APPENDIX 29

Consolidation of estimated costs for Part B Works

Consolidation of estimated costs

Component	Options	Estimated costs ($M) A1	A2	B1	B2	C1	C2	C3	D
Dam – Site 1		24.1		24.1					
Dam – Site 2			28.8		28.8				
Malcolm Street bypass		19.2	19.2						
Extended high flow bypass (route 3A)						43.4			
Extended high flow bypass (route 3)							46.4		
Extended high flow bypass (route 3A) without the Malcolm Street branch								28.6	
Creek works – JW Morris Reserve						1.5	1.5	1.5	1.5
Creek works – Area 5A		0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.5
Creek works – Areas 5B & 6		0	0	0	0	3.2	3.2	3.2	3.2
Creek works – Areas 2 & 3 and Orphanage Park				1.9	1.0			1.0	6.2
Bridge upgrades (excluding Area 1)		0	0	0.7	0.7	0	0	1.2	5.7
Creek rehabilitation		2.8	2.8	2.6	2.6	2.5	2.5	2.3	1.8
Easements		0	0	0.8	0.2	0.7	0.7	0.9	2.7
BHC diversion by DPTI		5	5	5	5	5	5	5	5
Estimated cost (Part B Works)		**51.8**	**56.5**	**35.8**	**39.0**	**57.0**	**60.0**	**44.4**	**27.6**
Creek works – Area 1 (Part A Works)		3.7	3.7	3.7	3.7	4.6	4.6	4.6	4.6
Bridge upgrades – Area 1		0.9	0.9	0.9	0.9	2.8	2.8	2.8	2.8
Easements – Areal 1		0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Creek rehabilitation – Area 1		0.1	0.1	0.1	0.1	0	0	0	0
Estimated cost (Area 1/Part A Wks)		**5.1**	**5.1**	**5.1**	**5.1**	**7.9**	**7.9**	**7.9**	**7.9**
Total estimated cost – upper BHC		**56.9**	**61.6**	**40.9**	**44.1**	**64.9**	**67.9**	**52.3**	**35.5**

Options

A1: Dam at Site 1 + Malcolm Street bypass

A2: Dam at Site 2 + Malcolm Street bypass

B1: Dam at Site 1 + Creek works downstream of Malcolm Street [(1)]

B2: Dam at Site 2 + Creek works downstream of Malcolm Street [(1)]

C1: Extended high flow bypass (route 3A) + Creek works upstream of Hampton Street [(2)] (Option 3A of the SMP)

C2 Extended high flow bypass (route 3) + Creek works upstream of Hampton Street [(2)] (Option 3 of the SMP)

C3: Extended high flow bypass (route 3A) without the Malcolm Street branch + Creek works downstream of Malcolm Street [(1)] + Creek works upstream of Hampton Street [(2)]

D: Creek works at critical sections for peak flow to be conveyed along the full length of upper BHC [(3)]

(1) Areas 2 and 3
(2) Areas 5B & 6
(3) Areas 2, 3, 5 & 6

All options include creek capacity upgrade works in Area 1 in addition to works in other Areas as noted in 1,2 and 3.

		Note number – with reference to following table							
Component	Options	A1	A2	B1	B2	C1	C2	C3	D
Dam – Site 1		1		1					
Dam – Site 2			2		2				
Malcolm Street bypass		3	3						
Extended high flow bypass (route 3A)						4			
Extended high flow bypass (route 3)							5		
Extended high flow bypass (route 3A) without the Malcolm Street branch								6	
Creek works – JW Morris Reserve						7	7	7	7
Creek works – Area 5A		8	8	8	8	8	8	8	9
Creek works – Areas 5B & 6		10	10	10	10	11	11	11	11
Creek works – Areas 2 & 3 and Orphanage Park				12	13			14	15
Bridge upgrades		16	16	17	17	18	18	19	20
Creek rehabilitation		21	21	22	23	24	24	25	26
Easements		27	27	28	29	30	30	31	32
BHC diversion by DPTI		32	32	32	32	32	32	32	32

