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# **Robin Hood's Bay Coastal Strategy**

## **Appendix D1**

### **Economic appraisal**

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Project Summary Sheet						
<b>Client/Authority</b> Scarborough Borough Council				Prepared (date) 10/11/2011 Printed 14/12/2012 Prepared by JC Checked by JC Checked date		
<b>Project name</b> Robin Hood's Bay CSS						
<b>Policy Unit</b> Base date for estimates (year 0) 24.1 Scaling factor (e.g. £m, £k, £) Oct-2012 Year £ (used for all costs, losses and benefits) Discount Rate 0 30 75 Optimism bias adjustment factor 3.5% 3.00% 2.50% Costs and benefits of options 60%						
Option number	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)						
<b>COSTS:</b>						
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	0					
<b>Total PV Costs £ excluding contributions</b>	0	141,425	222,801	1,898,937		
<b>Total PV Costs £ taking contributions into account</b>	0	141,425	222,801	1,898,937		
<b>BENEFITS:</b>						
PV monetised flood damages	0	0	0	0		
PV monetised flood damages avoided	0	0	0	0		
PV monetised erosion damages	160,226	160,226	8,337	8,337		
PV monetised erosion damages avoided (protected)	0	0	151,889	151,889		
<b>Total monetised PV damages £</b>	160,226	160,226	8,337	8,337		
<b>Total monetised PV benefits £</b>	0	0	151,889	151,889		
PV damages (from scoring and weighting)						
PV damages avoided/benefits (from scoring and weighting)						
PV benefits from ecosystem services						
<b>Total PV damages £</b>	160,226	160,226	8,337	8,337		
<b>Total PV benefits £</b>		0	151,889	151,889		
<b>DECISION-MAKING CRITERIA:</b>						
<b>excluding contributions</b>						
<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			
<b>including contributions</b>						
<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	0.0		
			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			
<b>Best practicable environmental option (WFD)</b>						
<b>Brief description of options:</b>						
Option 1a	NAI					
Option 1b	NAI (with H&S)					
Option 2	AM(Property Roll Back Scheme)					
Option 3	All (Rock Armour)					
<b>Comments and assumptions:</b>						

Project Summary Sheet					
<b>Client/Authority</b>			Prepared (date)		
SBC			19/07/2010		
<b>Project name</b>			Printed		
RHB CSS			14/12/2012		
<b>Policy Unit</b>			Prepared by		
24.1			NC		
Base date for estimates (year 0)			Checked by		
Oct-2012			ZH		
Scaling factor (e.g. £m, £k, £)			Checked date		
£			14/12/2012		
Principle land use band			(used for all costs, losses and benefits)		
B			(A to E)		
Discount rate			3%		
<b>Costs and benefits of options</b>					
	<b>Costs and benefits £</b>				
	Option 1a	Option 1b	Option 2	Option 3	
<b>PV costs PVc</b>	-	141,425.46	222,801.16	1,898,937.09	
<b>PV damage PVd</b>	160,226.12	160,226.12	8,337.02	8,337.02	
<b>PV damage avoided</b>		-	151,889.10	151,889.10	
<b>PV assets Pva</b>					
<b>PV asset protection benefits</b>		-	-	-	
<b>Total PV benefits PVb</b>		-	151,889.10	151,889.10	
<b>Net Present Value NPV</b>	-	141,425.46	-	70,912.06	- 1,747,047.99
<b>Average benefit/cost ratio</b>		-	0.68	0.08	
<b>Incremental benefit/cost ratio</b>			1.87	-	
- Highest b/c -					
<b>Brief description of options:</b>					
Option 1a	NAI				
Option 1b	NAI (with H&S)				
Option 2	AM(Property Roll Back Scheme)				
Option 3	All (Rock Armour)				
<b>Notes:</b>					
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			Option:			Delay (yrs)		Prepared (date)	
RHB CSS			Option 1b			0		19/07/2010	
Policy Unit			Option 2			100		Printed	
Base date for estimates (year 0)			Option 3			100		29/10/2010	
Scaling factor (e.g. £m, £k, £)								Prepared by	
Discount rate								Checked by	
								Checked date	
								29/10/2010	
Ref	Asset Description	MV £	Year	Prob of loss without project in year	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	
<b>Totals</b>		<b>4,580,000</b>			<b>160,226</b>	<b>160,226</b>	<b>8,337</b>	<b>8,337</b>	
<b>Notes</b> 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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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					Option 1b Capital				Do Min H&S Maint.				Other				TOTALS: Cash				PV				Option 2 Capital				Roll back study option Maint.				Other				TOTALS: Cash				PV				Option 3 Capital				Rock Armour Maint.				Other				TOTALS: Cash				PV																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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<b>Project name</b> Robin Hood's Bay CSS						
<b>Policy Unit</b> Base date for estimates (year 0) 25.1 Scaling factor (e.g. £m, £k, £) Oct-2012 Year £ (used for all costs, losses and benefits) Discount Rate 0 30 75 Optimism bias adjustment factor 3.5% 3.00% 2.50% Costs and benefits of options 60%						
Option number	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)						
<b>COSTS:</b>						
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	0					
<b>Total PV Costs £ excluding contributions</b>	0	163,655	246,407	7,241,387		
<b>Total PV Costs £ taking contributions into account</b>	0	163,655	246,407	7,241,387		
<b>BENEFITS:</b>						
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		
<b>Total monetised PV damages £</b>	466,600	372,397	19,377	19,377		
<b>Total monetised PV benefits £</b>		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						
<b>Total PV damages £</b>	466,600	466,600	24,279	192,233		
<b>Total PV benefits £</b>		0	442,321	274,367		
<b>DECISION-MAKING CRITERIA:</b>						
<b>excluding contributions</b>						
<i>Based on total PV benefits (includes 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 (excludes 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			
<b>including contributions</b>						
<i>Taking account of contributions (includes 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 (excludes 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			
<b>Best practicable environmental option (WFD)</b>						
<b>Brief description of options:</b>						
Option 1a	NAI					
Option 1b	NAI (with H&S)					
Option 2	AM(Property Roll Back Scheme)					
Option 3	All (Rock Armour)					
<b>Comments and assumptions:</b>						

