfill culverts	LM	198	\$1,836.57	\$363,641	use earth backfill except where road is
3	Allowance for contaminated soils	tonnes	102	\$500.00	\$50,965	Assume 2% of total, could be more
						101 000
<u>3</u>	<u>Structures</u>					
1	Inlet structure and associated apron	item	1	\$50,000.00	\$50,000	
2	Outlet Structure	item	1	\$40,000.00	\$40,000	
3	Creek dewatering	item	1	\$12,000.00	\$12,000	
						10 000
<u>4</u>	<u>Reinstatement</u>					
1	Topsoil/ turf route where through lawned areas	m2	1000	\$4.50	\$4,500	
2	Reinstatement of Road and adjacent footpath	m2	120	\$120.00	\$14,400	
3	Reinstatement of Bocce court and adjacent landscaping	n2	480	\$80.00	\$38,400	
						300
TOTAL CONSTRUCTION DIRECT COSTS					131 000	
<u>5</u>	<u>Allowance for off site Overhead and profit</u>	%	10.00%	\$1,312,953.98	\$131,295.40	
					1 000 000	

# Zone 3

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE ZONE 3, MALCOLM - DOUGLASS ST

REVISION 7  
ISSUE DATE 25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
		UPGRADE LENGTH =	438			
1	<input type="checkbox"/> Mobilisation, establishment, insurances and fees	item	1	\$97,000.00	\$97,000	
2	Run site, including accom, Onsite OH and project supervision	item	1	\$133,500.00	\$133,500	
3	Traffic, pedestrian and resident management	item	1	\$51,398.00	\$51,398	
4	Existing service relocations and protection	item	1	\$7,990.00	\$7,990	
5	Survey setout	item	1	\$31,200.00	\$31,200	
6	Tidy up and demobilisation	item	1	\$11,407.32	\$11,407	
8	Other					
<b>\$33,000</b>						
<input type="checkbox"/> <b>Construction access works</b>						
1	Access Ramp from public roads	No	4	\$5,000.00	\$20,000	
2	Access Ramp from/ through private property	No	2	\$6,000.00	\$12,000	e/o
3	Stockpile/ storage areas	item	1	\$5,000.00	\$5,000	Preparation, access, baseline enviro testing etc
4	Longitudinal construction access	item	1	\$0.00	\$0	Endeavour to use creek floor as much as practically possible.
5	Temporary fencing	m	756	\$12.00	\$9,072	Parallel at top of creek embankments to prevent public/ landowner access in construction
6	Other					worksites. Assume droppers @ 3m centres, top and bottom wire and barrier mesh
<b>\$10,000</b>						
<input type="checkbox"/> <b>Dewatering works</b>						
						Plug costs, ensure works happen in dryer months to reduce risk
1	Localised dewatering	item	1	\$10,000.00	\$10,000	
2	Lowflow diversions	item	1	\$20,000.00	\$20,000	Options include coffer dams, pumping, piped. Frencg/agi drains or open channels
3	Rectification of works post storm/ large flow events					Refer Risk and opportunity
4	Other					
<b>\$30,000</b>						
<input type="checkbox"/> <b>Environmental and protection works</b>						
1	Construction environmental monitoring and management	item	1	\$5,000.00	\$5,000	
2	Construction/setup of silt control devices and erosion protection	item	1	\$10,000.00	\$10,000	
3	Maintenance of control devices	item	1	\$10,000.00	\$10,000	
4	Private property dilapidation reports	No	1	\$1,200.00	\$1,200	
5	Significant tree construction protection works ( root zones)	No	1	\$1,800.00	\$1,800	
6	Other					
<b>\$10,000</b>						
<input type="checkbox"/> <b>Vegetation and site works</b>						
1	Vegetation clearance light, (over nominal 10m width)	LM	318	\$20.00	\$6,360	defined as clearance of vege up to 100mm trunk diameter using large handheld brushcutters etc
2	Vegetation clearance Heavy, (over nominal 10m width)	LM	60	\$240.00	\$14,400	defined as works requiring chainsaws and earthmoving plant required to drag timber out
4	Tree removal medium, 300-1200	No	14	\$3,750.00	\$52,500	
7	Hardscaping / fencing removal	item	1	\$10,000.00	\$10,000	
8	Demolition of or cutting back of existing concrete/ rock walls	item	1	\$5,000.00	\$5,000	
9	Landowner services removals/ protection	item	1	\$5,000.00	\$5,000	
10	Other					
<b>\$3,000</b>						
<input type="checkbox"/> <b>Excavation works</b>						
						Retain existing creek rocks onsite for walls/ floor treatments, spoil to site stockpile, tested then to dump.
1	Widen / layback batter one side	m3	2790	\$79.25	\$221,108	To achieve floor width min. of 4 m, assume an average 2m wide strip x 2m h +50% for working space
2	Grading of Creek floor	m2	1752	\$12.00	\$21,024	Including localised cut and fill top remove humps and hollows. Subject to longitudinal survey
3	Unsuitable subgrade removal	m3	43.8	\$125.00	\$5,475	Excavation and backfilling with gravel/ cobbles etc where supporting structures. assume 5% of grading area
4	Other					
<b>\$227,607</b>						



