
Robin Hood's Bay Coastal Strategy

Appendix D1

Economic appraisal

Project Summary Sheet

Client/Authority Scarborough Borough Council		Prepared (date)	10/11/2011
Project name Robin Hood's Bay CSS		Printed	14/12/2012
Policy Unit Base date for estimates (year 0) Scaling factor (e.g. £m, £k, £) Year Discount Rate Optimism bias adjustment factor	24.1 Oct-2012 £ 0 3.5% 60%	(used for all costs, losses and benefits)	Prepared by Checked by Checked date JC JC

Option number	Costs and benefits £						
	Option 1a	Option 1b	Option 2	Option 3			
Option name	NAI	NAI (with H&S)	AM(Property Roll Back Scheme)	All (Rock Armour)			
AEP or SoP (where relevant)							
COSTS:							
PV capital costs	0						
PV operation and maintenance costs [Pvc Total]	0	88,391	139,251	1,186,836			
PV other	0						
Optimism bias adjustment	0	53,035	83,550	712,101			
PV negative costs (e.g. sales)	0	0	0	0			
PV contributions							
Total PV Costs £ excluding contributions	0	141,425	222,801	1,898,937			
Total PV Costs £ taking contributions into account	0	141,425	222,801	1,898,937			
BENEFITS:							
PV monetised flood damages	0	0	0	0			
PV monetised flood damages avoided							
PV monetised erosion damages	160,226	160,226	8,337	8,337			
PV monetised erosion damages avoided (protected)		0	151,889	151,889			
Total monetised PV damages £	160,226	160,226	8,337	8,337			
Total monetised PV benefits £		0	151,889	151,889			
PV damages (from scoring and weighting)							
PV damages avoided/benefits (from scoring and weighting)							
PV benefits from ecosystem services							
Total PV damages £	160,226	160,226	8,337	8,337			
Total PV benefits £		0	151,889	151,889			
DECISION-MAKING CRITERIA:							
excluding contributions							
<i>Based on total PV benefits (includes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-141,425	-70,912	-1,747,048			
Average benefit/cost ratio BCR		0.0	0.68	0.1			
Incremental benefit/cost ratio IBCR							
			Highest bcr				
<i>Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-141,425	-70,912	-1,747,048			
Average benefit/cost ratio BCR		0.0	0.7	0.1			
Incremental benefit/cost ratio IBCR				0.0			
			Highest bcr				
including contributions							
<i>Taking account of contributions (includes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-141,425	-70,912	-1,747,048			
Average benefit/cost ratio BCR		0.0	0.7	0.1			
Incremental benefit/cost ratio IBCR				1.9			
			Highest bcr	IBCR>1			
<i>Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-141,425	-70,912	-1,747,048			
Average benefit/cost ratio BCR		0.0	0.7	0.1			
Incremental benefit/cost ratio IBCR							
			Highest bcr				
Best practicable environmental option (WFD)							
Brief description of options:							
Option 1a	NAI						
Option 1b	NAI (with H&S)						
Option 2	AM(Property Roll Back Scheme)						
Option 3	All (Rock Armour)						

Comments and assumptions:

Project Summary Sheet					
Client/Authority			Prepared (date) 19/07/2010		
SBC			Printed 14/12/2012		
Project name			Prepared by NC		
RHB CSS			Checked by ZH		
Policy Unit			Checked date 14/12/2012		
24.1					
Base date for estimates (year 0)			Oct-2012		
Scaling factor (e.g. £m, £k, £)			£ (used for all costs, losses and benefits)		
Principle land use band			B (A to E)		
Discount rate			3%		
Costs and benefits of options					
		Costs and benefits £			
	Option 1a	Option 1b	Option 2	Option 3	
PV costs PVc	-	141,425.46	222,801.16	1,898,937.09	
PV damage PVd	160,226.12	160,226.12	8,337.02	8,337.02	
PV damage avoided		-	151,889.10	151,889.10	
PV assets Pva					
PV asset protection benefits		-	-	-	
Total PV benefits PVb		-	151,889.10	151,889.10	
Net Present Value NPV	-	141,425.46	- 70,912.06	- 1,747,047.99	
Average benefit/cost ratio		-	0.68	0.08	
Incremental benefit/cost ratio			1.87	-	
		-	Highest b/c	-	
Brief description of options:					
Option 1a	NAI				
Option 1b	NAI (with H&S)				
Option 2	AM(Property Roll Back Scheme)				
Option 3	All (Rock Armour)				
Notes:					
1) Benefits will normally be expressed either in terms of damage avoided or asset values protected. Care is needed to avoid double counting					
2) PV damage avoided is calculated as PV damage (No Project) - PV damage (Option)					
PV asset protection benefits are calculated as PVa (Option) - PVa (No Project)					
PV benefits calculated as PV damage avoided + PV asset protection benefits					
3) Incremental benefit/cost ratio is calculated as:					
$(PVb(\text{current option}) - PVb(\text{previous option})) / (PVc(\text{current option}) - PVc(\text{previous option}))$					

Erosion Loss Calculation Sheet with delay options						Sheet Nr. 3		
Client/Authority SBC								
Project name RHB CSS		Option: Option 1b Option 2 Option 3		Delay (yrs) 0 100 100		Prepared (date) 19/07/2010 Printed 29/10/2010 Prepared by NC Checked by ZH Checked date 29/10/2010		
Policy Unit Base date for estimates (year 0) Scaling factor (e.g. £m, £k, £) Discount rate		24.1 Oct-2012 £ 3%						
Ref	Asset Description	MV £	Year	Prob of loss without project in year	Expected Present Value of asset losses £			
					Without Project	Option 1b	Option 2	Option 3
0	Abbey Lane farm storage house	200,000	100	0.1	1,041	1,041	54	54
1	Abbey Lane farm storage house	200,000	100	0.2	2,081	2,081	108	108
2	Abbey Lane farm storage house	200,000	100	0.3	3,122	3,122	162	162
3	Abbey Lane farm storage house	200,000	100	0.4	4,163	4,163	217	217
4	Saltwick Bay caravan site	900,000	60	0.1	15,276	15,276	795	795
5	Saltwick Bay caravan site	900,000	61	0.2	29,662	29,662	1,543	1,543
6	Saltwick Bay caravan site	900,000	62	0.3	43,197	43,197	2,248	2,248
7	Saltwick Bay caravan site	900,000	63	0.4	55,919	55,919	2,910	2,910
8	Agricultural Land	18000.00	25	0.1	860	860	45	45
9	Agricultural Land	36000.00	50	0.2	1,642	1,642	85	85
10	Agricultural Land	54000.00	75	0.3	1,765	1,765	92	92
11	Agricultural Land	72000.00	100	0.4	1,499	1,499	78	78
Totals		4,580,000			160,226	160,226	8,337	8,337
Notes								
Make one entry in the description column for each property (or group of properties) as this determines subsequent calculation MV = risk free market value at base date for estimate - must be entered on each line when probability distribution is used Equivalent annual value = MV x discount rate (assumes infinite life) Year is year in which there is the probability of loss shown, years must be entered consecutively for each property or group If no distribution is used enter year of expected year of loss and enter 1.0 in probability column Columns G to K show expected present values of asset losses with each option, assuming extensions of life entered above The loss is calculated using the formula $PV \text{ loss} = MV * \text{Prob of loss} * (1 - (1 - 1/((1+r)^{\text{Year of loss}}))) = MV * \text{Prob of loss} / ((1+r)^{\text{Year of loss}})$ Additional properties can be entered by inserting lines above line 62 and copying all formulae, including hidden calculation in column C Asset value in subsequent years for each property is additional value for that property if life extended								

