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“ St Helena Cost Benefit Analysis,
Water Security
Final Report”
[https://hub.jncc.gov.uk/assets/0cf5
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5c77b205ad86](https://hub.jncc.gov.uk/assets/0cf5c4ed-bdbd-44d1-8309-5c77b205ad86)

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40			
Direct benefits operation																																												
New storage (34,000m3 @ £1.84/m3)	0	58,467	54,642	51,068	47,727	44,604	41,686	38,959	36,410	34,028	31,802	29,722	27,777	25,960	24,262	22,675	21,191	19,805	18,509	17,298	16,167	15,109	14,121	13,197	12,333	11,527	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	58,467	54,642	51,068	47,727	44,604	41,686	38,959	36,410	34,028	31,802	29,722	27,777	25,960	24,262	22,675	21,191	19,805	18,509	17,298	16,167	15,109	14,121	13,197	12,333	11,527	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Direct Costs Construction																																												
New storage: Redhill (20,000m3)																																												
	282,050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
New storage: Hutt's Gate (14,000m3)	197,435	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct costs security and reliability of option during drought conditions																																												
Provision of water bowsers	0	0	0	0	0	1,141	1,066	996	931	870	813	760	710	664	621	580	542	507	473	442	413	386	361	338	315	295	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	479,485	0	0	0	0	1,141	1,066	996	931	870	813	760	710	664	621	580	542	507	473	442	413	386	361	338	315	295	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Total benefits	729,048
Total costs	492,711
Net benefit	236,337
B/C ratio	1.48

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40				
Direct benefits operation																																													
New storage (34,000m ³ @ £1.84/m ³)	0	56,873	51,702	47,002	42,729	38,845	35,313	32,103	29,185	26,532	24,120	21,927	19,934	18,121	16,474	14,976	13,615	12,377	11,252	10,229	9,299	8,454	7,685	6,987	6,351	5,774	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	56,873	51,702	47,002	42,729	38,845	35,313	32,103	29,185	26,532	24,120	21,927	19,934	18,121	16,474	14,976	13,615	12,377	11,252	10,229	9,299	8,454	7,685	6,987	6,351	5,774	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40							
Direct Costs Construction																																																
New storage: Redhill (20,000m ³)	282,050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
New storage: Hatts Gate (14,000m ³)	197,435	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct costs security and reliability of option during drought conditions																																																
Provision of water bowzers	0	0	0	0	0	993	903	821	746	679	617	561	510	463	421	383	348	317	288	262	238	216	197	179	162	148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	479,485	0	0	0	0	993	903	821	746	679	617	561	510	463	421	383	348	317	288	262	238	216	197	179	162	148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Total benefits	567,860
Total costs	488,936
Net benefit	78,923
B/C ratio	1.16

BASE CASE 4%

0.04

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
Direct benefits operation																																										
New storage (34,000m3 @ £1.84/m3)	0	60,154	57,840	55,616	53,477	51,420	49,442	47,540	45,712	43,954	42,263	40,638	39,075	37,572	36,127	34,737	33,401	32,117	30,881	29,694	28,552	27,453	26,398	25,382	24,406	23,467	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	60,154	57,840	55,616	53,477	51,420	49,442	47,540	45,712	43,954	42,263	40,638	39,075	37,572	36,127	34,737	33,401	32,117	30,881	29,694	28,552	27,453	26,398	25,382	24,406	23,467	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
Direct Costs Construction																																											
New storage: Redhill (20,000m3)	282,050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New storage: Hutt's Gate (14,000m3)	197,435	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct costs security and reliability of option during drought conditions																																											
Provision of water bowsers	0	0	0	0	0	1,315	1,265	1,216	1,169	1,124	1,081	1,039	999	961	924	888	854	821	790	759	730	702	675	649	624	600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	479,485	0	0	0	0	1,315	1,265	1,216	1,169	1,124	1,081	1,039	999	961	924	888	854	821	790	759	730	702	675	649	624	600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Total benefits	977,317
Total costs	498,672
Net benefit	478,645
B/C ratio	1.96

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Direct benefits operation																																									
Water supply (volume x £1.86)	0	0	0	0	0	341,093	318,778	297,923	278,433	260,218	243,194	227,284	212,415	198,519	185,532	173,394	162,051	151,449	141,541	132,282	123,628	115,540	107,981	100,917	94,315	88,145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water supply (50% volume x £1.86)	0	0	0	0	0	170,546	159,389	148,962	139,217	130,109	121,597	113,642	106,208	99,259	92,766	86,697	81,025	75,725	70,771	66,141	61,814	57,770	53,991	50,458	47,157	44,072	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (full supply)	0	0	0	0	0	341,093	318,778	297,923	278,433	260,218	243,194	227,284	212,415	198,519	185,532	173,394	162,051	151,449	141,541	132,282	123,628	115,540	107,981	100,917	94,315	88,145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (50% supply)	0	0	0	0	0	170,546	159,389	148,962	139,217	130,109	121,597	113,642	106,208	99,259	92,766	86,697	81,025	75,725	70,771	66,141	61,814	57,770	53,991	50,458	47,157	44,072	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Direct Costs Construction																																									
Construction costs	2,087,328	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Landscaping (5% of sub total A)	104,366	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Miscellaneous (10% of sub total A)	208,733	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Preliminary and general (30% of sub total A)	720,128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Contingencies (17.5% of sub total C)	546,097	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	3,666,652	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

PV benefits (full supply)	3,954,632
PV benefits (50% supply)	1,977,316
NPV costs	3,666,652
Net benefit (full supply)	287,980
Net Benefit (50% supply)	-1,689,336
B-C ratio (full supply)	1.08
B-C ratio (50% supply)	0.54

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
Direct benefits operation																																										
Water supply (volume x £1.86)	0	0	0	0	0	297,049	270,044	245,495	223,177	202,888	184,444	167,676	152,433	138,575	125,978	114,525	104,114	94,649	86,044	78,222	71,111	64,646	58,770	53,427	48,570	44,154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water supply (50% volume x £1.86)	0	0	0	0	0	148,524	135,022	122,747	111,589	101,444	92,222	83,838	76,216	69,288	62,989	57,263	52,057	47,324	43,022	39,111	35,556	32,323	29,385	26,713	24,285	22,077	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (full supply)	0	0	0	0	0	297,049	270,044	245,495	223,177	202,888	184,444	167,676	152,433	138,575	125,978	114,525	104,114	94,649	86,044	78,222	71,111	64,646	58,770	53,427	48,570	44,154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (50% supply)	0	0	0	0	0	148,524	135,022	122,747	111,589	101,444	92,222	83,838	76,216	69,288	62,989	57,263	52,057	47,324	43,022	39,111	35,556	32,323	29,385	26,713	24,285	22,077	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
Direct Costs Construction																																										
Construction costs	2,087,328	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Landscaping (5% of sub total A)	104,366	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous (10% of sub total A)	208,733	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Preliminary and general (30% of sub total B)	720,128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contingencies (17.5% of sub total C)	546,097	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,666,652	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