# Zone 3

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

ZONE 3, MALCOLM - DOUGLASS ST

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
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TOTAL CONSTRUCTION COST	Calc. rate/metre =	\$4,628	00003			
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The construction methodology is i) to provide minimal disruption to the existing residents ( access) and limit if possible access to public road networks. ii) to undertake the works outside the months of high rainfall so as to minimise contractor flood risks, iii) to limit where possible the works to only one side of the creek . iv) to minimise interference with properties at top of bank level as much as practically possible. v) to utilise the creek floor for the majority of construction access.

**NOTES**

- 1 Excludes GST
- 2 Excludes escalation
- 3 Excludes Clients, community liason, Project management, Arbourist and design costs
- 4 Excludes vehicular Bridge upgrade works
- 5 Excludes clients contingency

WALL SCHEDULE		
RC Concrete	m	74
Stone, dry stacked	m	21
Gabion	m	316
Post and panel	m	54
<b>TOTAL</b>		000



# Zone 5A

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

#### ZONE 5A, CROSS ROAD - HAMPTON STREET

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
		UPGRADE LENGTH =	225			
<b>1</b>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					
1	Mobilisation, establishment, insurances and fees	item	1	\$61,600.00	\$61,600	
2	Run site, including accom, Onsite OH and project supervision	Item	1	\$62,300.00	\$62,300	
3	Traffic, pedestrian and resident management	Item	1	\$24,932.60	\$24,933	
4	Existing service relocations and protection	item	1	\$5,593.00	\$5,593	
5	Survey setout and as built	item	1	\$10,080.00	\$10,080	
7	Tidy up and demobilisation	item	1	\$5,040.00	\$5,040	
8	Other					
						<input type="checkbox"/> 1 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<b>Construction access works</b>					
1	Access Ramp from public roads	No	2	\$10,000.00	\$20,000	Cross and hampton
2	Access Ramp from/ through private property	No	1	\$30,000.00	\$30,000	e/o for tennis court to redo
3	Stockpile/ storage areas	item	1	\$5,000.00	\$5,000	Preparation, access, baseline enviro testing etc
4	Longitudinal construction access	item	1	\$0.00	\$0	Endeavour to use creek floor as much as practically possible.
5	Temporary fencing	m	230	\$12.00	\$2,760	Parallel at top of creek embankments to prevent public/ landowner access in construction worksite. Assume droppers @ 3m centres, top and bottom wire and barrier mesh
6	Other					
						<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0
<b>3</b>	<b>Dewatering works</b>					
1	Localised dewatering	item	1	\$10,000.00	\$10,000	
2	Lowflow diversions	item	1	\$5,000.00	\$5,000	Options include coffer dams, pumping, piped. French/agi drains or open channels
3	Rectification of works post storm/ large flow events					Refer Risk and opportunity
4	Other					
						<input type="checkbox"/> 1 <input type="checkbox"/> 000
<input type="checkbox"/>	<b>Environmental and protection works</b>					
1	Construction/setup of silt control devices and erosion protection	item	1	\$5,000.00	\$5,000	
2	Maintenance of control devices	item	1	\$5,000.00	\$5,000	
3	Private property dilapidation reports	No	12	\$1,200.00	\$14,400	
4	Significant tree construction protection works ( root zones)	No	6	\$1,800.00	\$10,800	
5	Other					
						<input type="checkbox"/> 3 <input type="checkbox"/> 000
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					
1	Vegetation clearance light, (over nominal 10m width)	LM	201	\$33.75	\$6,784	defined as clearance of vege up to 100mm trunk diameter using large handheld brushcutters etc
2	Vegetation clearance Heavy, (over nominal 10m width)	LM	30	\$189.00	\$5,670	defined as works requiring chainsaws and earthmoving plant required to drag timber out
3	Tree removal medium, 300-1200	No	9	\$4,500.00	\$40,500	Including 2 x major Gums, 1 dia and .8 dia
4	Hardscaping / fencing removal	item	1	\$10,000.00	\$10,000	
5	Demolition of or cutting back of existing concrete/ rock walls	item	1	\$5,000.00	\$5,000	
6	Landowner services removals/ protection	item	1	\$5,000.00	\$5,000	
7	Other					
						<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	<b>Excavation works</b>					Retain existing creek rocks onsite for walls/ floor treatments, spoil to site stockpile, tested then to dump.