Present Value Costs for all options														Sheet Nr. 4					
Client/Authority: SBC Project name: RHB CSS Policy Unit: 24.1 Base date for estimates (year 0): Oct-2012 Scaling factor (e.g. £m, £k, £): £ Discount rate: 3%														Results £ Option 1 (Do nothing): 0.00 Option 2 Do Min H&S: 141425.46 Option 3 Roll back study option: 222801.16 Option 4 Rock Armour: 1898937.09				Prepared (date): 19/07/2010 Printed: 29/10/2010 Prepared by: NC Checked by: ZH Checked date: 29/10/2010	
year	Discount Factor	Option 1 (Do nothing)			Option 2 Do Min H&S			Option 3 Roll back study option			Option 4 Rock Armour			TOTALS:					
		Capital	Maint.	Other	Capital	Maint.	Other	Capital	Maint.	Other	Capital	Maint.	Other	Cash	PV				
0	1.000	0	0	0	6210.24	0	765217.527	771427.77	141425.46	70210.24	0.00	780217.53	850427.77	222801.16	1800000.00	0.00	1800000.00	1898937.09	
1	0.971						1300	1300.00	1262.14			16300	16300.00	15825.24	1800000		1800000.00	1747572.82	
2	0.943						1339	1339.00	1262.14	64000		1339	65339.00	61588.27			0.00	0.00	
3	0.915						1379.17	1379.17	1262.14			1379.17	1379.17	1262.14			0.00	0.00	
4	0.888						1420.5451	1420.55	1262.14			1420.5451	1420.55	1262.14			0.00	0.00	
5	0.863						1463.16145	1463.16	1262.14			1463.16145	1463.16	1262.14			0.00	0.00	
6	0.837				6210.24		1507.0563	7717.30	6463.11			1507.0563	7717.30	6463.11			0.00	0.00	
7	0.813						1552.26799	1552.27	1262.14			1552.26799	1552.27	1262.14			0.00	0.00	
8	0.789						1598.83603	1598.84	1262.14			1598.83603	1598.84	1262.14			0.00	0.00	
9	0.766						1646.80111	1646.80	1262.14			1646.80111	1646.80	1262.14			0.00	0.00	
10	0.744						1696.20514	1696.21	1262.14			1696.20514	1696.21	1262.14			0.00	0.00	
11	0.722						1747.09129	1747.09	1262.14			1747.09129	1747.09	1262.14			0.00	0.00	
12	0.701						1799.50403	1799.50	1262.14			1799.50403	1799.50	1262.14			0.00	0.00	
13	0.681						1853.48915	1853.49	1262.14			1853.48915	1853.49	1262.14			0.00	0.00	
14	0.661						1909.09383	1909.09	1262.14			1909.09383	1909.09	1262.14			0.00	0.00	
15	0.642						1966.36664	1966.37	1262.14			1966.36664	1966.37	1262.14			0.00	0.00	
16	0.623						2025.35764	2025.36	1262.14			2025.35764	2025.36	1262.14			0.00	0.00	
17	0.605						2086.11837	2086.12	1262.14			2086.11837	2086.12	1262.14			0.00	0.00	
18	0.587						2148.70192	2148.70	1262.14			2148.70192	2148.70	1262.14			0.00	0.00	
19	0.570						2213.16298	2213.16	1262.14			2213.16298	2213.16	1262.14			0.00	0.00	
20	0.554						2279.55787	2279.56	1262.14			2279.55787	2279.56	1262.14			0.00	0.00	
21	0.538						2347.94461	2347.94	1262.14			2347.94461	2347.94	1262.14			0.00	0.00	
22	0.522						2418.38294	2418.38	1262.14			2418.38294	2418.38	1262.14			0.00	0.00	
23	0.507						2490.93443	2490.93	1262.14			2490.93443	2490.93	1262.14			0.00	0.00	
24	0.492						2565.66246	2565.66	1262.14			2565.66246	2565.66	1262.14			0.00	0.00	
25	0.478						2642.63234	2642.63	1262.14			2642.63234	2642.63	1262.14			0.00	0.00	
26	0.464						2721.91131	2721.91	1262.14			2721.91131	2721.91	1262.14			0.00	0.00	
27	0.450						2803.56865	2803.57	1262.14			2803.56865	2803.57	1262.14			0.00	0.00	
28	0.437						2887.67571	2887.68	1262.14			2887.67571	2887.68	1262.14			0.00	0.00	
29	0.424						2974.30598	2974.31	1262.14			2974.30598	2974.31	1262.14			0.00	0.00	
30	0.412						3063.53516	3063.54	1262.14			3063.53516	3063.54	1262.14			0.00	0.00	
31	0.400						3155.44121	3155.44	1262.14			3155.44121	3155.44	1262.14			0.00	0.00	
32	0.388						3250.10445	3250.10	1262.14			3250.10445	3250.10	1262.14			0.00	0.00	
33	0.377						3347.60758	3347.61	1262.14			3347.60758	3347.61	1262.14			0.00	0.00	
34	0.366						3448.03581	3448.04	1262.14			3448.03581	3448.04	1262.14			0.00	0.00	
35	0.355						3551.47688	3551.48	1262.14			3551.47688	3551.48	1262.14			0.00	0.00	
36	0.345						3658.02119	3658.02	1262.14			3658.02119	3658.02	1262.14			0.00	0.00	
37	0.335						3767.76183	3767.76	1262.14			3767.76183	3767.76	1262.14			0.00	0.00	
38	0.325						3880.79468	3880.79	1262.14			3880.79468	3880.79	1262.14			0.00	0.00	
39	0.316						3997.21852	3997.22	1262.14			3997.21852	3997.22	1262.14			0.00	0.00	
40	0.307						4117.13508	4117.14	1262.14			4117.13508	4117.14	1262.14			0.00	0.00	
41	0.298						4240.64913	4240.65	1262.14			4240.64913	4240.65	1262.14			0.00	0.00	
42	0.289						4367.86866	4367.87	1262.14			4367.86866	4367.87	1262.14			0.00	0.00	
43	0.281						4498.90466	4498.90	1262.14			4498.90466	4498.90	1262.14			0.00	0.00	
44	0.272						4633.8718	4633.87	1262.14			4633.8718	4633.87	1262.14			0.00	0.00	
45	0.264						4772.88796	4772.89	1262.14			4772.88796	4772.89	1262.14			0.00	0.00	
46	0.257						4916.07459	4916.07	1262.14			4916.07459	4916.07	1262.14			0.00	0.00	
47	0.249						5063.55683	5063.56	1262.14			5063.55683	5063.56	1262.14			0.00	0.00	
48	0.242						5215.46354	5215.46	1262.14			5215.46354	5215.46	1262.14			0.00	0.00	
49	0.235						5371.92744	5371.93	1262.14			5371.92744	5371.93	1262.14			0.00	0.00	
50	0.228						5533.08527	5533.09	1262.14			5533.08527	5533.09	1262.14			0.00	0.00	
51	0.221						5699.07782	5699.08	1262.14			5699.07782	5699.08	1262.14			0.00	0.00	
52	0.215						5870.05016	5870.05	1262.14			5870.05016	5870.05	1262.14			0.00	0.00	
53	0.209						6046.15166	6046.15	1262.14			6046.15166	6046.15	1262.14			0.00	0.00	
54	0.203						6227.53621	6227.54	1262.14			6227.53621	6227.54	1262.14			0.00	0.00	
55	0.197						6414.3623	6414.36	1262.14			6414.3623	6414.36	1262.14			0.00	0.00	
56	0.191						6606.79317	6606.79	1262.14			6606.79317	6606.79	1262.14			0.00	0.00	
57	0.185						6804.99696	6805.00	1262.14			6804.99696	6805.00	1262.14			0.00	0.00	
58	0.180						7009.14687	7009.15	1262.14			7009.14687	7009.15	1262.14			0.00	0.00	
59	0.175						7219.42128	7219.42	1262.14			7219.42128	7219.42	1262.14			0.00	0.00	
60	0.170						7436.00392	7436.00	1262.14			7436.00392	7436.00	1262.14			0.00	0.00	
61	0.165						7659.08404	7659.08	1262.14			7659.08404	7659.08	1262.14			0.00	0.00	
62	0.160						7888.85656	7888.86	1262.14			7888.85656	7888.86	1262.14			0.00	0.00	
63	0.155						8125.52225	8125.52	1262.14			8125.52225	8125.52	1262.14			0.00	0.00	
64	0.151						8369.28792	8369.29	1262.14			8369.28792	8369.29	1262.14			0.00	0.00	
65	0.146						8620.36656	8620.37	1262.14			8620.36656	8620.37	1262.14			0.00	0.00	
66	0.142						8878.97755	8878.98	1262.14			8878.97755	8878.98	1262					

Project Summary Sheet

Client/Authority Scarborough Borough Council		Prepared (date)	10/11/2011
Project name Robin Hood's Bay CSS		Printed	14/12/2012
Policy Unit Base date for estimates (year 0) Scaling factor (e.g. £m, £k, £) Year Discount Rate Optimism bias adjustment factor	25.1 Oct-2012 £ 0 3.5% 60%	(used for all costs, losses and benefits)	Prepared by Checked by Checked date JC JC

Option number	Costs and benefits £						
	Option 1a	Option 1b	Option 2	Option 3			
Option name	NAI	NAI (with H&S)	AM(Property Roll Back Scheme)	All (Rock Armour)			
AEP or SoP (where relevant)							
COSTS:							
PV capital costs	0						
PV operation and maintenance costs [Pvc Total]	0	102,285	154,004	4,525,867			
PV other	0						
Optimism bias adjustment	0	61,371	92,402	2,715,520			
PV negative costs (e.g. sales)	0	0	0	0			
PV contributions							
Total PV Costs £ excluding contributions	0	163,655	246,407	7,241,387			
Total PV Costs £ taking contributions into account	0	163,655	246,407	7,241,387			
BENEFITS:							
PV monetised flood damages	0	0	0	0			
PV monetised flood damages avoided		0	0	0			
PV monetised erosion damages	466,600	372,397	19,377	19,377			
PV monetised erosion damages avoided (protected)		94,203	447,223	447,223			
Total monetised PV damages £	466,600	372,397	19,377	19,377			
Total monetised PV benefits £		94,203	447,223	447,223			
PV damages (from scoring and weighting)							
PV damages avoided/benefits (from scoring and weighting)							
PV benefits from ecosystem services							
Total PV damages £	466,600	466,600	24,279	192,233			
Total PV benefits £		0	442,321	274,367			
DECISION-MAKING CRITERIA:							
excluding contributions							
<i>Based on total PV benefits (in cludes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-163,655	195,915	-6,967,020			
Average benefit/cost ratio BCR		0.0	1.8	0.0			
Incremental benefit/cost ratio IBCR							
			Highest bcr				
<i>Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-69,453	200,817	-6,794,164			
Average benefit/cost ratio BCR		0.6	1.8	0.1			
Incremental benefit/cost ratio IBCR				0.0			
			Highest bcr				
including contributions							
<i>Taking account of contributions (in cludes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-163,655	195,915	-6,967,020			
Average benefit/cost ratio BCR		0.0	1.8	0.0			
Incremental benefit/cost ratio IBCR			5.3	0.0			
			Highest bcr				
			IBCR>1				
<i>Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-69,453	200,817	-6,794,164			
Average benefit/cost ratio BCR		0.6	1.8	0.1			
Incremental benefit/cost ratio IBCR							
			Highest bcr				
Best practicable environmental option (WFD)							
Brief description of options:							
Option 1a	NAI						
Option 1b	NAI (with H&S)						
Option 2	AM(Property Roll Back Scheme)						
Option 3	All (Rock Armour)						

Comments and assumptions:

Project Summary Sheet					
Client/Authority			Prepared (date)		
SBC			29/10/2010		
Project name			Printed		
RHB CSS			29/10/2010		
Policy Unit			Prepared by		
25.1			NC		
Base date for estimates (year 0)			Checked by		
Oct-2012			ZH		
Scaling factor (e.g. £m, £k, £)			Checked date		
£			29/10/2010		
Principle land use band			(used for all costs, losses and benefits)		
D			(A to E)		
Discount rate			3%		
Costs and benefits of options					
	Costs and benefits £				
	Option 1a	Option 1b	Option 2	Option 3	
PV costs PVc	-	163,655.32	246,406.59	7,241,386.89	
PV damage PVd	466,599.98	466,599.98	24,278.52	192,233.01	
PV damage avoided		-	442,321.45	274,366.96	
PV assets Pva					
PV asset protection benefits		-	-	-	
Total PV benefits PVb		-	442,321.45	274,366.96	
Net Present Value NPV	-	163,655.32	195,914.87	- 6,967,019.93	
Average benefit/cost ratio		-	1.80	0.04	
Incremental benefit/cost ratio			5.35	- 0.02	
	-		Highest b/c		-
Brief description of options:					
Option 1a	NAI				
Option 1b	NAI (with H&S)				
Option 2	AM (Property Roll Back)				
Option 3	All (Rock Armour)				
Notes:					
1) Benefits will normally be expressed either in terms of damage avoided or asset values protected. Care is needed to avoid double counting					
2) PV damage avoided is calculated as PV damage (No Project) - PV damage (Option)					
PV asset protection benefits are calculated as PVa (Option) - PVa (No Project)					
PV benefits calculated as PV damage avoided + PV asset protection benefits					
3) Incremental benefit/cost ratio is calculated as:					
$(PVb(\text{current option}) - PVb(\text{previous option})) / (PVc(\text{current option}) - PVc(\text{previous option}))$					

Present Value Losses															Sheet Nr. 2							
Client/Authority SBC															Prepared (date) 14/12/2012							
Project name RHB CSS															Printed 14/12/2012							
Policy Unit 25.1															Prepared by NC							
Base date for estimates (year 0) Oct-2012															Checked by ZH							
Scaling factor (e.g. Em, £k, £) £															Checked date 14/12/2012							
Discount rate 3%																						
Results £																						
Option 1 do nothing															Option 2 Do Min H&S							
Option 3 Further Studies & Minor Works															Option 4 Engineered Solutions							
PV losses 422600															134810							
PV benefits 0															287790							
year	cash sum	Discount Factor	Option 1	do nothing	TOTALS	PV	Option 2	Do Min H&S	TOTALS	PV	Option 3	loss	loss	loss	TOTALS	PV	Option 4	loss	loss	loss	TOTALS	PV
0	0	1.000	0	0	2118737.88	422599.93	0	0	2118737.88	422599.93	0	0	0	0.00	0.00	0	0	0	0	0	983838.10	134809.72
1	0.971	0.971			3160.00	3,067.96			3160.00	3,067.96				0.00	-						0.00	-
2	0.943	0.943			7002.32	6,600.36			7002.32	6,600.36				0.00	-						0.00	-
3	0.915	0.915			14004.64	12,816.23			14004.64	12,816.23				0.00	-						0.00	-
4	0.888	0.888			11526.97	10,241.56			11526.97	10,241.56				0.00	-						0.00	-
5	0.863	0.863			2729.29	2,354.31			2729.29	2,354.31				0.00	-						0.00	-
6	0.837	0.837			0.00	-			0.00	-				0.00	-						0.00	-
7	0.813	0.813			0.00	-			0.00	-				0.00	-						0.00	-
8	0.789	0.789			0.00	-			0.00	-				0.00	-						0.00	-
9	0.766	0.766			0.00	-			0.00	-				0.00	-						0.00	-
10	0.744	0.744			648.00	482.17			648.00	482.17				0.00	-						0.00	-
11	0.722	0.722			1296.00	936.26			1296.00	936.26				0.00	-						0.00	-
12	0.701	0.701			1944.00	1,363.48			1944.00	1,363.48				0.00	-						0.00	-
13	0.681	0.681			2592.00	1,765.03			2592.00	1,765.03				0.00	-						0.00	-
14	0.661	0.661			0.00	-			0.00	-				0.00	-						0.00	-
15	0.642	0.642			0.00	-			0.00	-				0.00	-						0.00	-
16	0.623	0.623			0.00	-			0.00	-				0.00	-						0.00	-
17	0.605	0.605			0.00	-			0.00	-				0.00	-						0.00	-
18	0.587	0.587			0.00	-			0.00	-				0.00	-						0.00	-
19	0.570	0.570			0.00	-			0.00	-				0.00	-						0.00	-
20	0.554	0.554			0.00	-			0.00	-				0.00	-						0.00	-
21	0.538	0.538			0.00	-			0.00	-				0.00	-						0.00	-
22	0.522	0.522			0.00	-			0.00	-				0.00	-						0.00	-
23	0.507	0.507			0.00	-			0.00	-				0.00	-						0.00	-
24	0.492	0.492			0.00	-			0.00	-				0.00	-						0.00	-
25	0.478	0.478			37800.00	18,053.49			37800.00	18,053.49				0.00	-						0.00	-
26	0.464	0.464			0.00	-			0.00	-				0.00	-						0.00	-
27	0.450	0.450			0.00	-			0.00	-				0.00	-						0.00	-
28	0.437	0.437			0.00	-			0.00	-				0.00	-						0.00	-
29	0.424	0.424			0.00	-			0.00	-				0.00	-						0.00	-
30	0.412	0.412			500.00	205.99			500.00	205.99				0.00	-						0.00	-
31	0.400	0.400			1000.00	399.99			1000.00	399.99				0.00	-						3160.00	1,263.96
32	0.388	0.388			26502.00	10,291.71			26502.00	10,291.71				0.00	-						7002.32	2,719.26
33	0.377	0.377			52004.00	19,606.87			52004.00	19,606.87				0.00	-						14004.64	5,280.12
34	0.366	0.366			75006.00	27,455.56			75006.00	27,455.56				0.00	-						11526.97	4,219.39
35	0.355	0.355			100008.00	35,541.18			100008.00	35,541.18				0.00	-						2729.29	969.94
36	0.345	0.345			0.00	-			0.00	-				0.00	-						0.00	-
37	0.335	0.335			0.00	-			0.00	-				0.00	-						0.00	-
38	0.325	0.325			0.00	-			0.00	-				0.00	-						0.00	-
39	0.316	0.316			0.00	-			0.00	-				0.00	-						0.00	-
40	0.307	0.307			48004.00	14,715.95			48004.00	14,715.95				0.00	-						648.00	198.65
41	0.298	0.298			96008.00	28,574.67			96008.00	28,574.67				0.00	-						1296.00	385.73
42	0.289	0.289			144012.00	41,613.60			144012.00	41,613.60				0.00	-						1944.00	561.74
43	0.281	0.281			192016.00	53,868.73			192016.00	53,868.73				0.00	-						2592.00	727.17
44	0.272	0.272			0.00	-			0.00	-				0.00	-						0.00	-
45	0.264	0.264			0.00	-			0.00	-				0.00	-						0.00	-
46	0.257	0.257			0.00	-			0.00	-				0.00	-						0.00	-
47	0.249	0.249			657.49	163.88			657.49	163.88				0.00	-						0.00	-
48	0.242	0.242			1314.98	318.22			1314.98	318.22				0.00	-						0.00	-
49	0.235	0.235			1972.46	463.43			1972.46	463.43				0.00	-						0.00	-
50	0.228	0.228			149629.95	34,131.65			149629.95	34,131.65				0.00	-						0.00	-
51	0.221	0.221			0.00	-			0.00	-				0.00	-						0.00	-
52	0.215	0.215			0.00	-			0.00	-				0.00	-						0.00	-
53	0.209	0.209			0.00	-			0.00	-				0.00	-						0.00	-
54	0.203	0.203			0.00	-			0.00	-				0.00	-						0.00	-
55	0.197	0.197			0.00	-			0.00	-				0.00	-						37800.00	7,437.80
56	0.191	0.191			0.00	-			0.00	-				0.00	-						0.00	-
57	0.185	0.185			1250.00	231.84			1250.00	231.84				0.00	-						0.00	-
58	0.180	0.180			2500.00	450.17			2500.00	450.17				0.00	-						0.00	-
59	0.175	0.175			3750.00	655.59			3750.00	655.59				0.00	-						0.00	-
60	0.170	0.170			5000.00	848.67			5000.00	848.67				0.00	-						500.00	84.87
61	0.165	0.165			0.00	-			0.00	-				0.00	-						1000.00	164.79
62	0.160	0.160			0.00	-			0.00	-				0.00	-						26502.00	4,240.05
63	0.155	0.155			0.00	-			0.00	-				0.00	-						52004.00	8,077.77
64	0.151	0.151			0.00	-			0.00	-				0.00	-						75006.00	11,311.33
65	0.146	0.146			0.00	-			0.00	-				0.00	-						100008.00	14,642.50
66	0.142	0.142			0.00	-			0.00	-				0.00	-						0.00	-
67	0.138	0.138			0.00	-			0.00	-				0.00	-						0.00	-
68	0.134	0.134			0.00	-			0.00	-				0.00	-						0.00	-
69	0.130	0.130			0.00	-			0.00	-				0.00	-						0.00	-
70	0.126	0.126			0.00	-			0.00	-				0.00	-						48004.00	6,062.78
71	0.123	0.123			0.00	-			0.00	-				0.00	-						96008.00	11,772.39
72	0.119	0.119			0.00	-			0.00	-				0.00	-						144012.00	17,144.25
73	0.116	0.116			0.00	-			0.00	-				0.00	-						192016.00	22,193.20
74	0.112	0.112			0.00	-			0.00	-				0.00	-						0.00	-
75	0.109	0.109			360273.44	39,250.07			360273.44	39,250.07				0.00	-						0.00	-
76	0.106	0.106			0.00	-			0.00	-				0.00	-						0.00	-
77	0.103	0.103			20073.44	2,061.37			20073.44	2,061.37				0.00	-						657.49	67.52