Creek works – Area 1 (Part A Works)		34	34	34	34	35	35	35	35
Bridge upgrades – Area 1		36	36	36	36	37	37	37	37
Easements – Area 1		38	38	38	38	39	39	39	39
Creek rehabilitation – Area 1		40	40	40	40	41	41	41	41

Notes:

No.	Estimated costs in $M	$M
1	Dam – Site 1 • Options A1 & B1 • Costplan 4/7/14 • Earth/rock fill dam……...$22.692 • Roller compacted concrete dam……..…..$20.909 • RCC with architectural fill……..…..$24.015	24.1
2	Dam – Site 2 • Options A2 & B2 • Costplan 4/7/14 • Roller compacted concrete dam…….$28.584 • Land acquisition……...$0.179	28.8
3	Malcolm Street bypass • Options A1 & A2 • To convey 12 m^3/s based on 2012 hydrology • Does not include cost for inlet structures at Malcolm Street and Hampton Street and transition into the DPTI culvert • Costplan 3/7/13…….$19.222	19.2
4	Extended high flow bypass (Route 3A) • Option C1 • To convey 9 m^3/s (Hampton to Malcolm Streets), 11 m^3/s along Malcolm Street and 20 m^3/s thereafter based on 2012 hydrology • Does not include cost for inlet structure at Hampton Street and transition into the DPTI culvert • Costplan 4/7/13 & 5/7/13 • Hampton – Malcolm Streets…….$19.415 • Malcolm – Victoria Streets…….$23.976	43.4
5	Extended high flow bypass (Route 3) • Option C2 • To convey 9 m^3/s (Hampton to Malcolm Streets) and 20 m^3/s thereafter based on 2012 hydrology • Does not include cost for inlet structure at Hampton Street and transition into the DPTI culvert • Costplan 3/7/13 & 5/7/13 • Hampton – Malcolm Streets…….……..$21.771 • Malcolm – Victoria Streets……..$24.597	46.4
6	Extended high flow bypass (Route 3AA) • Option C3 • To convey 9 m^3/s based on 2012 hydrology • Does not include cost for inlet structure at Hampton Street and transition into the DPTI culvert • Costplan	28.6

7	Creek works – JW Morris Reserve • Options C1, C2, C3 & D • Nominal estimate of creek capacity upgrade component derived from Mitcham Council estimated cost	1.5
8	Creek works – Area 5A • Options A1, A2, B1, B2, C1, C2 & C3 • To convey either 30 m^3/s less 9 m^3/s (21 m^3/s) or the reduced peak flow from a dam (22 m^3/s) • Allow nominal amount (50% of #8) for limited break-out	0.7
9	Creek works – Area 5A • Option D • To convey 'no dam' flow of 30 m^3/s • Costplan 25/5/14……$1.480	1.5
10	Creek works – Areas 5B & 6 • Options A1,A2, B1 & B2 • 'With dam' peak flow from 20.4 to 22.2 m^3/s for A1 & B1 • 'With dam' peak flow from 17.4 to 19.8 m^3/s for A2 & B2 • No works	0
11	Creek works – Areas 5B & 6 • Options C1, C2, C3 & D • 'No dam' peak flow from 27 to 30 m^3/s • Area 5B…….$0.654 • Area 6A……..……..$2.412 • Area 6B……..…..$0.137	3.2
12	Creek works – Areas 2 & 3 and Orphanage Park • Option B1 • Flow is 22.4 m^3/s • Area 3 (50% of $2.786)……..…$1.393 • Orphanage Park minor works (30% of 1.667)…….$0.500	1.9
13	Creek works – Areas 2 & 3 and Orphanage Park • Option B2 • Flow is 19.1 m^3/s • Area 3 minor works……...$0.500 • Orphanage Park minor works…..$0.500	1.0
14	Creek works – Areas 2 & 3 and Orphanage Park • Option C3 • Flow is 21 m^3/s ('no dam' and 9 m^3/s Option 3AA bypass from Hampton St) • Assume same as #13	1.0