PV benefits (full supply)	2,825,992
PV benefits (50% supply)	1,412,996
NPV costs	3,666,652
Net benefit (full supply)	-840,660
Net Benefit (50% supply)	-2,253,656
B-C ratio (full supply)	0.77
B-C ratio (50% supply)	0.39

Reservoir 4%

0.04

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40			
Direct benefits operation																																												
Water supply (volume x £1.86)	0	0	0	0	0	393,210	378,086	363,545	349,562	336,117	323,190	310,760	298,807	287,315	276,264	265,639	255,422	245,598	236,152	227,069	218,336	209,938	201,863	194,099	186,634	179,456	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Water supply (50% volume x £1.86)	0	0	0	0	0	196,605	189,043	181,772	174,781	168,059	161,595	155,380	149,404	143,657	138,132	132,819	127,711	122,799	118,076	113,534	109,168	104,969	100,932	97,050	93,317	89,728	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (full supply)	0	0	0	0	0	393,210	378,086	363,545	349,562	336,117	323,190	310,760	298,807	287,315	276,264	265,639	255,422	245,598	236,152	227,069	218,336	209,938	201,863	194,099	186,634	179,456	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (50% supply)	0	0	0	0	0	196,605	189,043	181,772	174,781	168,059	161,595	155,380	149,404	143,657	138,132	132,819	127,711	122,799	118,076	113,534	109,168	104,969	100,932	97,050	93,317	89,728	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40			
Direct Costs Construction																																												
Construction costs	2,087,328	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Landscaping (5% of sub total A)	104,366	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Miscellaneous (10% of sub total A)	208,733	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Preliminary and general (30% of sub total)	720,128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Contingencies (17.5% of sub total C)	546,097	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	3,666,652	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

PV benefits (full supply)	5,737,061
PV benefits (50% supply)	2,868,531
NPV costs	3,666,652
Net benefit (full supply)	2,070,409
Net Benefit (50% supply)	-798,122
B-C ratio (full supply)	1.56
B-C ratio (50% supply)	0.78

Desal RAW DATA

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
Direct benefits operation																																										
Water supply (401500 x £1.84)		738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760
Water supply (50% of 401500 x £1.84)	0	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380
Total (full supply)	0	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760	738,760
Total (50% supply)	0	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380	369,380
Direct Costs Construction																																										
Life cycle costs (401,500m ³ /yr, full supply)		987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690
Life cycle costs (401,500m ³ /yr, 50% supply)		493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845
Construction costs (401,500m ³ /yr, full supply)	1,038,462																																									
Construction costs (401,500m ³ /yr, 50% supply)	519,231																																									
Direct costs Maintenance																																										
Energy cost (low: £0.38/m ³ , full supply)		152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	
Energy cost (low: £0.38/m ³ , 50% supply)		76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	
Energy cost (high: £2.31/m ³ , full supply)		927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	
Energy cost (high: £2.31/m ³ , 50% supply)		463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	
Total																																										
Life cycle costs (full supply)	0	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	987,690	
Life cycle costs (50% supply)	0	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	493,845	
Unit costs (low, full supply)	1,038,462	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	152,570	
Unit costs (high, full supply)	1,038,462	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645	927,645		
Unit costs (low, 50% supply)	519,231	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285	76,285		
Unit costs (high, 50% supply)	519,231	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823	463,823		

Total benefits	
Full supply	18,469,000
50% supply	9,234,500
Total costs (life cycle)	
Full supply	24,692,250
50% supply	12,346,125
Total costs (unit, low)	
Full supply	4,852,712
50% supply	2,426,356
Total costs (unit, high)	
Full supply	24,229,587
50% supply	12,114,794
Net benefit (life cycle)	
Full supply	-6,223,250
50% supply	-3,111,625
Net benefit (unit, low)	
Full supply	13,616,288
50% supply	6,808,144
Net benefit (unit, high)	
Full supply	-5,760,587
50% supply	-2,880,294
B/C ratio (life cycle)	
Full supply	0.75
50% supply	0.75
B/C ratio (unit, low)	
Full supply	3.81
50% supply	3.81
B/C ratio (unit, high)	
Full supply	0.76
50% supply	0.76

Desal 7%

0.07

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Direct benefits operation																																									
Water supply (401500 x £1.84)	0	690,430	645,262	603,048	563,596	526,726	492,267	460,063	429,965	401,836	375,548	350,980	328,018	306,559	286,504	267,761	250,244	233,872	218,572	204,273	190,910	178,420	166,748	155,839	145,644	136,116															
Water supply (50% of 401500 x £1.84)	0	345,215	322,631	301,524	281,798	263,363	246,133	230,031	214,983	200,918	187,774	175,490	164,009	153,280	143,252	133,880	125,122	116,936	109,286	102,137	95,455	89,210	83,374	77,920	72,822	68,058															
Total (full supply)	0	690,430	645,262	603,048	563,596	526,726	492,267	460,063	429,965	401,836	375,548	350,980	328,018	306,559	286,504	267,761	250,244	233,872	218,572	204,273	190,910	178,420	166,748	155,839	145,644	136,116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (50% supply)	0	345,215	322,631	301,524	281,798	263,363	246,133	230,031	214,983	200,918	187,774	175,490	164,009	153,280	143,252	133,880	125,122	116,936	109,286	102,137	95,455	89,210	83,374	77,920	72,822	68,058															