Erosion Loss Calculation Sheet with delay options					Sheet Nr.		3			
Client/Authority SBC					Option:		Delay (yrs)		Prepared (date)	
Project name RHB CSS					Option 1b		0		29/10/2010	
Policy Unit Base date for estimates (year 0) Scaling factor (e.g. £m, £k, £) Discount rate					Option 2 Option 3		100 30		Printed Prepared by Checked by Checked date	
25.1 Oct-2012 £ 3%									NC ZH 29/10/2010	
Ref	Asset Description	MV £	Year	Prob of loss without project in year	Expected Present Value of asset losses £					
					Option 1a	Option 1b	Option 2	Option 3		
0	Coastguard Lookout	5000.00	30	0.1	206	206	11	85		
1	Coastguard Lookout	5000.00	31	0.2	400	400	21	165		
2	Coastguard Lookout	5000.00	32	0.3	583	583	30	240		
3	Coastguard Lookout	5000.00	33	0.4	754	754	39	311		
4	Whitby Lighthouse	250020.00	40	0.1	7,665	7,665	399	3,158		
5	Whitby Lighthouse	250020.00	41	0.2	14,883	14,883	774	6,131		
6	Whitby Lighthouse	250020.00	42	0.3	21,674	21,674	1,128	8,929		
7	Whitby Lighthouse	250020.00	43	0.4	28,057	28,057	1,460	11,559		
8	Whitby Fog Signal	250020.00	32	0.1	9,709	9,709	505	4,000		
9	Whitby Fog Signal	250020.00	33	0.2	18,853	18,853	981	7,767		
10	Whitby Fog Signal	250020.00	34	0.3	27,456	27,456	1,429	11,311		
11	Whitby Fog Signal	250020.00	35	0.4	35,541	35,541	1,849	14,642		
12	Road	994.48	97	0.1	6	6	0	2		
13	Road	994.48	98	0.2	11	11	1	5		
14	Road	994.48	99	0.3	16	16	1	7		
15	Road	994.48	100	0.4	21	21	1	9		
16	Agricultural Land	378000.00	25	0.1	18,053	18,053	939	7,438		
17	Agricultural Land	735000.00	50	0.2	33,532	33,532	1,745	13,815		
18	Agricultural Land	1134000.00	75	0.3	37,063	37,063	1,929	15,270		
19	Agricultural Land	1512000.00	100	0.4	31,469	31,469	1,637	12,965		
20	Facilities	138122.75	97	0.1	785	785	41	324		
21	Facilities	138122.75	98	0.2	1,525	1,525	79	628		
22	Facilities	138122.75	99	0.3	2,221	2,221	116	915		
23	Facilities	138122.75	100	0.4	2,875	2,875	150	1,184		
24	Youth Hostel	230020.00	40	0.1	7,051	7,051	367	2,905		
25	Youth Hostel	230020.00	41	0.2	13,692	13,692	712	5,641		
26	Youth Hostel	230020.00	42	0.3	19,940	19,940	1,038	8,215		
27	Youth Hostel	230020.00	43	0.4	25,812	25,812	1,343	10,634		
28	Youth Hostel Storage	6480.00	10	0.1	482	482	25	199		
29	Youth Hostel Storage	6480.00	11	0.2	936	936	49	386		
30	Youth Hostel Storage	6480.00	12	0.3	1,363	1,363	71	562		
31	Youth Hostel Storage	6480.00	13	0.4	1,765	1,765	92	727		
32	Footbridge	1823.22	2	0.1	172	172	9	71		
33	Footbridge	1823.22	3	0.2	334	334	17	137		
34	Footbridge	1823.22	4	0.3	486	486	25	200		
35	Footbridge	1823.22	5	0.4	629	629	33	259		
36	Coastguard Building North	31600.00	1	0.1	3,068	3,068	160	1,264		
37	Coastguard Building North	31600.00	2	0.2	5,957	5,957	310	2,454		
38	Coastguard Building North	31600.00	3	0.4	11,567	11,567	602	4,766		
39	Coastguard Building North	31600.00	4	0.3	8,423	8,423	438	3,470		
40	Property 1	200734.40	77	0.1	2,061	2,061	107	849		
41	Property 1	200734.40	78	0.2	4,003	4,003	208	1,649		
42	Property 1	200734.40	79	0.3	5,829	5,829	303	2,402		
43	Property 1	200734.40	80	0.4	7,546	7,546	393	3,109		
44	Property 2	6574.88	47	0.1	164	164	9	68		
45	Property 2	6574.88	48	0.2	318	318	17	131		
46	Property 2	6574.88	49	0.3	463	463	24	191		
47	Property 2	6574.88	50	0.4	600	600	31	247		
48	Property 3	200734.40	75	0.1	2,187	2,187	114	901		
49	Property 3	200734.40	80	0.2	3,773	3,773	196	1,554		
50	Property 3	200734.40	85	0.3	4,882	4,882	254	2,011		
51	Property 3	200734.40	90	0.4	5,615	5,615	292	2,313		
52	Property 4	200734.40	97	0.1	1,141	1,141	59	470		
53	Property 4	200734.40	98	0.2	2,216	2,216	115	913		
54	Property 4	200734.40	99	0.3	3,227	3,227	168	1,330		
55	Property 4	200734.40	100	0.4	4,178	4,178	217	1,721		
56	Gardens 1	5000.00	2	0.1	471	471	25	194		
57	Gardens 1	5000.00	3	0.2	915	915	48	377		
58	Gardens 1	5000.00	4	0.3	1,333	1,333	69	549		
59	Gardens 1	5000.00	5	0.4	1,725	1,725	90	711		
60	Farm 1	12500.00	57	0.1	232	232	12	96		
61	Farm 1	12500.00	58	0.2	450	450	23	185		
62	Farm 1	12500.00	59	0.3	656	656	34	270		
63	Farm 1	12500.00	60	0.4	849	849	44	350		
64	Farm 2	32000.00	82	0.1	283	283	15	117		
65	Farm 2	32000.00	83	0.2	550	550	29	227		
66	Farm 2	32000.00	84	0.3	802	802	42	330		
67	Farm 2	32000.00	85	0.4	1,038	1,038	54	427		
68	Farm 3	262200.00	97	0.1	1,491	1,491	78	614		
69	Farm 3	262200.00	98	0.2	2,895	2,895	151	1,193		
70	Farm 3	262200.00	99	0.3	4,216	4,216	219	1,737		
71	Farm 3	262200.00	100	0.4	5,457	5,457	284	2,248		
Totals		11097234.14			466,600	466,600	24,279	192,233		

Notes
 Make one entry in the description column for each property (or group of properties) as this determines subsequent calculation
 MV = risk free market value at base date for estimate - must be entered on each line when probability distribution is used
 Equivalent annual value = MV x discount rate (assumes infinite life)
 Year is year in which there is the probability of loss shown, years must be entered consecutively for each property or group
 If no distribution is used enter year of expected year of loss and enter 1.0 in probability column
 Columns G to K show expected present values of asset losses with each option, assuming extensions of life entered above
 The loss is calculated using the formula PV loss = MV * Prob of loss * (1 - (1 - 1/((1+r)^(Year of loss))) = MV * Prob of loss / ((1+r)^(Year of loss))
 Additional properties can be entered by inserting lines above line 62 and copying all formulae, including hidden calculation in column C
 Asset value in subsequent years for each property is additional value for that property if life extenc