# Zone 5A

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

#### ZONE 5A, CROSS ROAD - HAMPTON STREET

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
1	Widen / layback batter one side	m3	1104	\$79.25	\$87,492	To achieve floor width min. of 4 m, assume 2m wide strip x 2 h +50% for working space
2	Grading of Creek floor	m2	760	\$12.00	\$9,120	Including localised cut and fill tpo remove humps and hollows.Subject to longitudinal survey
3	Unsuitable subgrade removal	m3	19.0	\$125.00	\$2,375	Excavation and backfilling with gravel/ cobbles etc where supporting structures.assume 5% of grading area
4	Removal of concrete floor	m	10.0	\$67.50	\$675	
<hr/>						
<input type="checkbox"/> <b>Creek floor treatments</b>						
1	Do nothing ( other than light grade, refer 6.4 above)					Suspect that this will be the majority of the upgrade
2	Reno mattress's	m2	72	\$150.00	\$10,800	assume 6m immediately upstream of all bridges
3	Other					
					<b>\$10,800</b>	
<hr/>						
<input type="checkbox"/> <b>Creek bank batter treatments</b>						
1	Respread topsoil and Hydroseed - grass	m2	300	\$5.00	\$1,500	token
2	remedial works to existing batter treatments	m2	400	\$100.00	\$40,000	Other than Vegetation clearance, perhapsd stabilisation of banks
3	Other					
					<b>\$41,500</b>	
<hr/>						
<input type="checkbox"/> <b>Excavation and footing treatments</b>						
1	Gabions	m	133	\$1,386.00	\$184,338	All include detail excavation footing treatments, backfill,and assume wall height of 2.4m on CTQR base, allow 3 x 1m3 units high, base keyed in approx 600mm, may require an extra gabion at the base, risk of this is an e/o \$280K
2	Reinforced Concrete, (RC)	m	31	\$2,093.00	\$64,883	Assume 0.18 thick RC on 1.5 x 0.3 thick base, wall 2.5m high
3	Stone, dry stacked	m	20	\$1,891.00	\$37,820	On CTQR base,
4	Special matchin around existing trees	No	1	\$2,400.00	\$2,400	
5	remedial works to existing walls	item	1	\$15,000.00	\$15,000	
6	Underpinning / stabilisation of walls	m3	10	\$1,500.00	\$15,000	
7						
					<b>\$31,000</b>	
<hr/>						
<input type="checkbox"/> <b>Bank and culvert treatments</b>						
10	Top of bank earh bund formation/ trimming	LM	0	\$50.00	\$0	All include footing treatments and assume wall height of 2.4m
2	Remove and replace house decking/ bearers/ to gain creek access	item	0	0	\$0	
3	Reconstruct end of culvert roof	Item	0	\$0.00	\$0	
					<b>\$0</b>	
<hr/>						
<input type="checkbox"/> <b>Private Bridges</b>						
1	Removal/ demolition	No	0	\$2,400.00	\$0	
2	Removal/ replace/ raise existing on new sub structure	No	3	\$7,200.00	\$21,600	
3	Removal/ replace with new	No	2	\$12,000.00	\$24,000	
					<b>\$45,600</b>	
<hr/>						
<input type="checkbox"/> <b>Boundary and Services</b>						
1	Boundary fencing modifications	No	15	\$500.00	\$7,500	Perpendicular modifications, plug qty
2	Property landscape reinstatement	m2	920	\$12.00	\$11,040	assumed qty, say tubestock @ 2/m2 and mulching
3	Property hardscaping reinstatement	item	1	\$24,000.00	\$24,000	Paths and the like,
4	Advanced trees	No	18	\$150.00	\$2,700	Staked 45 litre size
5	Adjustments to, headwalls and scour protection for existing stormwater culverts discharging into the creek	No	1	\$1,500.00	\$1,500	assumed qty
6	Services	item	1	\$20,000.00	\$20,000	allowance for where cross creek or in embankments,
					<b>\$66,740</b>	