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Direct Costs Construction																																									
Life cycle costs (401,500m ³ /yr, full supply)	0	923,075	862,687	806,249	753,504	704,209	658,140	615,084	574,845	537,238	502,092	469,244	438,546	409,856	383,043	357,984	334,565	312,677	292,222	273,105	255,238	238,540	222,935	208,350	194,720	181,981															
Life cycle costs (401,500m ³ /yr, 50% supply)	0	461,537	431,343	403,125	376,752	352,105	329,070	307,542	287,422	268,619	251,046	234,622	219,273	204,928	191,522	178,992	167,282	156,339	146,111	136,552	127,619	119,270	111,467	104,175	97,360	90,991															
Construction costs (401,500m ³ /yr, full supply)	1,038,462	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Construction costs (401,500m ³ /yr, 50% supply)	519,231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Direct costs Maintenance																																									
Energy cost (low: £0.38/m ³ , full supply)	0	142,589	133,261	124,543	116,395	108,780	101,664	95,013	88,797	82,988	77,559	72,485	67,743	63,311	59,169	55,298	51,681	48,300	45,140	42,187	39,427	36,848	34,437	32,184	30,079	28,111															
Energy cost (low: £0.38/m ³ , 50% supply)	0	71,294	66,630	62,271	58,197	54,390	50,832	47,506	44,399	41,494	38,779	36,242	33,871	31,656	29,585	27,649	25,840	24,150	22,570	21,093	19,713	18,424	17,219	16,092	15,039	14,055															
Energy cost (high: £2.31/m ³ , full supply)	0	866,958	810,241	757,235	707,696	661,398	618,129	577,691	539,898	504,577	471,568	440,717	411,885	384,940	359,757	336,221	314,225	293,669	274,457	256,502	239,721	224,038	209,382	195,684	182,882	170,918															
Energy cost (high: £2.31/m ³ , 50% supply)	0	433,479	405,121	378,617	353,848	330,699	309,065	288,845	269,949	252,289	235,784	220,359	205,943	192,470	179,878	168,111	157,113	146,834	137,228	128,251	119,861	112,019	104,691	97,842	91,441	85,459															
Total	0	923,075	862,687	806,249	753,504	704,209	658,140	615,084	574,845	537,238	502,092	469,244	438,546	409,856	383,043	357,984	334,565	312,677	292,222	273,105	255,238	238,540	222,935	208,350	194,720	181,981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Life cycle costs (full supply)	0	923,075	862,687	806,249	753,504	704,209	658,140	615,084	574,845	537,238	502,092	469,244	438,546	409,856	383,043	357,984	334,565	312,677	292,222	273,105	255,238	238,540	222,935	208,350	194,720	181,981															
Life cycle costs (50% supply)	0	461,537	431,343	403,125	376,752	352,105	329,070	307,542	287,422	268,619	251,046	234,622	219,273	204,928	191,522	178,992	167,282	156,339	146,111	136,552	127,619	119,270	111,467	104,175	97,360	90,991															
Unit costs (low, full supply)	1,038,462	142,589	133,261	124,543	116,395	108,780	101,664	95,013	88,797	82,988	77,559	72,485	67,743	63,311	59,169	55,298	51,681	48,300	45,140	42,187	39,427	36,848	34,437	32,184	30,079	28,111															
Unit costs (high, full supply)	1,038,462	866,958	810,241	757,235	707,696	661,398	618,129	577,691	539,898	504,577	471,568	440,717	411,885	384,940	359,757	336,221	314,225	293,669	274,457	256,502	239,721	224,038	209,382	195,684	182,882	170,918															
Unit costs (low, 50% supply)	519,231	71,294	66,630	62,271	58,197	54,390	50,832	47,506	44,399	41,494	38,779	36,242	33,871	31,656	29,585	27,649	25,840	24,150	22,570	21,093	19,713	18,424	17,219	16,092	15,039	14,055															
Unit costs (high, 50% supply)	519,231	433,479	405,121	378,617	353,848	330,699	309,065	288,845	269,949	252,289	235,784	220,359	205,943	192,470	179,878	168,111	157,113	146,834	137,228	128,251	119,861	112,019	104,691	97,842	91,441	85,459															

Total benefits	
Full supply	8,609,201
50% supply	4,304,601
Total costs (life cycle)	
Full supply	11,510,128
50% supply	5,755,064
Total costs (unit, low)	
Full supply	2,816,449
50% supply	1,408,225
Total costs (unit, high)	
Full supply	11,848,850
50% supply	5,924,425
Net benefit (life cycle)	
Full supply	-2,900,926
50% supply	-1,450,463
Net benefit (unit, low)	
Full supply	5,792,752
50% supply	2,896,376
Net benefit (unit, high)	
Full supply	-3,239,649
50% supply	-1,619,825
B/C ratio (life cycle)	
Full supply	0.75
50% supply	0.75
B/C ratio (unit, low)	
Full supply	3.06
50% supply	3.06
B/C ratio (unit, high)	
Full supply	0.73
50% supply	0.73