Present Value Costs for all options															Sheet Nr. 4							
Client/Authority: SBC															Prepared (date): 29/10/2010							
Project name: RHB CSS															Printed: 29/10/2010							
Policy Unit: 25.1															Prepared by: NC							
Base date for estimates (year 0): Oct-2012															Checked by: ZH							
Scaling factor (e.g. £m, £k, £): £															Checked date: 29/10/2010							
Discount rate: 3%																						
Results £																						
PV total costs																						
Option 1: No Active Intervention																						
Option 2: Active Intervention H&M																						
Option 3: Roll Back Study																						
Option 4: Rock Armour																						
TOTALS: 0.00 163655.32 246406.59 7241386.89																						
Year	Discount Factor	Option 1a Capital	Option 1a No Active Intervention Maint.	Option 1a Other	TOTALS: Cash	TOTALS: PV	Option 1b Capital	Option 1b No Active Intervention Maint.	Option 1b Other	TOTALS: Cash	TOTALS: PV	Option 2 Capital	Option 2 Roll Back Study Maint.	Option 2 Other	TOTALS: Cash	TOTALS: PV	Option 3 Capital	Option 3 Rock Armour Maint.	Option 3 Other	TOTALS: Cash	TOTALS: PV	
0	1.000	0	0	0	0	0	63406.5866	0	765217.527	828624.113	163655.319	127406.587	0	780217.527	907624.1133	246406.586	6750000	0	0	6750000	7241386.89	
1	0.971				0.00	0.00			1300	1300.00	1262.14			16300	16300.00	15825.24	6750000			6750000	6553398.06	
2	0.943				0.00	0.00			1339	1339.00	1262.14			1339	65339.00	61588.27					0.00	0.00
3	0.915				0.00	0.00	12651.22		1379.77	14030.39	12839.79	12651.22		1379.17	14030.39	12839.79					0.00	0.00
4	0.888				0.00	0.00			1420.5451	1420.55	1262.14			1420.5451	1420.55	1262.14					0.00	0.00
5	0.863				0.00	0.00			1463.16145	1463.16	1262.14			1463.16145	1463.16	1262.14					0.00	0.00
6	0.837				0.00	0.00			1507.0563	1507.06	1262.14			1507.0563	1507.06	1262.14					0.00	0.00
7	0.813				0.00	0.00			1552.26799	1552.27	1262.14			1552.26799	1552.27	1262.14					0.00	0.00
8	0.789				0.00	0.00			1598.83603	1598.84	1262.14			1598.83603	1598.84	1262.14					0.00	0.00
9	0.766				0.00	0.00			1646.80111	1646.80	1262.14			1646.80111	1646.80	1262.14					0.00	0.00
10	0.744				0.00	0.00			1696.20514	1696.21	1262.14			1696.20514	1696.21	1262.14					0.00	0.00
11	0.722				0.00	0.00			1747.09129	1747.09	1262.14			1747.09129	1747.09	1262.14					0.00	0.00
12	0.701				0.00	0.00			1799.50403	1799.50	1262.14			1799.50403	1799.50	1262.14					0.00	0.00
13	0.681				0.00	0.00			1853.48915	1853.49	1262.14			1853.48915	1853.49	1262.14					0.00	0.00
14	0.661				0.00	0.00			1909.09383	1909.09	1262.14			1909.09383	1909.09	1262.14					0.00	0.00
15	0.642				0.00	0.00			1966.36664	1966.37	1262.14			1966.36664	1966.37	1262.14					0.00	0.00
16	0.623				0.00	0.00			2025.35764	2025.36	1262.14			2025.35764	2025.36	1262.14					0.00	0.00
17	0.605				0.00	0.00			2086.11837	2086.12	1262.14			2086.11837	2086.12	1262.14					0.00	0.00
18	0.587				0.00	0.00			2148.70192	2148.70	1262.14			2148.70192	2148.70	1262.14					0.00	0.00
19	0.570				0.00	0.00			2213.16298	2213.16	1262.14			2213.16298	2213.16	1262.14					0.00	0.00
20	0.554				0.00	0.00			2279.55787	2279.56	1262.14			2279.55787	2279.56	1262.14					0.00	0.00
21	0.538				0.00	0.00			2347.94461	2347.94	1262.14			2347.94461	2347.94	1262.14					0.00	0.00
22	0.522				0.00	0.00			2418.38294	2418.38	1262.14			2418.38294	2418.38	1262.14					0.00	0.00
23	0.507				0.00	0.00			2490.93443	2490.93	1262.14			2490.93443	2490.93	1262.14					0.00	0.00
24	0.492				0.00	0.00			2565.66246	2565.66	1262.14			2565.66246	2565.66	1262.14					0.00	0.00
25	0.478				0.00	0.00			2642.63234	2642.63	1262.14			2642.63234	2642.63	1262.14					0.00	0.00
26	0.464				0.00	0.00			2721.91131	2721.91	1262.14			2721.91131	2721.91	1262.14					0.00	0.00
27	0.450				0.00	0.00			2803.56865	2803.57	1262.14			2803.56865	2803.57	1262.14					0.00	0.00
28	0.437				0.00	0.00			2887.67571	2887.68	1262.14			2887.67571	2887.68	1262.14					0.00	0.00
29	0.424				0.00	0.00			2974.30598	2974.31	1262.14			2974.30598	2974.31	1262.14					0.00	0.00
30	0.412				0.00	0.00			3063.53516	3063.54	1262.14			3063.53516	3063.54	1262.14					0.00	0.00
31	0.400				0.00	0.00			3155.44121	3155.44	1262.14			3155.44121	3155.44	1262.14					0.00	0.00
32	0.388				0.00	0.00			3250.10445	3250.10	1262.14			3250.10445	3250.10	1262.14					0.00	0.00
33	0.377				0.00	0.00			3347.60758	3347.61	1262.14			3347.60758	3347.61	1262.14					0.00	0.00
34	0.366				0.00	0.00			3448.03581	3448.04	1262.14			3448.03581	3448.04	1262.14					0.00	0.00
35	0.355				0.00	0.00			3551.47688	3551.48	1262.14			3551.47688	3551.48	1262.14					0.00	0.00
36	0.345				0.00	0.00			3658.02119	3658.02	1262.14			3658.02119	3658.02	1262.14					0.00	0.00
37	0.335				0.00	0.00			3767.76183	3767.76	1262.14			3767.76183	3767.76	1262.14					0.00	0.00
38	0.325				0.00	0.00			3880.79468	3880.79	1262.14			3880.79468	3880.79	1262.14					0.00	0.00
39	0.316				0.00	0.00			3997.21852	3997.22	1262.14			3997.21852	3997.22	1262.14					0.00	0.00
40	0.307				0.00	0.00			4117.13508	4117.14	1262.14			4117.13508	4117.14	1262.14					0.00	0.00
41	0.298				0.00	0.00			4240.64913	4240.65	1262.14			4240.64913	4240.65	1262.14					0.00	0.00
42	0.289				0.00	0.00			4367.86866	4367.87	1262.14			4367.86866	4367.87	1262.14					0.00	0.00
43	0.281				0.00	0.00			4498.90466	4498.90	1262.14			4498.90466	4498.90	1262.14					0.00	0.00
44	0.272				0.00	0.00			4633.8718	4633.87	1262.14			4633.8718	4633.87	1262.14					0.00	0.00
45	0.264				0.00	0.00			4772.88796	4772.89	1262.14			4772.88796	4772.89	1262.14					0.00	0.00
46	0.257				0.00	0.00			4916.07459	4916.07	1262.14			4916.07459	4916.07	1262.14					0.00	0.00
47	0.249				0.00	0.00			5063.55683	5063.56	1262.14			5063.55683	5063.56	1262.14					0.00	0.00
48	0.242				0.00	0.00			5215.46354	5215.46	1262.14			5215.46354	5215.46	1262.14					0.00	0.00
49	0.235				0.00	0.00			5371.92744	5371.93	1262.14			5371.92744	5371.93	1262.14					0.00	0.00
50	0.228				0.00	0.00			5533.08527	5533.09	1262.14			5533.08527	5533.09	1262.14					0.00	0.00
51	0.221				0.00	0.00			5699.07782	5699.08	1262.14			5699.07782	5699.08	1262.14					0.00	0.00
52	0.215				0.00	0.00			5870.05016	5870.05	1262.14			5870.05016	5870.05	1262.14					0.00	0.00
53	0.209				0.00	0.00			6046.15166	6046.15	1262.14			6046.15166	6046.15	1262.14					0.00	0.00
54	0.203				0.00	0.00			6227.53621	6227.54	1262.14			6227.53621	6227.54	1262.14					0.00	0.00
55	0.197				0.00	0.00			6414.3623	6414.36	1262.14			6414.3623	6414.36	1						

Project Summary Sheet

Client/Authority Scarborough Borough Council		Prepared (date)	10/11/2011
Project name Robin Hood's Bay CSS		Printed	14/12/2012
Policy Unit Base date for estimates (year 0) Scaling factor (e.g. £m, £k, £) Year Discount Rate Optimism bias adjustment factor	25.2 Oct-2012 £ 0 3.5% 60%	Prepared by Checked by Checked date	JC JC JC
		(used for all costs, losses and benefits)	
			0 30 75
			3.5% 3.00% 2.50%

Option number	Costs and benefits £						
	Option 1a	Option 1b	Option 2	Option 3	Option 4	Option 5	Option 6
Option name	NAI	NAI (with H&S)	AIM with Adaptive Management (Property Roll Back Scheme in Northern Village and Capital Maintenance to Coastal Defence Assets in the Southern Village)	village drainage Investigation and remedial works with deep rooted vegetation slope stabilising Capital Maintenance to Coastal Defence Asset in the Southern Village]	AIM [Capital Maintenance to Coastal Defence Asset in the Southern Village with no scheme for northern section of the village]	AIM [Soil nailing and horizontal drainage installation with a capital maintenance scheme to existing defence assets]	AIM [Contiguous bored pile wall with a capital maintenance scheme to existing defence assets]
AEP or SoP (where relevant)							
COSTS:							
PV capital costs	0						
PV operation and maintenance costs	0	88,391	1,759,283	2,063,788	672,084	5,829,120	4,510,414
PV other	0						
Optimism bias adjustment	0	53,034	1,055,570	1,238,273	403,251	3,497,472	2,706,248
PV negative costs (e.g. sales)	0	0	0	0	0	0	0
PV contributions	0						
Total PV Costs £ excluding contributions	0	141,425	2,814,853	3,302,061	1,075,335	9,326,592	7,216,662
Total PV Costs £ taking contributions into account	0	141,425	2,814,853	3,302,061	1,075,335	9,326,592	7,216,662
BENEFITS:							
PV monetised flood damages	0	0	0	0	0	0	0
PV monetised flood damages avoided		0	0	0	0	0	0
PV monetised erosion damages	9,170,922	9,170,922	477,189	3,778,299	5,886,466	477,189	477,189
PV monetised erosion damages avoided (protected)		0	8,693,733	5,392,624	3,284,456	8,693,733	8,693,733
Total monetised PV damages £	9,170,922	9,170,922	477,189	3,778,299	5,886,466	477,189	477,189
Total monetised PV benefits £		0	8,693,733	5,392,624	3,284,456	8,693,733	8,693,733
PV damages (from scoring and weighting)							
PV damages avoided/benefits (from scoring and weighting)							
PV benefits from ecosystem services							
Total PV damages £	9,170,922	9,170,922	477,189	3,778,299	5,886,466	477,189	477,189
Total PV benefits £		0	8,693,733	5,392,624	3,284,456	8,693,733	8,693,733
DECISION-MAKING CRITERIA:							
excluding contributions							
<i>Based on total PV benefits (includes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-141,425	5,878,880	2,090,563	2,209,121	-632,859	1,477,071
Average benefit/cost ratio BCR		0.0	3.09	1.6	3.1	0.9	1.2
Incremental benefit/cost ratio IBCR							
			Highest bcr				
<i>Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-141,425	5,878,880	2,090,563	2,209,121	-632,859	1,477,071
Average benefit/cost ratio BCR		0.0	3.1	1.6	3.1	0.9	1.2
Incremental benefit/cost ratio IBCR			3.3	-6.8	0.9		
			Highest bcr				
			IBCR>1				
including contributions							
<i>Taking account of contributions (includes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-141,425	5,878,880	2,090,563	2,209,121	-632,859	1,477,071
Average benefit/cost ratio BCR		0.0	3.1	1.6	3.1	0.9	1.2
Incremental benefit/cost ratio IBCR			3.3	-6.8	0.9		
			Highest bcr				
			IBCR>1				
<i>Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services)</i>							
Net Present Value NPV		-141,425	5,878,880	2,090,563	2,209,121		
Average benefit/cost ratio BCR		0.0	3.1	1.6	3.1		
Incremental benefit/cost ratio IBCR							
			Highest bcr				
Best practicable environmental option (WFD)							
Brief description of options:							
Option 1a	NAI						
Option 1b	NAI (with H&S)						
Option 2	Village)						
Option 3	in the Southern Village]						
Option 4	AIM [Capital Maintenance to Coastal Defence Asset in the Southern Village with no scheme for northern section of the village]						
Option 5	AIM [Soil nailing and horizontal drainage installation with a capital maintenance scheme to existing defence assets]						
Option 6	AIM [Contiguous bored pile wall with a capital maintenance scheme to existing defence assets]						
Comments and assumptions:							