# Zone 5A

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

#### ZONE 5A, CROSS ROAD - HAMPTON STREET

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
<b>TOTAL CONSTRUCTION DIRECT COSTS</b>					<b>3 000</b>	
13	Allowanc efor off site Overhead and profit	%	10.00%	\$934,202.35	\$93,420	
14	Contractor Risk and opportunity allowance	%	5.00%	\$934,202.35	\$46,710	Limited to inherent ( broadly measurable or known unknowns) risks
<b>TOTAL CONSTRUCTION COST</b>					<b>1 000 333</b>	

The construction methodology is i) to provide minimal disruption to the existing residents ( access) and limit if possible access to public road networks. ii) to undertake the works outside the months of high rainfall so as to minimise contractor flood risks, iii) to limit where possible the works to only one side of the creek . iv) to minimise interference with properties at top of bank level as much as practically possible. v) to utilise the creek floor for the majority of construction access.

**NOTES**

- 1 Excludes GST
- 2 Excludes escalation
- 3 Excludes Clients, community liason, Project management, Arbourist and design costs
- 4 Excludes vehicular Bridge upgrade works
- 5 Excludes clients contingency

WALL SCHEDULE		
RC Concrete	m	31
Stone, dry stacked	m	20
Gabion	m	133
Post and panel	m	0
<b>TOTAL</b>		<b>1</b>

# Zone 5B

Brown Hill Keswick Creek Stormwater Project



## CONCEPT CONSTRUCTION ESTIMATE

### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE ZONE 5B, DEVONSHIRE - KENT

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
		UPGRADE LENGTH =	206			
<b>1</b>	<input type="checkbox"/> Mobilisation, establishment, insurances and fees	item	1	\$26,400.00	\$26,400	
2	Run site, including accom, Onsite OH and project supervision	Item	1	\$26,700.00	\$26,700	
3	Traffic, pedestrian and resident management	Item	1	\$10,685.40	\$10,685	
4	Existing service relocations and protection	item	1	\$2,397.00	\$2,397	
5	Survey setout and as built	item	1	\$4,320.00	\$4,320	
7	Tidy up and demobilisation	item	1	\$2,160.00	\$2,160	
8	Other					
<input type="checkbox"/> 000000						
<input type="checkbox"/>	<b>Construction access works</b>					
1	Access Ramp from public roads	No	2	\$5,000.00	\$10,000	
2	Access Ramp from/ through private property	No	1	\$10,000.00	\$10,000	
3	Stockpile/ storage areas	item	1	\$3,000.00	\$3,000	Preparation, access, baseline enviro testing etc Endeavour to use creek floor as much as practically possible. Parallel at top of creek embankments to prevent public/ landowner access in construction worksite. Assume droppers @ 3m centres, top and bottom wire and barrier mesh
4	Longitudinal construction access	item	1	\$0.00	\$0	
5	Temporary fencing	m	100	\$12.00	\$1,200	
6	Other					
<input type="checkbox"/> 000000						
<input type="checkbox"/>	<b>Dewatering works</b>					
1	Localised dewatering	item	1	\$10,000.00	\$10,000	Options include coffer dams, pumping, piped. Frencg/agi drains or open chann Refer Risk and opportunity
2	Lowflow diversions	item	1	\$5,000.00	\$5,000	
3	Rectification of works post storm/ large flow events					
4	Other					
<input type="checkbox"/> 100000						
<input type="checkbox"/>	<b>Environmental and protection works</b>					
1	Construction/setup of silt control devices and erosion protection	item	1	\$5,000.00	\$5,000	
2	Maintenance of control devices	item	1	\$5,000.00	\$5,000	
3	Private property dilapidation reports	No	6	\$1,200.00	\$7,200	
4	Significant tree construction protection works ( root zones)	No	5	\$1,800.00	\$9,000	
5	Other					
<input type="checkbox"/> 000000						
<input type="checkbox"/>	<b>Vegetation clearance</b>					
1	Vegetation clearance light, (over nominal 10m width)	LM	150	\$33.75	\$5,063	defined as clearance of vege up to 100mm trunk diameter using large handheld brushcutters etc
2	Vegetation clearance Heavy, (over nominal 10m width)	LM	50	\$189.00	\$9,450	defined as works requiring chainsaws and earthmoving plant required to drag timber out
3	Tree removal medium, 300-1200	No	14	\$600.00	\$8,400	
4	Hardscaping / fencing removal	item	1	\$10,000.00	\$10,000	
5	Demolition of or cutting back of existing concrete/ rock walls	item	1	\$36,000.00	\$36,000	Ease rock walls in 2 locations

# Zone 5B

Brown Hill Keswick Creek Stormwater Project



## CONCEPT CONSTRUCTION ESTIMATE

### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE ZONE 5B, DEVONSHIRE - KENT