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
Direct benefits operation																																										
Water supply (401500 x £1.84)	0	671,600	610,545	555,041	504,583	458,712	417,011	379,101	344,637	313,306	284,824	258,931	235,392	213,992	194,539	176,853	160,776	146,160	132,872	120,793	109,812	99,829	90,754	82,503	75,003	68,185																
Water supply (50% of 401500 x £1.84)	0	335,800	305,273	277,521	252,292	229,356	208,505	189,550	172,318	156,653	142,412	129,465	117,696	106,996	97,269	88,427	80,388	73,080	66,436	60,397	54,906	49,915	45,377	41,252	37,502	34,092																
Total (full supply)	0	671,600	610,545	555,041	504,583	458,712	417,011	379,101	344,637	313,306	284,824	258,931	235,392	213,992	194,539	176,853	160,776	146,160	132,872	120,793	109,812	99,829	90,754	82,503	75,003	68,185																
Total (50% supply)	0	335,800	305,273	277,521	252,292	229,356	208,505	189,550	172,318	156,653	142,412	129,465	117,696	106,996	97,269	88,427	80,388	73,080	66,436	60,397	54,906	49,915	45,377	41,252	37,502	34,092																
Direct Costs Construction																																										
Life cycle costs (401,500m ³ /yr, full supply)	0	897,900	816,273	742,066	674,606	613,278	557,525	506,841	460,765	418,877	380,797	346,179	314,708	286,099	260,090	236,445	214,950	195,409	177,645	161,495	146,814	133,467	121,334	110,303	100,276	91,160																
Life cycle costs (401,500m ³ /yr, 50% supply)	0	448,950	408,136	371,033	337,303	306,639	278,763	253,421	230,382	209,438	190,399	173,090	157,354	143,049	130,045	118,223	107,475	97,705	88,822	80,748	73,407	66,734	60,667	55,152	50,138	45,580																
Construction costs (401,500m ³ /yr, full supply)	1,038,462	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Construction costs (401,500m ³ /yr, 50% supply)	519,231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Direct costs Maintenance																																										
Energy cost (low: £0.38/m ³ , full supply)	0	138,700	126,091	114,628	104,207	94,734	86,122	78,293	71,175	64,705	58,822	53,475	48,614	44,194	40,176	36,524	33,204	30,185	27,441	24,946	22,679	20,617	18,743	17,039	15,490	14,082																
Energy cost (low: £0.38/m ³ , 50% supply)	0	69,350	63,045	57,314	52,104	47,367	43,061	39,146	35,588	32,352	29,411	26,737	24,307	22,097	20,088	18,262	16,602	15,093	13,721	12,473	11,339	10,308	9,371	8,519	7,745	7,041																
Energy cost (high: £2.31/m ³ , full supply)	0	843,314	766,649	696,953	633,594	575,995	523,631	476,029	432,753	393,412	357,647	325,134	295,576	268,706	244,278	222,071	201,883	183,530	166,845	151,677	137,889	125,353	113,957	103,598	94,180	85,618																
Energy cost (high: £2.31/m ³ , 50% supply)	0	421,657	383,324	348,477	316,797	287,997	261,816	238,014	216,377	196,706	178,824	162,567	147,788	134,353	122,139	111,035	100,941	91,765	83,423	75,839	68,944	62,677	56,979	51,799	47,090	42,809																
Total																																										
Life cycle costs (full supply)	0	897,900	816,273	742,066	674,606	613,278	557,525	506,841	460,765	418,877	380,797	346,179	314,708	286,099	260,090	236,445	214,950	195,409	177,645	161,495	146,814	133,467	121,334	110,303	100,276	91,160																
Life cycle costs (50% supply)	0	448,950	408,136	371,033	337,303	306,639	278,763	253,421	230,382	209,438	190,399	173,090	157,354	143,049	130,045	118,223	107,475	97,705	88,822	80,748	73,407	66,734	60,667	55,152	50,138	45,580																
Unit costs (low, full supply)	1,038,462	138,700	126,091	114,628	104,207	94,734	86,122	78,293	71,175	64,705	58,822	53,475	48,614	44,194	40,176	36,524	33,204	30,185	27,441	24,946	22,679	20,617	18,743	17,039	15,490	14,082																
Unit costs (high, full supply)	1,038,462	843,314	766,649	696,953	633,594	575,995	523,631	476,029	432,753	393,412	357,647	325,134	295,576	268,706	244,278	222,071	201,883	183,530	166,845	151,677	137,889	125,353	113,957	103,598	94,180	85,618																
Unit costs (low, 50% supply)	519,231	69,350	63,045	57,314	52,104	47,367	43,061	39,146	35,588	32,352	29,411	26,737	24,307	22,097	20,088	18,262	16,602	15,093	13,721	12,473	11,339	10,308	9,371	8,519	7,745	7,041																
Unit costs (high, 50% supply)	519,231	421,657	383,324	348,477	316,797	287,997	261,816	238,014	216,377	196,706	178,824	162,567	147,788	134,353	122,139	111,035	100,941	91,765	83,423	75,839	68,944	62,677	56,979	51,799	47,090	42,809																

Total benefits	
Full supply	6,705,754
50% supply	3,352,877
Total costs (life cycle)	
Full supply	8,965,302
50% supply	4,482,651
Total costs (unit, low)	
Full supply	2,423,346
50% supply	1,211,673
Total costs (unit, high)	
Full supply	9,458,733
50% supply	4,729,366
Net benefit (life cycle)	
Full supply	-2,259,548
50% supply	-1,129,774
Net benefit (unit, low)	
Full supply	4,282,408
50% supply	2,141,204
Net benefit (unit, high)	
Full supply	-2,752,979
50% supply	-1,376,489
B/C ratio (life cycle)	
Full supply	0.75
50% supply	0.75
B/C ratio (unit, low)	
Full supply	2.77
50% supply	2.77
B/C ratio (unit, high)	
Full supply	0.71
50% supply	0.71