Project Summary Sheet

Client/Authority			Prepared (date)	23/09/2010
SBC			Printed	14/12/2012
Project name			Prepared by	NC
RHB CSS			Checked by	ZH
Policy Unit	25.2 (b)		Checked date	23/10/2010
Base date for estimates (year 0)	Oct-2012			
Scaling factor (e.g. £m, £k, £)	£	(used for all costs, losses and benefits)		
Principle land use band	B	(A to E)		
Discount rate	3%			

	Costs and benefits £						
	Option 1a	Option 1b	Option 2	Option 3	Option 4	Option 5	Option 6
PV costs PVc	-	141,425.46	2,814,852.55	3,302,061.06	1,075,334.66	9,326,592.23	7,216,662.13
PV damage PVd	9,170,922.33	9,170,922.33	477,189.13	3,778,298.57	5,886,466.06	477,189.13	477,189.13
PV damage avoided		-	8,693,733.19	5,392,623.76	3,284,456.26	8,693,733.19	8,693,733.19
PV assets Pva							
PV asset protection benefits		-	-	-	-	-	-
Total PV benefits PVb		-	8,693,733.19	5,392,623.76	3,284,456.26	8,693,733.19	8,693,733.19
Net Present Value NPV	-	141,425.46	5,878,880.64	2,090,562.70	2,209,121.60	632,859.03	1,477,071.07
Average benefit/cost ratio		-	3.09	1.63	3.05	0.93	1.20
Incremental benefit/cost ratio		-	3.25	6.78	0.95	0.66	-
	Highest b/c						

Brief description of options:	
Option 1a	NAI
Option 1b	NAI (with H&S)
Option 2	AIM with Adaptive Management (Property Roll Back Scheme in Northern Village and Capital Maintenance to Coastal Defence Assets in the Southern Village)
Option 3	AIM [Upper village drainage Investigation and remedial works with deep rooted vegetation slope stabilising Capital Maintenance to Coastal Defence Asset in the Southern Village]
Option 4	AIM [Capital Maintenance to Coastal Defence Asset in the Southern Village with no scheme for northern section of the village]
Option 5	AIM [Soil nailing and horizontal drainage installation with a capital maintenance scheme to existing defence assets]
Option 6	AIM [Contiguous bored pile wall with a capital maintenance scheme to existing defence assets]

- Notes:**
- Benefits will normally be expressed either in terms of damage avoided or asset values protected. Care is needed to avoid double counting
 - PV damage avoided is calculated as PV damage (No Project) - PV damage (Option)
 PV asset protection benefits are calculated as PVa (Option) - PVa (No Project)
 PV benefits calculated as PV damage avoided + PV asset protection benefits
 - Incremental benefit/cost ratio is calculated as:
 $(PVb(\text{current option}) - PVb(\text{previous option})) / (PVc(\text{current option}) - PVc(\text{previous option}))$

Erosion Loss Calculation Sheet with delay options										Sheet Nr.	3	
Client/Authority Scarborough Borough Council		Option:		Delay (yrs)		Prepared (date)		24/06/2010				
Project name Robin Hoods Bay Coastal Strategy		Option 1b		0		Printed		14/12/2012				
Policy Unit		Option 2		100		Prepared by		DR				
Base date for estimates (year 0)		Option 3		30		Checked by		ZH				
Scaling factor (e.g. £m, Ek, £)		Option 4		15		Checked date		24/10/2010				
Discount rate		Option 5		100								
		Option 6		100								
Ref	Description	Asset	MV £	Year	Prob of loss without project in year	Without Project	Option 1b	Option 2	Option 3	Option 4	Option 5	Option 6
0	Caravan prk Reception		5460	100	0.4	114	114	6	47	73	6	6
1	Caravan prk Reception		5460	99	0.3	88	88	5	36	56	5	5
2	Caravan prk Reception		5460	98	0.2	60	60	3	25	39	3	3
3	Caravan prk Reception		5460	97	0.1	31	31	2	13	20	2	2
4	Caravan prk Shop		52500	55	0.4	4,132	4,132	215	1,702	2,652	215	215
5	Caravan prk Shop		52500	56	0.3	3,009	3,009	157	1,240	1,931	157	157
6	Caravan prk Shop		52500	57	0.2	1,947	1,947	101	802	1,250	101	101
7	Caravan prk Shop		52500	58	0.1	945	945	49	389	607	49	49
8	Visitors Info Center		16065	75	0.4	700	700	36	288	449	36	36
9	Visitors Info Center		16065	76	0.3	510	510	27	210	327	27	27
10	Visitors Info Center		16065	77	0.2	330	330	17	136	212	17	17
11	Visitors Info Center		16065	78	0.1	160	160	8	66	103	8	8
12	Property 1		306855	40	0.4	37,627	37,627	1,958	15,502	24,152	1,958	1,958
13	Property 1		306855	41	0.3	27,399	27,399	1,426	11,288	17,586	1,426	1,426
14	Property 1		306855	42	0.2	17,734	17,734	923	7,306	11,383	923	923
15	Property 1		306855	43	0.1	8,609	8,609	448	3,547	5,526	448	448
16	Property 2		306855	40	0.4	37,627	37,627	1,958	15,502	24,152	1,958	1,958
17	Property 2		306855	41	0.3	27,399	27,399	1,426	11,288	17,586	1,426	1,426
18	Property 2		306855	42	0.2	17,734	17,734	923	7,306	11,383	923	923
19	Property 2		306855	43	0.1	8,609	8,609	448	3,547	5,526	448	448
20	Property 3		170963	100	0.4	3,558	3,558	185	1,466	2,284	185	185
21	Property 3		170963	99	0.3	2,749	2,749	143	1,132	1,764	143	143
22	Property 3		170963	98	0.2	1,887	1,887	98	778	1,212	98	98
23	Property 3		170963	97	0.1	972	972	51	400	624	51	51
24	Property 4		131510	100	0.4	2,737	2,737	142	1,128	1,757	142	142
25	Property 4		131510	99	0.3	2,114	2,114	110	871	1,357	110	110
26	Property 4		131510	98	0.2	1,452	1,452	76	598	932	76	76
27	Property 4		131510	97	0.1	748	748	39	308	480	39	39
28	Property 5		100825	80	0.4	3,790	3,790	197	1,561	2,433	197	197
29	Property 5		100825	79	0.3	2,928	2,928	152	1,206	1,879	152	152
30	Property 5		100825	78	0.2	2,010	2,010	105	828	1,290	105	105
31	Property 5		100825	77	0.1	1,035	1,035	54	427	665	54	54
32	Property 6		131510	100	0.4	2,737	2,737	142	1,128	1,757	142	142
33	Property 6		131510	99	0.3	2,114	2,114	110	871	1,357	110	110
34	Property 6		131510	98	0.2	1,452	1,452	76	598	932	76	76
35	Property 6		131510	97	0.1	748	748	39	308	480	39	39
36	Property 7		227950	100	0.4	4,744	4,744	247	1,955	3,045	247	247
37	Property 7		227950	99	0.3	3,665	3,665	191	1,510	2,352	191	191
38	Property 7		227950	98	0.2	2,517	2,517	131	1,037	1,615	131	131
39	Property 7		227950	97	0.1	1,296	1,296	67	534	832	67	67
40	Property 8		227950	80	0.4	8,569	8,569	446	3,530	5,500	446	446
41	Property 8		227950	79	0.3	6,619	6,619	344	2,727	4,249	344	344
42	Property 8		227950	78	0.2	4,545	4,545	237	1,873	2,917	237	237
43	Property 8		227950	77	0.1	2,341	2,341	122	964	1,503	122	122
44	Property 9		100825	100	0.4	2,098	2,098	109	865	1,347	109	109
45	Property 9		100825	99	0.3	1,621	1,621	84	668	1,041	84	84
46	Property 9		100825	98	0.2	1,113	1,113	58	459	714	58	58
47	Property 9		100825	97	0.1	573	573	30	236	368	30	30
48	Property 10		100825	100	0.4	2,098	2,098	109	865	1,347	109	109
49	Property 10		100825	99	0.3	1,621	1,621	84	668	1,041	84	84
50	Property 10		100825	98	0.2	1,113	1,113	58	459	714	58	58
51	Property 10		100825	97	0.1	573	573	30	236	368	30	30
52	Property 11		170963	80	0.4	6,427	6,427	334	2,648	4,125	334	334
53	Property 11		170963	79	0.3	4,965	4,965	258	2,045	3,187	258	258
54	Property 11		170963	78	0.2	3,409	3,409	177	1,404	2,188	177	177
55	Property 11		170963	77	0.1	1,756	1,756	91	723	1,127	91	91
56	Property 12		65754	100	0.4	1,369	1,369	71	564	878	71	71
57	Property 12		65754	99	0.3	1,057	1,057	55	436	679	55	55
58	Property 12		65754	98	0.2	726	726	38	299	466	38	38
59	Property 12		65754	97	0.1	374	374	19	154	240	19	19
60	Property 13		170963	60	0.4	11,607	11,607	604	4,782	7,450	604	604
61	Property 13		170963	61	0.3	8,452	8,452	440	3,482	5,425	440	440
62	Property 13		170963	62	0.2	5,470	5,470	285	2,254	3,511	285	285
63	Property 13		170963	63	0.1	2,656	2,656	138	1,094	1,705	138	138
64	Property 14		65754	60	0.4	4,464	4,464	232	1,839	2,865	232	232
65	Property 14		65754	61	0.3	3,251	3,251	169	1,339	2,086	169	169
66	Property 14		65754	62	0.2	2,104	2,104	109	867	1,350	109	109
67	Property 14		65754	63	0.1	1,021	1,021	53	421	656	53	53
68	Property 15		65754	60	0.4	4,464	4,464	232	1,839	2,865	232	232
69	Property 15		65754	61	0.3	3,251	3,251	169	1,339	2,086	169	169
70	Property 15		65754	62	0.2	2,104	2,104	109	867	1,350	109	109
71	Property 15		65754	63	0.1	1,021	1,021	53	421	656	53	53
72	Property 16		131510	60	0.4	8,929	8,929	465	3,678	5,731	465	465
73	Property 16		131510	61	0.3	6,501	6,501	338	2,679	4,173	338	338
74	Property 16		131510	62	0.2	4,208	4,208	219	1,734	2,701	219	219
75	Property 16		131510	63	0.1	2,043	2,043	106	842	1,311	106	106
76	Property 17		100825	60	0.4	6,845	6,845	356	2,820	4,394	356	356
77	Property 17		100825	61	0.3	4,984	4,984	259	2,054	3,199	259	259
78	Property 17		100825	62	0.2	3,226	3,226	168	1,329	2,071	168	168
79	Property 17		100825	63	0.1	1,566	1,566	81	645	1,005	81	81
80	Property 18		170963	60	0.4	11,607	11,607	604	4,782	7,450	604	604
81	Property 18		170963	61	0.3	8,452	8,452	440	3,482	5,425	440	440
82	Property 18		170963	62	0.2	5,470	5,470	285	2,254	3,511	285	285
83	Property 18		170963	63	0.1	2,656	2,656	138	1,094	1,705	138	138
84	Property 19		170963	60	0.4	11,607	11,607	604	4,782	7,450	604	604
85	Property 19		170963	61	0.3	8,452	8,452	440	3,482	5,425	440	440
86	Property 19		170963	62	0.2	5,470	5,470	285	2,254	3,511	285	285
87	Property 19		170963	63	0.1	2,656	2,656	138	1,094	1,705	138	138
88	Property 20		100825	60	0.4	6,845	6,845	356	2,820	4,394	356	356
89	Property 20		100825	61	0.3	4,984	4,984	259	2,054	3,199	259	259
90	Property 20		100825	62	0.2	3,226	3,226	168	1,329	2,071	168	168
91	Property 20		100825	63	0.1	1,566	1,566	81	645	1,005	81	81
92	Property 21		170963	60	0.4	11,607	11,607	604	4,782	7,450	604	604
93	Property 21		170963	61	0.3	8,452	8,452	440	3,482	5,425	440	440
94	Property 21		170963	62	0.2	5,470	5,470	285	2,254	3,511	285	285
95	Property 21		170963	63	0.1	2,656	2,656	138	1,094	1,705	138	138
96	Property 22		170963	40	0.4	20,964	20,964	1,091	8,637	13,456	1,091	1,091
97	Property 22		170963	41	0.3	15,265	15,265	794	6,289	9,798	794	794
98	Property 22		170963	42	0.2	9,880	9,880	514	4,071	6,342	514	514
99	Property 22		170963	43	0.1	4,796	4,796	250	1,976	3,079	250	250
100	Property 23		227950	40	0.4	27,952	27,952	1,454	11,516	17,941	1,454	1,454
101	Property 23		227950	41	0.3	20,353	20,353	1,059	8,385	13,064	1,059	1,059
102	Property 23		227950	42	0.2	13,174	13,174	685	5,427	8,456	685	685
103												