15	Creek works – Areas 2 & 3 and Orphanage Park • Option D • To convey 30 m^3/s ('no dam' flow) • Area 2…….....$1.785 • Area 3…….…$2.786 • Orphanage Park (2.7 m x 1.2 m culvert)…..$1.667	6.2
16	Public road bridges (excluding Area 1) • Options A1 & A2 • Nil	0
17	Public road bridges (excluding Area 1) • Options B1 & B2 • Regent Street……$0.739	0.7
18	Public road bridges (excluding Area 1) • Options C1 & C2 • Nil	0
19	Public road bridges (excluding Area 1) • Option C3 • Fife Avenue……..$1.221	1.2
20	Public road bridges (excluding Area 1) • Option D • Fife Avenue……$1.221 • Hampton Street…….....$0.948 • Northgate Street……..…….$1.027 • Regent Street……....$0.739 • Goodwood Road approach…..$1.804	5.7
21	Creek rehabilitation (All except Area 1) • Options A1 & A2 • 4,703 m @ $600/m……..$2.822	2.8
22	Creek rehabilitation (All except Area 1) • Option B1 • 4,333 m @ $600/m…….$2.600	2.6
23	Creek rehabilitation (All except Area 1) • Option B2 • 4411 @ $600/m…….…….$2.647	2.6
24	Creek rehabilitation (All except Area 1) • Options C1 & C2 • 4,112 m @ $600/m…….$2.467	2.5

25	Creek rehabilitation (All except Area 1) • Option C3 • 3,820 m @ $600/m……$2.292	2.3
26	Creek rehabilitation (All except Area 1) • Option D • 2,944 m @ $600/m……..$1.766	1.8
27	Easements (excluding Area 1) • Options A1 & A2 • Nil	0
28	Easements (excluding Area 1) • Option B1 • Area 3……....$0.752	0.8
29	Easements (excluding Area 1) • Option B2 • Area 3……...$0.199	0.2
30	Easements (excluding Area 1) • Options C1 & C2 • Area 6B…….$0.711	0.7
31	Easements (excluding Area1) • Option C3 • Area 3……..$0.199 • Area 6B…….$0.711	0.9
32	Easements (excluding Area 1) • Option D • Area 2…….....$0.410 • Area 3…….....$0.971 • Area 5……..…$0.588 • Area 6……..…$0.711	2.7
33	DPTI diversion culvert	5.0
34	Creek works – Area 1 – Forestville Reserve (Part A) • Options A1, A2, B1 & B2 • 26.8 m^3/s • 80% of #35……80% of 4.573…….$3.658	3.7
35	Creek works – Area 1 – Forestville Reserve (Part A) • Options C1,C2, C3 & D • 31 m^3/s • Area 1……$3.532 • Area 1A (Unley Council channel) ……..…..$0.368 • Forestville Reserve…….……...…$0.673	4.6

36	Bridge upgrades Area 1 • Options A1, A2, B1 & B2 • 26.8 m^3/s • First Avenue……...0.948….$0.474 • Second Avenue…….……...0.766….$0.383 • Assume 50% of cost to Unley……Total = …..$0.857	0.9
37	Bridge upgrades Area 1 • Options C1, C2, C3 & D • For 31 m^3/s flow • Ethel / Nicholls…….…….....1.105*……..$0.552 • Charles Street……..…0.856*……..$0.428 • Leah Street…….……....0.931……...$0.931 • First Avenue……...0.948*…….$0.474 • Second Avenue……....0.766*…….$0.383 • *Assume 50% of cost to Unley…Total = ...$2.768	2.8
38	Easements Area 1 • Options A1, A2, B1 & B2 • MFS estimate 7/7/14…….$0.361	0.4
39	Easements Area 1 • Options C1, C2, C3 & D • MFS estimate 7/7/14…….$0.484	0.5
40	Creek rehabilitation Area 1 • Options A1, A2, B1 & B2 • Assume a nominal amount…….$0.1000	0.1
41	Creek rehabilitation Area 1 • Options A1, A2, B1 & B2 • Capacity upgrade works along full length • Therefore nil rehabilitation	0