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Direct benefits operation																																									
Water supply (401500 x E1.84)	0	710,346	683,025	656,755	631,495	607,207	583,853	561,397	539,805	519,043	499,080	479,884	461,427	443,680	426,615	410,207	394,430	379,260	364,673	350,647	337,160	324,193	311,724	299,734	288,206	277,121															
Water supply (50% of 401500 x E1.84)	0	355,173	341,513	328,377	315,748	303,603	291,926	280,698	269,902	259,521	249,540	239,942	230,714	221,840	213,308	205,104	197,215	189,630	182,336	175,323	168,580	162,096	155,862	149,867	144,103	138,561															
Total (full supply)	0	710,346	683,025	656,755	631,495	607,207	583,853	561,397	539,805	519,043	499,080	479,884	461,427	443,680	426,615	410,207	394,430	379,260	364,673	350,647	337,160	324,193	311,724	299,734	288,206	277,121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (50% supply)	0	355,173	341,513	328,377	315,748	303,603	291,926	280,698	269,902	259,521	249,540	239,942	230,714	221,840	213,308	205,104	197,215	189,630	182,336	175,323	168,580	162,096	155,862	149,867	144,103	138,561															
Direct Costs Construction																																									
Life cycle costs (401,500m3/yr, full supply)	0	949,702	913,175	878,053	844,282	811,809	780,586	750,563	721,695	693,938	667,248	641,585	616,908	593,181	570,366	548,429	527,336	507,054	487,552	468,800	450,769	433,432	416,761	400,732	385,319	370,499															
Life cycle costs (401,500m3/yr, 50% supply)	0	474,851	456,587	439,026	422,141	405,905	390,293	375,282	360,848	346,969	333,624	320,792	308,454	296,591	285,183	274,215	263,668	253,527	243,776	234,400	225,384	216,716	208,381	200,366	192,660	185,250															
Construction costs (401,500m3/yr, full supply)	1,038,462	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Construction costs (401,500m3/yr, 50% supply)	519,231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Direct costs Maintenance																																									
Energy cost (low: E0.38/m3, full supply)	0	146,702	141,060	135,634	130,417	125,401	120,578	115,941	111,481	107,194	103,071	99,107	95,295	91,630	88,105	84,717	81,458	78,325	75,313	72,416	69,631	66,953	64,378	61,902	59,521	57,232															
Energy cost (low: E0.38/m3, 50% supply)	0	73,351	70,530	67,817	65,209	62,701	60,289	57,970	55,741	53,597	51,535	49,553	47,647	45,815	44,053	42,358	40,729	39,163	37,656	36,208	34,815	33,476	32,189	30,951	29,760	28,616															
Energy cost (high: E2.31/m3, full supply)	0	891,966	857,660	824,673	792,955	762,457	733,131	704,934	677,821	651,751	626,684	602,581	579,404	557,120	535,692	515,088	495,277	476,228	457,912	440,300	423,365	407,082	391,425	376,370	361,894	347,975															
Energy cost (high: E2.31/m3, 50% supply)	0	445,983	428,830	412,337	396,477	381,228	366,566	352,467	338,911	325,876	313,342	301,290	289,702	278,560	267,846	257,544	247,639	238,114	228,956	220,150	211,683	203,541	195,712	188,185	180,947	173,988															
Total																																									
Life cycle costs (full supply)	0	949,702	913,175	878,053	844,282	811,809	780,586	750,563	721,695	693,938	667,248	641,585	616,908	593,181	570,366	548,429	527,336	507,054	487,552	468,800	450,769	433,432	416,761	400,732	385,319	370,499															
Life cycle costs (50% supply)	0	474,851	456,587	439,026	422,141	405,905	390,293	375,282	360,848	346,969	333,624	320,792	308,454	296,591	285,183	274,215	263,668	253,527	243,776	234,400	225,384	216,716	208,381	200,366	192,660	185,250															
Unit costs (low, full supply)	1,038,462	146,702	141,060	135,634	130,417	125,401	120,578	115,941	111,481	107,194	103,071	99,107	95,295	91,630	88,105	84,717	81,458	78,325	75,313	72,416	69,631	66,953	64,378	61,902	59,521	57,232															
Unit costs (high, full supply)	1,038,462	891,966	857,660	824,673	792,955	762,457	733,131	704,934	677,821	651,751	626,684	602,581	579,404	557,120	535,692	515,088	495,277	476,228	457,912	440,300	423,365	407,082	391,425	376,370	361,894	347,975															
Unit costs (low, 50% supply)	519,231	73,351	70,530	67,817	65,209	62,701	60,289	57,970	55,741	53,597	51,535	49,553	47,647	45,815	44,053	42,358	40,729	39,163	37,656	36,208	34,815	33,476	32,189	30,951	29,760	28,616															
Unit costs (high, 50% supply)	519,231	445,983	428,830	412,337	396,477	381,228	366,566	352,467	338,911	325,876	313,342	301,290	289,702	278,560	267,846	257,544	247,639	238,114	228,956	220,150	211,683	203,541	195,712	188,185	180,947	173,988															

Total benefits	
Full supply	11,540,968
50% supply	5,770,484
Total costs (life cycle)	
Full supply	15,429,772
50% supply	7,714,886
Total costs (unit, low)	
Full supply	3,421,923
50% supply	1,710,961
Total costs (unit, high)	
Full supply	15,530,206
50% supply	7,765,103
Net benefit (life cycle)	
Full supply	-3,888,804
50% supply	-1,944,402
Net benefit (unit, low)	
Full supply	8,119,045
50% supply	4,059,523
Net benefit (unit, high)	
Full supply	-3,989,239
50% supply	-1,994,619
B/C ratio (life cycle)	
Full supply	0.75
50% supply	0.75
B/C ratio (unit, low)	
Full supply	3.32
50% supply	3.32
B/C ratio (unit, high)	
Full supply	0.74
50% supply	0.74

Non Structural RAW DATA

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40			
Direct benefits operation																																												
Water volume new storage (55,800m3 @ £1.84/m3)							102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672	102,672		
Water volume fog nets (40m2 total, small (40x1m2) @ £1.84/m3)											2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781	2,781		
Water volume fog nets (40m2 total, large(1x40m2) @ £1.84)											495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	495	
Water volume habitat restoration 146,886m3/annum											270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270	270,270		
Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40			
Direct Costs Construction																																												
New storage: Levelwood							53,590																																					
New storage: Harpers 2							253,845																																					
New storage: Redhill							282,050																																					
New storage: Hutts Gate							197,435																																					
Fog collection (40m2 total, small, low cost £58)												2,320																																
Fog collection (40m2 total, small, high cost £154)												6,160																																
Fog collection (40m2 total, large low cost £769)												770																																
Fog collection (40m2 total, large, high cost £1154)												1,150																																
Habitat restoration	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640		
Total																																												
New storage	0	0	0	0	0	0	786,920	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fog collection (40m2 total, small, low cost £58)	0	0	0	0	0	0	0	0	0	0	2,320	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, small, high cost £154)	0	0	0	0	0	0	0	0	0	0	6,160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, large low cost £769)	0	0	0	0	0	0	0	0	0	0	770	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, large, high cost £1154)	0	0	0	0	0	0	0	0	0	0	1,150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Habitat restoration	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640		

Total benefits	
New storage	2,053,440
Fog collection (small)	44,490
Fog collection (large)	7,913
Habitat restoration	4,324,324
Total costs	
New storage	786,920
Fog collection (40m2 total, small, low cost £58)	4,640
Fog collection (40m2 total, small, high cost £154)	12,320
Fog collection (40m2 total, large low cost £769)	1,540
Fog collection (40m2 total, large, high cost £1154)	2,300
Habitat restoration	18,606,400
Net benefits	
New storage	1,266,520
Fog collection (40m2 total, small, low cost £58)	39,850
Fog collection (40m2 total, small, high cost £154)	32,170
Fog collection (40m2 total, large low cost £769)	6,373
Fog collection (40m2 total, large, high cost £1154)	5,613
Habitat restoration	-14,282,076
B/C ratios	
New storage	2.61
Fog collection (40m2 total, small, low cost £58)	9.59
Fog collection (40m2 total, small, high cost £154)	3.61
Fog collection (40m2 total, large low cost £769)	5.14
Fog collection (40m2 total, large, high cost £1154)	3.44
Habitat restoration	0.23