147	Property 33	170963	97	0.1	972	972	51	400	624	51	51
148	Property 34	227950	80	0.4	8,569	8,569	446	3,530	5,500	446	446
149	Property 34	227950	79	0.3	6,619	6,619	344	2,727	4,249	344	344
150	Property 34	227950	78	0.2	4,545	4,545	237	1,873	2,917	237	237
151	Property 34	227950	77	0.1	2,341	2,341	122	964	1,503	122	122
152	Property 35	227950	100	0.4	4,744	4,744	247	1,955	3,045	247	247
153	Property 35	227950	99	0.3	3,665	3,665	191	1,510	2,352	191	191
154	Property 35	227950	98	0.2	2,517	2,517	131	1,037	1,615	131	131
155	Property 35	227950	97	0.1	1,296	1,296	67	534	832	67	67
156	Property 36	227950	100	0.4	4,744	4,744	247	1,955	3,045	247	247
157	Property 36	227950	99	0.3	3,665	3,665	191	1,510	2,352	191	191
158	Property 36	227950	98	0.2	2,517	2,517	131	1,037	1,615	131	131
159	Property 36	227950	97	0.1	1,296	1,296	67	534	832	67	67
160	Property 37	227950	30	0.4	37,565	37,565	1,955	15,476	24,112	1,955	1,955
161	Property 37	227950	31	0.3	27,353	27,353	1,423	11,269	17,557	1,423	1,423
162	Property 37	227950	32	0.2	17,704	17,704	921	7,294	11,364	921	921
163	Property 37	227950	33	0.1	8,594	8,594	447	3,541	5,516	447	447
164	Property 38	170963	30	0.4	28,174	28,174	1,466	11,607	18,084	1,466	1,466
165	Property 38	170963	31	0.3	20,515	20,515	1,067	8,452	13,168	1,067	1,067
166	Property 38	170963	32	0.2	13,278	13,278	691	5,470	8,523	691	691
167	Property 38	170963	33	0.1	6,446	6,446	335	2,656	4,137	335	335
168	Property 39	131510	30	0.4	21,672	21,672	1,128	8,929	13,911	1,128	1,128
169	Property 39	131510	31	0.3	15,781	15,781	821	6,501	10,129	821	821
170	Property 39	131510	32	0.2	10,214	10,214	531	4,208	6,556	531	531
171	Property 39	131510	33	0.1	4,958	4,958	258	2,043	3,183	258	258
172	Property 40	170963	30	0.4	28,174	28,174	1,466	11,607	18,084	1,466	1,466
173	Property 40	170963	31	0.3	20,515	20,515	1,067	8,452	13,168	1,067	1,067
174	Property 40	170963	32	0.2	13,278	13,278	691	5,470	8,523	691	691
175	Property 40	170963	33	0.1	6,446	6,446	335	2,656	4,137	335	335
176	Property 41	170963	30	0.4	28,174	28,174	1,466	11,607	18,084	1,466	1,466
177	Property 41	170963	31	0.3	20,515	20,515	1,067	8,452	13,168	1,067	1,067
178	Property 41	170963	32	0.2	13,278	13,278	691	5,470	8,523	691	691
179	Property 41	170963	33	0.1	6,446	6,446	335	2,656	4,137	335	335
180	Property 42	170963	30	0.4	28,174	28,174	1,466	11,607	18,084	1,466	1,466
181	Property 42	170963	31	0.3	20,515	20,515	1,067	8,452	13,168	1,067	1,067
182	Property 42	170963	32	0.2	13,278	13,278	691	5,470	8,523	691	691
183	Property 42	170963	33	0.1	6,446	6,446	335	2,656	4,137	335	335
184	Property 43	227950	80	0.4	8,569	8,569	446	3,530	5,500	446	446
185	Property 43	227950	79	0.3	6,619	6,619	344	2,727	4,249	344	344
186	Property 43	227950	78	0.2	4,545	4,545	237	1,873	2,917	237	237
187	Property 43	227950	77	0.1	2,341	2,341	122	964	1,503	122	122
188	Property 44	170963	100	0.4	3,558	3,558	185	1,466	2,284	185	185
189	Property 44	170963	99	0.3	2,749	2,749	143	1,132	1,764	143	143
190	Property 44	170963	98	0.2	1,887	1,887	98	778	1,212	98	98
191	Property 44	170963	97	0.1	972	972	51	400	624	51	51
192	Property 45	170963	100	0.4	3,558	3,558	185	1,466	2,284	185	185
193	Property 45	170963	99	0.3	2,749	2,749	143	1,132	1,764	143	143
194	Property 45	170963	98	0.2	1,887	1,887	98	778	1,212	98	98
195	Property 45	170963	97	0.1	972	972	51	400	624	51	51
196	Property 46	170963	80	0.4	6,427	6,427	334	2,648	4,125	334	334
197	Property 46	170963	79	0.3	4,965	4,965	258	2,045	3,187	258	258
198	Property 46	170963	78	0.2	3,409	3,409	177	1,404	2,188	177	177
199	Property 46	170963	77	0.1	1,756	1,756	91	723	1,127	91	91
200	Property 47	131510	100	0.4	2,737	2,737	142	1,128	1,757	142	142
201	Property 47	131510	99	0.3	2,114	2,114	110	871	1,357	110	110
202	Property 47	131510	98	0.2	1,452	1,452	76	598	932	76	76
203	Property 47	131510	97	0.1	748	748	39	308	480	39	39
204	Property 48	306855	100	0.4	6,387	6,387	332	2,631	4,099	332	332
205	Property 48	306855	99	0.3	4,934	4,934	257	2,033	3,167	257	257
206	Property 48	306855	98	0.2	3,388	3,388	176	1,396	2,174	176	176
207	Property 48	306855	97	0.1	1,745	1,745	91	719	1,120	91	91
208	Property 49	170963	80	0.4	6,427	6,427	334	2,648	4,125	334	334
209	Property 49	170963	79	0.3	4,965	4,965	258	2,045	3,187	258	258
210	Property 49	170963	78	0.2	3,409	3,409	177	1,404	2,188	177	177
211	Property 49	170963	77	0.1	1,756	1,756	91	723	1,127	91	91
212	Property 50	170963	100	0.4	3,558	3,558	185	1,466	2,284	185	185
213	Property 50	170963	99	0.3	2,749	2,749	143	1,132	1,764	143	143
214	Property 50	170963	98	0.2	1,887	1,887	98	778	1,212	98	98
215	Property 50	170963	97	0.1	972	972	51	400	624	51	51
216	Property 51	227950	100	0.4	4,744	4,744	247	1,955	3,045	247	247
217	Property 51	227950	99	0.3	3,665	3,665	191	1,510	2,352	191	191
218	Property 51	227950	98	0.2	2,517	2,517	131	1,037	1,615	131	131
219	Property 51	227950	97	0.1	1,296	1,296	67	534	832	67	67
220	Property 52	227950	80	0.4	8,569	8,569	446	3,530	5,500	446	446
221	Property 52	227950	79	0.3	6,619	6,619	344	2,727	4,249	344	344
222	Property 52	227950	78	0.2	4,545	4,545	237	1,873	2,917	237	237
223	Property 52	227950	77	0.1	2,341	2,341	122	964	1,503	122	122
224	Property 53	227950	100	0.4	4,744	4,744	247	1,955	3,045	247	247
225	Property 53	227950	99	0.3	3,665	3,665	191	1,510	2,352	191	191
226	Property 53	227950	98	0.2	2,517	2,517	131	1,037	1,615	131	131
227	Property 53	227950	97	0.1	1,296	1,296	67	534	832	67	67
228	Property 54	65754	100	0.4	1,369	1,369	71	564	878	71	71
229	Property 54	65754	99	0.3	1,057	1,057	55	436	679	55	55
230	Property 54	65754	98	0.2	726	726	38	299	466	38	38
231	Property 54	65754	97	0.1	374	374	19	154	240	19	19
232	Property 55	131510	30	0.4	21,672	21,672	1,128	8,929	13,911	1,128	1,128
233	Property 55	131510	31	0.3	15,781	15,781	821	6,501	10,129	821	821
234	Property 55	131510	32	0.2	10,214	10,214	531	4,208	6,556	531	531
235	Property 55	131510	33	0.1	4,958	4,958	258	2,043	3,183	258	258
236	Property 56	131510	30	0.4	21,672	21,672	1,128	8,929	13,911	1,128	1,128
237	Property 56	131510	31	0.3	15,781	15,781	821	6,501	10,129	821	821
238	Property 56	131510	32	0.2	10,214	10,214	531	4,208	6,556	531	531
239	Property 56	131510	33	0.1	4,958	4,958	258	2,043	3,183	258	258
240	Property 57	170963	30	0.4	28,174	28,174	1,466	11,607	18,084	1,466	1,466
241	Property 57	170963	31	0.3	20,515	20,515	1,067	8,452	13,168	1,067	1,067
242	Property 57	170963	32	0.2	13,278	13,278	691	5,470	8,523	691	691
243	Property 57	170963	33	0.1	6,446	6,446	335	2,656	4,137	335	335
244	Property 58	170963	30	0.4	28,174	28,174	1,466	11,607	18,084	1,466	1,466
245	Property 58	170963	31	0.3	20,515	20,515	1,067	8,452	13,168	1,067	1,067
246	Property 58	170963	32	0.2	13,278	13,278	691	5,470	8,523	691	691
247	Property 58	170963	33	0.1	6,446	6,446	335	2,656	4,137	335	335
248	Property 59	170963	30	0.4	28,174	28,174	1,466	11,607	18,084	1,466	1,466
249	Property 59	170963	31	0.3	20,515	20,515	1,067	8,452	13,168	1,067	1,067
250	Property 59	170963	32	0.2	13,278	13,278	691	5,470	8,523	691	691
251	Property 59	170963	33	0.1	6,446	6,446	335	2,656	4,137	335	335
252	Property 60	100825	30	0.4	16,615	16,615	865	6,845	10,665	865	865
253	Property 60	100825	31	0.3	12,099	12,099	630	4,984	7,766	630	630
254	Property 60	100825	32	0.2	7,831	7,831	407	3,226	5,026	407	407
255	Property 60	100825	33	0.1	3,801	3,801	198	1,566	2,440	198	198