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
6	Landowner services removals/ protection	item	1	\$10,000.00	\$10,000	
7	Other					
<b>13</b>						
<input type="checkbox"/>	<b>Excavation works</b>					Retain existing creek rocks onsite for walls/ floor treatments, spoil to site stockpile, tested then to dump.
1	Widen / layback batter one side	m3	0	\$0.00	\$0	
2	Grading of Creek floor	m2	160	\$12.00	\$1,920	Including localised cut and fill tpo remove humps and hollows. Subject to longitudinal
3	Unsuitable subgrade removal	m3	4.0	\$125.00	\$500	Excavation and backfilling with gravel/ cobbles etc where supporting
4	Removal/ lowering of rock floor	item	1.0	\$12,000.00	\$12,000	structures. assume 5% of grading area
<b>10</b>						
<input type="checkbox"/>	<b>Creek floor treatments</b>					
1	Do nothing ( other than light grade, refer 6.4 above)					Suspect that this will be the majority of the upgrade
2	Reno mattress's	m2	72	\$150.00	\$10,800	assume 6m immediately upstream of all bridges
3	Other					
<b>10</b>						
<input type="checkbox"/>	<b>Creek bank batter treatments</b>					
1	remedial works to existing batter treatments	m2	200	\$20.00	\$4,000	
2	Other					
<b>000</b>						
<input type="checkbox"/>	<b>Special matchin around existing trees</b>	No	5	\$2,400.00	\$12,000	All include detail excavation footing treatments, backfill, and assume wall height
4	Special matchin around existing trees	No	5	\$2,400.00	\$12,000	
5	remedial works to existing walls	item	1	\$35,000.00	\$35,000	Construct special structure to canterlever tennis court over widened creek
7						
<b>000</b>						
<b>10</b>	<b>Reconstruct Tennis court</b>	Item	1	\$35,000.00	\$35,000	All include footing treatments and assume wall height of 2.4m
1	Reconstruct Tennis court	Item	1	\$35,000.00	\$35,000	
<b>3</b>						
<b>11</b>	<b>Private Bridges</b>					
1	Removal/ demolition	No	0	\$0	\$0	
2	Removal/ replace/ raise existing on new sub structure	No	2	\$7,200.00	\$14,400	
3	Removal/ replace with new	No	0	\$0	\$0	
<b>1</b>						
<input type="checkbox"/>	<b>Boundary fencing modifications</b>	No	4	\$500.00	\$2,000	Perpendicular modifications, plug qty
1	Boundary fencing modifications	No	4	\$500.00	\$2,000	assumed qty, say tubestock @ 2/m2 and mulching
2	Property landscape reinstatement	m2	800	\$12.00	\$9,600	Paths and the like,
3	Property hardscaping reinstatement	item	1	\$35,000.00	\$35,000	Staked 45 litre size
4	Advanced trees	No	12	\$150.00	\$1,800	
5	Adjustments to, headwalls and scour protection for existing stormwater culverts discharging into the creek	No	1	\$1,500.00	\$1,500	assumed qty
6	Services	item	1	\$20,000.00	\$20,000	allowance for where cross creek or in embankments,

# Zone 5B

Brown Hill Keswick Creek Stormwater Project



## CONCEPT CONSTRUCTION ESTIMATE

### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE ZONE 5B, DEVONSHIRE - KENT

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
<b>TOTAL CONSTRUCTION DIRECT COSTS</b>					<b>00</b>	
<b>TOTAL CONSTRUCTION COST</b>					<b>3</b>	
13	Allowanc efor off site Overhead and profit	%	10.00%	\$412,494.90	\$41,249	
14	Contractor Risk and opportunity allowance	%	5.00%	\$412,494.90	\$20,625	Limited to inherent ( broadly measurable or known unknowns) risks

The construction methodology is i) to provide minimal disruption to the existing residents ( access) and limit if possible access to public road networks. ii) to undertake the works outside the months of high rainfall so as to minimise contractor flood risks, iii) to limit where possible the works to only one side of the creek . iv) to minimise interference with properties at top of bank level as much as practically possible. v) to utilise the creek floor for the majority of construction access.