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40			
Direct benefits operation																																												
Water volume new storage (55,800m3 @ £1.84/m3)	0	0	0	0	0	68,415	63,939	59,756	55,847	52,193	48,779	45,588	42,605	39,818	37,213	34,779	32,503	30,377	28,390	26,532	24,797	23,174	21,658	20,241	18,917	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Water volume fog nets (40m2 total, small (40x1m2) @ £1.84/m3)	0	0	0	0	0	0	0	0	0	1,414	1,321	1,235	1,154	1,078	1,008	942	880	823	769	719	672	628	587	548	512	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Water volume fog nets (40m2 total, large(1x40m2) @ £1.84)	0	0	0	0	0	0	0	0	0	251	235	220	205	192	179	168	157	146	137	128	119	112	104	98	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Water volume habitat restoration 146,886m3/annum	0	0	0	0	0	0	0	0	0	137,392	128,403	120,003	112,153	104,815	97,958	91,550	85,561	79,963	74,732	69,843	65,274	61,004	57,013	53,283	49,797	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40			
Direct Costs Construction																																												
New storage: Levelwood	0	0	0	0	0	35,709	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
New storage: Harpers 2	0	0	0	0	0	169,148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New storage: Redhill	0	0	0	0	0	187,942	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New storage: Hutts Gate	0	0	0	0	0	131,559	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, small, low cost £58)	0	0	0	0	0	0	0	0	0	1,179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, small, high cost £154)	0	0	0	0	0	0	0	0	0	3,131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, large low cost £769)	0	0	0	0	0	0	0	0	0	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, large, high cost £1154)	0	0	0	0	0	0	0	0	0	585	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Habitat restoration	1,860,640	1,738,916	1,625,155	1,518,836	1,419,473	1,326,611	1,239,823	1,158,713	1,082,909	1,012,065	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total																																												
New storage	0	0	0	0	0	524,358	0	0	0	1,179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fog collection (40m2 total, small, low cost £58)	0	0	0	0	0	0	0	0	0	1,179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, small, high cost £154)	0	0	0	0	0	0	0	0	0	3,131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, large low cost £769)	0	0	0	0	0	0	0	0	0	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, large, high cost £1154)	0	0	0	0	0	0	0	0	0	585	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Habitat restoration	1,860,640	1,738,916	1,625,155	1,518,836	1,419,473	1,326,611	1,239,823	1,158,713	1,082,909	1,012,065	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Total benefits	
New storage	775,521
Fog collection (small)	14,288
Fog collection (large)	2,541
Habitat restoration	1,388,743
Total costs	
New storage	524,358
Fog collection (40m2 total, small, low cost £58)	1,779
Fog collection (40m2 total, small, high cost £154)	4,723
Fog collection (40m2 total, large low cost £769)	590
Fog collection (40m2 total, large, high cost £1154)	882
Habitat restoration	13,983,142
Net benefits	
New storage	251,163
Fog collection (40m2 total, small, low cost £58)	12,509
Fog collection (40m2 total, small, high cost £154)	9,564
Fog collection (40m2 total, large low cost £769)	1,951
Fog collection (40m2 total, large, high cost £1154)	1,660
Habitat restoration	-12,594,398
B/C ratios	
New storage	1.48
Fog collection (40m2 total, small, low cost £58)	8.03
Fog collection (40m2 total, small, high cost £154)	3.02
Fog collection (40m2 total, large low cost £769)	4.30
Fog collection (40m2 total, large, high cost £1154)	2.88
Habitat restoration	0.10

Non Structural 10%		0.1																																											
Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40				
Direct benefits operation																																													
Water volume new storage (55,800m ³ @ £1.84/m ³)	0	0	0	0	0	0	57,956	52,687	47,897	43,543	39,585	35,986	32,714	29,740	27,037	24,579	22,344	20,313	18,466	16,788	15,262	13,874	12,613	11,466	10,424	9,476	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Water volume fog nets (40m ² total, small (40x1m ²) @ £1.84/m ³)	0	0	0	0	0	0	0	0	0	0	1,072	975	886	805	732	666	605	550	500	455	413	376	342	311	282	257	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Water volume fog nets (40m ² total, large(1x40m ²) @ £1.84)	0	0	0	0	0	0	0	0	0	0	191	173	158	143	130	118	108	98	89	81	74	67	61	55	50	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Water volume habitat restoration 146,886m ³ /annum	0	0	0	0	0	0	0	0	0	0	104,201	94,728	86,116	78,288	71,171	64,701	58,819	53,472	48,610	44,191	40,174	36,522	33,202	30,183	27,439	24,945	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Direct Costs Construction																																													
New storage: Levelwood	0	0	0	0	0	0	30,250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
New storage: Harpers 2	0	0	0	0	0	0	143,289	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New storage: Redhill	0	0	0	0	0	0	159,210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New storage: Hutts Gate	0	0	0	0	0	0	111,447	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m ² total, small, low cost £58)	0	0	0	0	0	0	0	0	0	0	894	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m ² total, small, high cost £154)	0	0	0	0	0	0	0	0	0	0	2,375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m ² total, large low cost £769)	0	0	0	0	0	0	0	0	0	0	297	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m ² total, large, high cost £1154)	0	0	0	0	0	0	0	0	0	0	443	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Habitat restoration	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total																																													
New storage	0	0	0	0	0	0	444,196	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fog collection (40m ² total, small, low cost £58)	0	0	0	0	0	0	0	0	0	0	894	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m ² total, small, high cost £154)	0	0	0	0	0	0	0	0	0	0	2,375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m ² total, large low cost £769)	0	0	0	0	0	0	0	0	0	0	297	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m ² total, large, high cost £1154)	0	0	0	0	0	0	0	0	0	0	443	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Habitat restoration	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	1,860,640	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total benefits	
New storage	542,750
Fog collection (small)	9,226
Fog collection (large)	1,641
Habitat restoration	896,761
Total costs	
New storage	444,196
Fog collection (40m ² total, small, low cost £58)	1,239
Fog collection (40m ² total, small, high cost £154)	3,291
Fog collection (40m ² total, large low cost £769)	411
Fog collection (40m ² total, large, high cost £1154)	614
Habitat restoration	18,606,400
Net benefits	
New storage	98,554
Fog collection (40m ² total, small, low cost £58)	7,987
Fog collection (40m ² total, small, high cost £154)	5,936
Fog collection (40m ² total, large low cost £769)	1,230
Fog collection (40m ² total, large, high cost £1154)	1,027
Habitat restoration	-17,709,639
B/C ratios	
New storage	1.22
Fog collection (40m ² total, small, low cost £58)	7.44
Fog collection (40m ² total, small, high cost £154)	2.80
Fog collection (40m ² total, large low cost £769)	3.99
Fog collection (40m ² total, large, high cost £1154)	2.67
Habitat restoration	0.05