308	Access road	20863	30	0.4	3,438	3,438	179	1,416	2,207	179	179
309	Access road	20863	31	0.3	2,503	2,503	130	1,031	1,607	130	130
310	Access road	20863	32	0.2	1,620	1,620	84	668	1,040	84	84
311	Access road	20863	33	0.1	787	787	41	324	505	41	41
312	Surface Water sewer	53244	20	0.4	11,792	11,792	614	4,858	7,569	614	614
313	Surface Water sewer	53244	21	0.3	8,586	8,586	447	3,537	5,511	447	447
314	Surface Water sewer	53244	22	0.2	5,558	5,558	289	2,290	3,567	289	289
315	Surface Water sewer	53244	23	0.1	2,698	2,698	140	1,111	1,732	140	140
316	Water main	30425	20	0.4	6,738	6,738	351	2,776	4,325	351	351
317	Water main	30425	21	0.3	4,907	4,907	255	2,021	3,149	255	255
318	Water main	30425	22	0.2	3,176	3,176	165	1,308	2,038	165	165
319	Water main	30425	23	0.1	1,542	1,542	80	635	990	80	80
320	Loss of Enjoyment (day visitors and long distance walkers)	1976691	20	0.4	437,778	437,778	22,779	180,359	280,993	22,779	22,779
321	Loss of Enjoyment (day visitors and long distance walkers)	1976691	21	0.3	318,771	318,771	16,587	131,329	204,607	16,587	16,587
322	Loss of Enjoyment (day visitors and long distance walkers)	1976691	22	0.2	206,324	206,324	10,736	85,003	132,432	10,736	10,736
323	Loss of Enjoyment (day visitors and long distance walkers)	1976691	23	0.1	100,157	100,157	5,211	41,263	64,287	5,211	5,211
324	Loss of Enjoyment (90% of day visitors)	1716332	24	1	844,322	844,322	43,932	347,849	541,938	43,932	43,932
325	Additional Travel Resource costs (10% of day visitors)	30401	24	1	14,955	14,955	778	6,161	9,599	778	778
326	Loss of Enjoyment (80%)	1525629	25	1	728,649	728,649	37,914	300,194	467,692	37,914	37,914
327	Additional Travel Resource costs (20%)	60802	25	1	29,039	29,039	1,511	11,964	18,639	1,511	1,511
328	Loss of Enjoyment (70%)	1334925	26	1	618,998	618,998	32,208	255,019	397,311	32,208	32,208
329	Additional Travel Resource costs (30%)	91203	26	1	42,290	42,290	2,200	17,423	27,144	2,200	2,200
330	Loss of Enjoyment (60%)	1144221	27	1	515,116	515,116	26,803	212,221	330,633	26,803	26,803
331	Additional Travel Resource costs (40%)	121604	27	1	54,745	54,745	2,849	22,554	35,138	2,849	2,849
332	Loss of Enjoyment (50%)	953518	28	1	416,761	416,761	21,685	171,700	267,503	21,685	21,685
333	Additional Travel Resource costs (50%)	152005	28	1	66,438	66,438	3,457	27,371	42,644	3,457	3,457
334	Loss of Enjoyment (40%)	762814	29	1	323,697	323,697	16,843	133,359	207,769	16,843	16,843
335	Additional Travel Resource costs (60%)	182405	29	1	77,403	77,403	4,028	31,889	49,682	4,028	4,028
336	Loss of Enjoyment (30%)	572111	30	1	235,702	235,702	12,264	97,106	151,288	12,264	12,264
337	Additional Travel Resource costs (70%)	212806	30	1	87,673	87,673	4,562	36,120	56,274	4,562	4,562
338	Loss of Enjoyment (20%)	381407	31	1	152,558	152,558	7,938	62,852	97,921	7,938	7,938
339	Additional Travel Resource costs (80%)	243207	31	1	97,280	97,280	5,062	40,078	62,440	5,062	5,062
340	Loss of Enjoyment (10%)	190704	32	1	74,057	74,057	3,853	30,511	47,535	3,853	3,853
341	Additional Travel Resource costs (90%)	273608	32	1	106,252	106,252	5,529	43,774	68,199	5,529	5,529
342	Loss of Enjoyment (0%)	0	33	1	-	-	-	-	-	-	-
343	Additional Travel Resource costs (100%)	304009	33	1	114,619	114,619	5,964	47,222	73,570	5,964	5,964
Totals		75,463,219			9,170,922	9,170,922	477,189	3,778,299	5,886,466	477,189	477,189

Notes
 Make one entry in the description column for each property (or group of properties) as this determines subsequent calculation
 MV = risk free market value at base date for estimate - must be entered on each line when probability distribution is used
 Equivalent annual value = MV x discount rate (assumes infinite life)
 Year is year in which there is the probability of loss shown, years must be entered consecutively for each property or group
 If no distribution is used enter year of expected year of loss and enter 1.0 in probability column
 Columns G to K show expected present values of asset losses with each option, assuming extensions of life entered above
 The loss is calculated using the formula $PV \text{ loss} = MV * \text{Prob of loss} * (1 - (1 - 1/(1+r)^{\text{Year of loss}})) = MV * \text{Prob of loss} / ((1+r)^{\text{Year of loss}})$
 Additional properties can be entered by inserting lines above line 62 and copying all formulae, including hidden calculation in column C
 Asset value in subsequent years for each property is additional value for that property if life extended