**NOTES**

- 1 Excludes GST
- 2 Excludes escalation
- 3 Excludes Clients, community liason, Project management, Arbourist and design costs
- 4 Excludes vehicular Bridge upgrade works
- 5 Excludes clients contingency

WALL SCHEDULE		
RC Concrete	m	0
Stone, dry stacked	m	0
Gabion	m	0
Post and panel	m	0
<b>TOTAL</b>		<b>0</b>

# Zone 6A

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

#### ZONE 6A, PAISLEY - AYR

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
		UPGRADE LENGTH =	541			
<b>1</b>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					
1	Mobilisation, establishment, insurances and fees	item	1	\$93,000.00	\$93,000	
2	Run site, including accom, Onsite OH and project supervision	Item	1	\$111,250.00	\$111,250	
3	Traffic, pedestrian and resident management	Item	1	\$43,508.00	\$43,508	
4	Existing service relocations and protection	item	1	\$7,990.00	\$7,990	
5	Survey setout and as built	item	1	\$14,000.00	\$14,000	
7	Tidy up and demobilisation	item	1	\$9,307.79	\$9,308	
8	Other					
					<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <b>0</b> <input type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/>	<b>Construction access works</b>					
1	Access Ramp from public roads	No	4	\$5,000.00	\$20,000	
2	Access Ramp from/ through private property	No	2	\$6,000.00	\$12,000	e/o
3	Stockpile/ storage areas	item	1	\$5,000.00	\$5,000	Preparation, access, baseline enviro testing etc
4	Longitudinal construction access	item	1	\$0.00	\$0	Endeavour to use creek floor as much as practically possible.
5	Temporary fencing	m	300	\$12.00	\$3,600	Parallel at top of creek embankments to prevent public/ landowner access in construction worksite. Assume droppers @ 3m centres, top and bottom wire and barrier mesh
6	Other					
					<input type="checkbox"/> <input type="checkbox"/> <b>0</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<b>3</b>	<b>Dewatering works</b>					
1	Localised dewatering	item	1	\$10,000.00	\$10,000	
2	Lowflow diversions	item	1	\$10,000.00	\$10,000	Options include coffer dams, pumping, piped. Frencg/agi drains or open channels
3	Rectification of works post storm/ large flow events					Refer Risk and opportunity
4	Other					
					<input type="checkbox"/> <input type="checkbox"/> <b>0</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/>	<b>Environmental and protection works</b>					
1	Construction/setup of silt control devices and erosion protection	item	1	\$10,000.00	\$10,000	
2	Maintenance of control devices	item	1	\$5,000.00	\$5,000	
3	Private property dilapidation reports	No	18	\$1,200.00	\$21,600	
4	Significant tree construction protection works ( root zones)	No	4	\$1,800.00	\$7,200	
5	Other					
					<input type="checkbox"/> <input type="checkbox"/> <b>3</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					
1	Vegetation clearance light, (over nominal 10m width)	LM	286	\$33.75	\$9,653	defined as clearance of vege up to 100mm trunk diameter using large handheld brushcutters etc
2	Vegetation clearance Heavy, (over nominal 10m width)	LM	230	\$189.00	\$43,470	defined as works requiring chainsaws and earthmoving plant required to drag timber out
3	Tree removal medium, 300-1200	No	19	\$2,400.00	\$45,600	
4	Hardscaping / fencing removal	item	1	\$15,000.00	\$15,000	
5	Demolition of or cutting back of existing concrete/ rock walls	item	1	\$12,000.00	\$12,000	
6	Landowner services removals/ protection	item	1	\$10,000.00	\$10,000	
7	Other					
					<input type="checkbox"/> <input type="checkbox"/> <b>13</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/>	<b>Excavation works</b>					Retain existing creek rocks onsite for walls/ floor treatments, spoil to site stockpile, tested then to dump.