Non Structural 4%		0.04																																										
Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40			
Direct benefits operation																																												
Water volume new storage (55,800m3 @ £1.84/m3)	0	0	0	0	0	0	81,143	78,022	75,021	72,136	69,362	66,694	64,129	61,662	59,291	57,010	54,817	52,709	50,682	48,732	46,858	45,056	43,323	41,657	40,055	38,514	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Water volume fog nets (40m2 total, small (40x1m2) @ £1.84/m3)	0	0	0	0	0	0	0	0	0	0	1,878	1,806	1,737	1,670	1,606	1,544	1,485	1,427	1,373	1,320	1,269	1,220	1,173	1,128	1,085	1,043	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Water volume fog nets (40m2 total, large(1x40m2) @ £1.84)	0	0	0	0	0	0	0	0	0	0	334	321	309	297	286	275	264	254	244	235	226	217	209	201	193	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Water volume habitat restoration 146,886m3/annum	0	0	0	0	0	0	0	0	0	0	182,585	175,562	168,810	162,317	156,074	150,071	144,299	138,750	133,413	128,282	123,348	118,604	114,042	109,656	105,438	101,383	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40			
Direct Costs Construction																																												
New storage: Levelwood	0	0	0	0	0	0	42,353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New storage: Harpers 2	0	0	0	0	0	0	200,617	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New storage: Redhill	0	0	0	0	0	0	222,908	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New storage: Hutts Gate	0	0	0	0	0	0	156,036	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, small, low cost £58)	0	0	0	0	0	0	0	0	0	0	1,567	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, small, high cost £154)	0	0	0	0	0	0	0	0	0	0	4,161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fog collection (40m2 total, large low cost £769)	0	0	0	0	0	0	0	0	0	0	520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fog collection (40m2 total, large, high cost £1154)	0	0	0	0	0	0	0	0	0	0	777	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Habitat restoration	1,860,640	1,789,077	1,720,266	1,654,102	1,590,483	1,529,310	1,470,491	1,413,933	1,359,551	1,307,261	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total																																												
New storage	0	0	0	0	0	0	621,914	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fog collection (40m2 total, small, low cost £58)	0	0	0	0	0	0	0	0	0	0	1,567	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fog collection (40m2 total, small, high cost £154)	0	0	0	0	0	0	0	0	0	0	4,161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fog collection (40m2 total, large low cost £769)	0	0	0	0	0	0	0	0	0	0	520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fog collection (40m2 total, large, high cost £1154)	0	0	0	0	0	0	0	0	0	0	777	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Habitat restoration	1,860,640	1,789,077	1,720,266	1,654,102	1,590,483	1,529,310	1,470,491	1,413,933	1,359,551	1,307,261	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Total benefits	
New storage	1,146,873
Fog collection (small)	22,764
Fog collection (large)	4,049
Habitat restoration	2,212,634
Total costs	
New storage	621,914
Fog collection (40m2 total, small, low cost £58)	2,626
Fog collection (40m2 total, small, high cost £154)	6,973
Fog collection (40m2 total, large low cost £769)	872
Fog collection (40m2 total, large, high cost £1154)	1,302
Habitat restoration	15,695,115
Net benefits	
New storage	524,958
Fog collection (40m2 total, small, low cost £58)	20,138
Fog collection (40m2 total, small, high cost £154)	15,791
Fog collection (40m2 total, large low cost £769)	3,177
Fog collection (40m2 total, large, high cost £1154)	2,747
Habitat restoration	-13,482,481
B/C ratios	
New storage	1.84
Fog collection (40m2 total, small, low cost £58)	8.67
Fog collection (40m2 total, small, high cost £154)	3.26
Fog collection (40m2 total, large low cost £769)	4.65
Fog collection (40m2 total, large, high cost £1154)	3.11
Habitat restoration	0.14

Option	Items	Volume of water	Costs	Benefits	Comments	
Option 1	BAU					
	Public storage	112517		m3		
	Demand	1100		m3/day		
	Demand	401500		m3/annum (3.6x storage capacity)		
	Bowers		8000	£ per week	8 weeks every 5 yrs (yrs 5-30), then annually (yrs 31-40)	
	Bowers, annual yrs 5-30		1000	£/annum		
	Bowers, annual yrs 31-40		8000	£/annum		
	Limited new storage					
	Redhill	20000		m3		
	Hutts Gate	14000		m3		
Redhill		282,050				
Hutts Gate		197,435				
Option 2	New reservoir					
	Fisher's Valley	260000		m3		
	Construction costs		2,087,328			
	Sub total A		2,087,328			
	Landscaping (5% of sub total A)		104,366			
	Miscellaneous (10% of sub total A)		208,733			
	Sub total B		2,400,427			
	Preliminary and general (30% of sub total B)		720,128			
	Sub total C		3,120,555			
	Contingencies (17.5% of sub total C)		546,097			
	Total construction cost		3,666,652			
	Cost per m3		14.10			
	Option 3	Desalination plant				
		Cost of plant per 1000m3/day		1,000,000	US\$	
		Cost of plant per 1000m3/day		769,231	£, at £1=\$1.30	
Cost of plant to meet 3000/person/day for 4500 people			1,350,000	US\$		
Cost of plant to meet 3000/person/day for 4500 people			1,038,462	£, at £1=\$1.30		
Energy costs per m3		0.5 - 3	US\$			
Energy costs per m3		0.38 - 2.31	£, at £1=\$1.30			
Ascension Island costs per m3 (desalination and distribution)		25 - 30	US\$			
Life cycle costs (CAPEX + OPEX) for small plant (<4000m3/day)			3.20	US\$/m3 https://www.advisian.com/en-gb/global-pe		
Life cycle costs (CAPEX + OPEX) for small plant (<4000m3/day)			2.46	£/m3, at £1=\$1.30		
Option 4	Mixed measures					
	Phase 1, yrs 1-5: increase storage, R&D					
	Phase 2, yrs 5-10: develop aquifer and mist netting					
	Phase 3, yrs 10-25: replace BAU with aquifer/mist net supply					
	Fog collectors (small)	75 - 200	US\$			
	Fog collectors (small)	58 - 154	£, at £1=\$1.30			
	Fog collectors (large 40m2)	1000 - 1500	US\$			
	Fog collectors (large 40m2)	769 - 1154	£, at £1=\$1.30			
	Fog collection rates 1	3800	l/day 70m2 surface (South Africa)			
	Fog collection rates 2	4500	l/day 40m2 surface (Yemen)			
	Fog collection rates 3	4000	l/day 200m2 surface (Cape Verde)			
	Fog collection litres/day/m2 1	54	70m2 surface (South Africa)			
	Fog collection litres/day/m2 2	113	40m2 surface (Yemen)			
	Fog collection litres/day/m2 3	20	200m2 surface (Cape Verde)			
	Number of fog days @82%	336	DRUS051 Final Report (Table 17, p106)			
Fog collection m3/yr/m2 1	18.23	70m2 surface (South Africa)				
Fog collection m3/yr/m2 2	37.78	40m2 surface (Yemen)				
Fog collection m3/yr/m2 3	6.72	200m2 surface (Cape Verde)				
Fog collector lifespan	10	years				
New storage						
Levelwood	3800	m3				
Rural Retreat	?					
Harpers 2 increase from 7000 to 25000 m3	18000	m3				
Western St Helena	?	replace untreated supply				
Redhill	20000	m3				
Hutts Gate	14000	m3				
Based on Fishers Valley cost per m3						
Levelwood	53,590					
Rural Retreat						
Harpers 2 increase from 7000 to 25000 m3	253,845					
Western St Helena						
Redhill	282,050					
Hutts Gate	197,435					
Total new storage	55800	786,920				
Habitat restoration						
Wells Gutt	8.02	ha potential restoration area				
Grapevine Gutt	8.02	ha potential restoration area				
Wells Gutt	2	m3/m2/annum current water yield				
Grapevine Gutt	0.5	m3/m2/annum current water yield				
Wells Gutt	160400	m3/annum current water yield				
Grapevine Gutt	40100	m3/annum current water yield				
Total additional yield	146,886	m3/annum				
Restoration costs		£/m2				
Restoration costs		18606400	£ total			
Restoration costs		3721280				