# Zone 6A

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

#### ZONE 6A, PAISLEY - AYR

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
1	Widen / layback batter one side	m3	1272	\$79.25	\$100,806	To achieve floor width min. of 4 m, assume 2m wide strip x 2 h +50% for working space including localised cut and fill tpo remove humps and hollows. Subject to longitudinal survey Excavation and backfilling with gravel/ cobbles etc where supporting structures. assume 5% of grading area Unlined channel
2	Grading of Creek floor	m2	2064	\$12.00	\$24,768	
3	Unsuitable subgrade removal	m3	51.6	\$125.00	\$6,450	
4	Creek realignment WORKS	m	30.0	\$825.00	\$24,750	
<b>1</b>						
<b>□ Creek floor treatments</b>						
1	Do nothing ( other than light grade, refer 6.4 above)					Suspect that this will be the majority of the upgrade assume 6m immediately upstream of all bridges
2	Reno mattress's	m2	72	\$150.00	\$10,800	
3	Other					
<b>10</b>						
<b>□ Creek bank batter treatments</b>						
1	Respread topsoil and Hydroseed - grass	m2	1200	\$5.00	\$6,000	token
2	remedial works to existing batter treatments	m2	1600	\$100.00	\$160,000	Other than Vegetation clearance, perhsapd stabilisation of banks
3	Other					
<b>1</b>						
<b>□</b>						
1	Gabions	m	123	\$1,386.00	\$170,478	All include detail excavation footing treatments, backfill, and assume wall height of 2.4m on CTQR base, allow 3 x 1m3 units high, base keyed in approx 600mm, may require an extra gabion at the base, risk of this is an e/o \$280K Assume 0.18 thick RC on 1.5 x 0.3 thick base, wall 2.5m high On CTQR base, Rev 4
2	Reinforced Concrete, (RC)	m	0	\$2,093.00	\$0	
3	Stone, dry stacked	m	89	\$1,891.00	\$168,299	
4	Special matchin around existing trees	No	1	\$2,400.00	\$2,400	
5	remedial works to existing walls	item	1	\$12,000.00	\$12,000	
6	Underpinning / stabilisation of walls	m3	24	\$1,500.00	\$36,000	
7	Additional pinch points upstream wall widening	item	1	\$80,000.00	\$80,000	
<b>1</b>						
<b>10</b>						
<b>□</b>						
1	Top of bank earh bund formation/ trimming	LM	453	\$50.00	\$22,650	All include footing treatments and assume wall height of 2.4m On RC base, assume 200 thk x 600mm high reinforced core filled on 0.45 x 0.3 thick RC footing, difficult access between Ethel and Charles Adjacent WEST side of Goodwood toad
2	Remove and replace house decking/ bearers/ to gain creek access	item	1	33600	\$33,600	
3	Reconstruct end of culvert roof	Item	1	\$12,000.00	\$12,000	
<b>0</b>						
<b>11 Private Bridges</b>						
1	Removal/ demolition	No	1	\$2,400.00	\$2,400	
2	Removal/ replace/ raise existing on new sub structure	No	2	\$7,200.00	\$14,400	
3	Removal/ replace with new	No	1	\$12,000.00	\$12,000	
3	Removal/ replace with new	No	1	\$12,000.00	\$12,000	
<b>0</b>						
<b>1</b>						
<b>□</b>						
1	Boundary fencing modifications	No	12	\$500.00	\$6,000	Perpendicular modifications, plug qty assumed qty, say tubestock @ 2/m2 and mulching Paths and the like, Staked 45 litre size assumed qty allowance for where cross creek or in embankments,
2	Property landscape reinstatement	m2	1600	\$12.00	\$19,200	
3	Property hardscaping reinstatement	m2	500	\$95.00	\$47,500	
4	Advanced trees	No	19	\$150.00	\$2,850	
5	Adjustments to, headwalls and scour protection for existing stormwater culverts discharging into the creek	No	4	\$1,500.00	\$6,000	
6	Services	item	1	\$10,000.00	\$10,000	



# Zone 6A

Brown Hill Keswick Creek Stormwater Project

## CONCEPT CONSTRUCTION ESTIMATE



### BROWN HILL CREEK CATCHMENT CAPACITY UPGRADE

#### ZONE 6A, PAISLEY - AYR

REVISION  
ISSUE DATE

7  
25/07/2014

ITEM	DESCRIPTION	UOM	QTY	RATE	AMOUNT	NOTES
<b>TOTAL CONSTRUCTION DIRECT COSTS</b>					<b>1,000,000</b>	
<b>TOTAL CONSTRUCTION DIRECT COSTS</b>					<b>1,000,000</b>	
13	Allowanc efor off site Overhead and profit	%	10.00%	\$1,522,529.29	\$152,253	
14	Contractor Risk and opportunity allowance	%	5.00%	\$1,522,529.29	\$76,126	Limited to inherent ( broadly measurable or known unknowns) risks
<b>TOTAL CONSTRUCTION COST</b>					<b>1,000,000</b>	

The construction methodology is i) to provide minimal disruption to the existing residents ( access) and limit if possible access to public road networks. ii) to undertake the works outside the months of high rainfall so as to minimise contractor flood risks, iii) to limit where possible the works to only one side of the creek . iv) to minimise interference with properties at top of bank level as much as practically possible. v) to utilise the creek floor for the majority of construction access.