ITEM NO.	PAVEMENT CLASSIFICATION	DESCRIPTION	UNIT	QTY	RATE UNIT	AMOUNT UNIT
1		SITE CLEARANCE				
1.1		Flux	M2	0.4	5,714.29	2,285.71
1.2		Flux	M2	0.7	7,142.86	4,999.99
2		WORKS DIVERSIONS				
2		EXCAVATION (embankment)	M3	1.0	2,897.14	2,897.14
3.1		Bank				
3.1.1		All Materials	M3	8,000	4.57	36,560.00
3.1.2		Extra-Cover for rock	M3	300	17.14	5,142.00
3.2		Quarried				
3.2.1		All Materials	M3	4,800	6.20	29,760.00
3.2.1		Extra-Cover for rock	M3	1,400	17.14	24,000.00
4		EXCAVATION (Barrow)				
4		Bank				
4.1		All Materials	M3	80,000	4.57	365,760.00
4.1.2		Extra-Cover for rock	M3	40,000	17.14	685,600.00
4.2		Quarried				
4.2.1		All Materials	M3	-	0.00	0.00
4.2.2		Extra-Cover for rock	M3	-	17.14	0.00
5		PREPARATION OF SOLING (Embankment)				
5		All Materials	M3	11,000	3.29	36,190.00
5.2		Extra-Cover for rock	M3	1,500	4.87	7,305.00
6		DRILLING AND GRouting				
6.1		Drilling	M	100	149.00	14,900.00
6.1.2		Drilling	M	851	42.31	35,985.81
6.1.2		Water Pressure Test	M	200	177.14	35,428.00
6.1.3		Grouting	M	13	44.64	580.32
6.1.3		Consolidation Grouting				
6.1.3.1		Drilling	M	-	149.00	0.00
6.1.3.2		Drilling	M	-	42.31	0.00
6.1.3.3		Water Pressure Test	M	-	177.14	0.00
6.1.3.4		Grouting	M	-	44.64	0.00
7		EMBANKMENT				
7.1		Earth Fill	M3	83,300	6.80	566,340.00
7.2		Flux	M2	2,800	29.86	83,608.00
7.3		Flux	M2	3,000	28.71	86,130.00

BAU Replacement Dam PSL 10 - 11.04

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE UNIT	AMOUNT UNIT
7.4	Flux	M2	2,800	29.86	83,608.00
7.5	Outlet beyond 5 km	M2	-	-	Included above
8	OUTLET WORKS (Civil works)				
8.1	Intake structure and access bridge	Sum	1.00	54,280.71	54,280.71
8.2	Provision of outlet to outlet structure	Sum	1.00	8,714.29	8,714.29
8.3	Outlet structure	Sum	1.00	8,571.43	8,571.43
9	CONCRETE WORKS (Railway embankment)				
9.1	Formwork				
9.1.1	Formwork	M2	-	22.86	0.00
9.1.2	Intake	M2	228	25.71	5,861.86
9.2	Concrete				
9.2.1	Mass	M3	-	102.86	0.00
9.2.2	Structural	M3	142	114.29	16,229.57
9.3	Reinforcing	T	13	800.00	10,400.00
10	LABOUR WORKS				
10.1	Station losses	M3	200.00	75.00	15,000.00
10.2	Station materials	M3	700.00	75.00	52,500.00
11	MECHANICAL EQUIPMENT				
11.1	Valves, gates & screens	Sum	1	17,142.86	17,142.86
11.2	Gates and valves	Sum	1	8,571.43	8,571.43
11.3	Pumps	T	1.0	8,571.43	8,571.43
12	FENCING	M	1,000.00	13.00	13,000.00
13	ACCESS ROAD	M	0.5	28,571.43	14,285.71
14	SUB TOTAL A (Items 1 - 13)	Sum	-	-	3,087,537.86
15	LANDSCAPING (% of Item 20)	%	5%	-	154,376.93
16	MISCELLANEOUS (% of Item 20)	%	10%	-	308,753.86
17	SUB TOTAL B (Items 14 - 16)	Sum	-	-	463,130.72
18	PRELIMINARY & GENERAL (% of Sub Total B)	%	30%	-	138,939.22
19	SUB TOTAL C (Items 17 - 18)	Sum	-	-	602,070.00
20	CONTINGENCIES (% of Item Total C)	%	17.5%	-	105,362.25
21	TOTAL CONSTRUCTION COST	Sum	-	-	3,689,607.86
22	ANGLARY WORKS				
22.1	Reinforce formwork	M	-	0.00	0.00
22.2	Reinforce access road	M	-	14,285.71	0.00
22.3	Provide electricity to site	Sum	-	0.00	0.00
22.4	Water to site for construction	Sum	-	0.00	0.00
22.5	Cost of land acquisition	Sum	-	0.00	0.00
23	TOTAL PROJECT COST	Sum	-	-	3,689,607.86

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