**NOTES**

- 1 Excludes GST
- 2 Excludes escalation
- 3 Excludes Clients, community liason, Project management, Arbourist and design costs
- 4 Excludes vehicular Bridge upgrade works
- 5 Excludes clients contingency

WALL SCHEDULE		
RC Concrete	m	0
Stone, dry stacked	m	89
Gabion	m	123
Post and panel	m	0
<b>TOTAL</b>		<b>1</b>



# Cost Summary



□□□□□□□□ □□□□□□□□□□□□□□□□ □□□□□□□□□□ □□□□□□□□

CREEK CLEARING WORKS CONCEPT ESTIMATE		UOM	QTY	RATE	TOTAL DC	CONTRACT ONCOSTS	TOTAL CONTRACT	CLIENT COSTS	TOTAL	CONTINGENCY	GRAND TOTAL
SECTION = ANZAC HWY - MUGGS HILL ROAD (Excludes clearing in Zones wher creek widening / bank treatment works are required)											
Light Clearing	Defined as vegetation, shrubs, small trees to trunk diameter of 50mm that is required to be cleared to facilitate storm flows	LM	2103	\$33.75	\$70,976	\$19,873	\$90,850	\$13,627.44	\$104,477	\$36,567	\$141,044
Heavy Clearing	As above but trunks up to 500mm dia.	LM	701	\$189.00	\$132,489	\$37,097	\$169,586	\$25,437.89	\$195,024	\$68,258	\$263,282
Trees to remove	Trunks >500mm dia. Assume @ 1/100M, Typically these are within the creek channel profile	No	28	\$8,000	\$224,320	\$62,810	\$287,130	\$43,069.44	\$330,199	\$115,570	\$445,769
E/O for construction access	Works required to facilitate clearing operations. E.g. construction of access ramps etc	LM	2804	\$20.00	\$56,080	\$15,702	\$71,782	\$10,767.36	\$82,550	\$28,892	\$111,442
E/O for reinstatement works	Assume 30m frontage and average cost of 1.5k each bank	LM	2804	\$100.00	\$280,400	\$78,512	\$358,912	\$53,836.80	\$412,749	\$144,462	\$557,211
E/O for consequential upgrade works	Assume 5% of length will require some additional bank protection works as a consequence of removing vege and trees etc. Assume Gabion wall 2m high	LM	140.2	\$700.00	\$98,140	\$27,479	\$125,619	\$18,842.88	\$144,462	\$50,562	\$195,024
					\$862,405	\$241,473	\$1,103,879	\$165,582	\$1,269,461	\$444,311	\$1,713,772
								WOTIF LOW COST=	-30.00%	\$1,199,640	
								WOTIF HIGH COST=	50.00%	\$2,570,658	

## UPPER BROWN HILL CREEK - CLEARING WORKS - DAM OPTIONS

CREEK CLEARING WORKS CONCEPT ESTIMATE		UOM	QTY	RATE	TOTAL DC	CONTRACT ONCOSTS	TOTAL CONTRACT	CLIENT COSTS	TOTAL	CONTINGENCY	GRAND TOTAL
SECTION = ANZAC HWY - MUGGS HILL ROAD (Includes full length with exception of bridges and culverts)											
Light Clearing	Defined as vegetation, shrubs, small trees to trunk diameter of 50mm that is required to be cleared to facilitate storm flows	LM	3302	\$33.75	\$111,456	\$31,208	\$142,664	\$21,399.55	\$164,063	\$57,422	\$221,485
Heavy Clearing	As above but trunks up to 500mm dia.	LM	826	\$189.00	\$156,038	\$43,691	\$199,729	\$29,959.37	\$229,689	\$80,391	\$310,080
Trees to remove	Trunks >500mm dia. Assume @ 1/100M, Typically these are within the creek channel profile	No	41	\$8,000	\$330,240	\$92,467	\$422,707	\$63,406.08	\$486,113	\$170,140	\$656,253
E/O for construction access	Works required to facilitate clearing operations. E.g. construction of access ramps etc	LM	4128	\$20.00	\$82,560	\$23,117	\$105,677	\$15,851.52	\$121,528	\$42,535	\$164,063
E/O for reinstatement works	Assume 30m frontage and average cost of 1.5k each bank	LM	4128	\$100.00	\$412,800	\$115,584	\$528,384	\$79,257.60	\$607,642	\$212,675	\$820,316
E/O for consequential upgrade works	Assume 5% of length will require some additional bank protection works as a consequence of removing vege and trees etc. Assume Gabion wall 2m high	LM	206.4	\$700.00	\$144,480	\$40,454	\$184,934	\$27,740.16	\$212,675	\$74,436	\$287,111
			4128		\$1,237,574	\$346,521	\$1,584,095	\$237,614	\$1,821,710	\$637,598	\$2,459,308
								WOTIF LOW COST=	-30.00%	\$1,721,515	
								WOTIF HIGH COST=	50.00%	\$3,688,962	

**E/O FOR DAMS OPTIONS \$745,536**