Project Summary Sheet					
<b>Client/Authority</b>			Prepared (date)		
SBC			29/10/2010		
<b>Project name</b>			Printed		
RHB CSS			29/10/2010		
<b>Policy Unit</b>			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%		
<b>Costs and benefits of options</b>					
	<b>Costs and benefits £</b>				
	Option 1a	Option 1b	Option 2	Option 3	
<b>PV costs PVc</b>	-	163,655.32	246,406.59	7,241,386.89	
<b>PV damage PVd</b>	466,599.98	466,599.98	24,278.52	192,233.01	
<b>PV damage avoided</b>		-	442,321.45	274,366.96	
<b>PV assets Pva</b>					
<b>PV asset protection benefits</b>		-	-	-	
<b>Total PV benefits PVb</b>		-	442,321.45	274,366.96	
<b>Net Present Value NPV</b>	-	163,655.32	195,914.87	- 6,967,019.93	
<b>Average benefit/cost ratio</b>		-	1.80	0.04	
<b>Incremental benefit/cost ratio</b>			5.35	- 0.02	
- Highest b/c -					
<b>Brief description of options:</b>					
Option 1a	NAI				
Option 1b	NAI (with H&S)				
Option 2	AM (Property Roll Back)				
Option 3	All (Rock Armour)				
<b>Notes:</b>					
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:					
$(PVb(\text{current option}) - PVb(\text{previous option})) / (PVc(\text{current option}) - PVc(\text{previous option}))$					

Client/Authority										Present Value Losses										Sheet Nr.		2																	
SBC																																							
Project name										Results £										Prepared (date)		14/12/2012																	
RHB CSS																				Printed		14/12/2012																	
Policy Unit																				Prepared by		NC																	
Base date for estimates (year 0																				Checked by		ZH																	
Scaling factor (e.g. £m, £k, £)																				Checked date		14/12/2012																	
Discount rate																																							
Option 1 do nothing										Option 2 Do Min H&S										Option 3 Further Studies & Minor Works										Option 4 Engineered Solutions									
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Erosion Loss Calculation Sheet with delay options						Sheet Nr.		3	
Client/Authority									
SBC									
Project name			Option:		Delay (yrs)		Prepared (date)		29/10/2010
RHB CSS			Option 1b		0		Printed		29/10/2010
Policy Unit			Option 2		100		Prepared by		NC
Base date for estimates (year 0)			Option 3		30		Checked by		ZH
Scaling factor (e.g. £m, £k, £)							Checked date		29/10/2010
Discount rate									
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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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Project Summary Sheet							
<b>Client/Authority</b> Scarborough Borough Council				Prepared (date) 10/11/2011 Printed 14/12/2012 Prepared by JC Checked by JC Checked date			
<b>Project name</b> Robin Hood's Bay CSS							
<b>Policy Unit</b> Base date for estimates (year 0) 25.2 Scaling factor (e.g. £m, £k, £) Oct-2012 Year £ (used for all costs, losses and benefits) Discount Rate 0 30 75 Optimism bias adjustment factor 3.5% 3.00% 2.50% Costs and benefits of options 60%							
Option number	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)							
<b>COSTS:</b>							
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							
<b>Total PV Costs £ excluding contributions</b>	0	141,425	2,814,853	3,302,061	1,075,335	9,326,592	7,216,662
<b>Total PV Costs £ taking contributions into account</b>	0	141,425	2,814,853	3,302,061	1,075,335	9,326,592	7,216,662
<b>BENEFITS:</b>							
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
<b>Total monetised PV damages £</b>	9,170,922	9,170,922	477,189	3,778,299	5,886,466	477,189	477,189
<b>Total monetised PV benefits £</b>		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							
<b>Total PV damages £</b>	9,170,922	9,170,922	477,189	3,778,299	5,886,466	477,189	477,189
<b>Total PV benefits £</b>		0	8,693,733	5,392,624	3,284,456	8,693,733	8,693,733
<b>DECISION-MAKING CRITERIA:</b>							
<b>excluding contributions</b>							
<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				
<b>including contributions</b>							
<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)							
<b>Brief description of options:</b>							
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]						
<b>Comments and assumptions:</b>							

Project Summary Sheet							
<b>Client/Authority</b>				<b>Prepared (date)</b>			
SBC				23/09/2010			
<b>Project name</b>				<b>Printed</b>			
RHB CSS				14/12/2012			
<b>Policy Unit</b>				<b>Prepared by</b>			
25.2 (b)				NC			
<b>Base date for estimates (year 0)</b>				<b>Checked by</b>			
Oct-2012				ZH			
<b>Scaling factor (e.g. £m, £k, £)</b>				<b>Checked date</b>			
£				23/10/2010			
<b>Principle land use band</b>				<b>(used for all costs, losses and benefits)</b>			
B				(A to E)			
<b>Discount rate</b>							
3%							
<b>Costs and benefits of options</b>							
	<b>Costs and benefits £</b>						
	Option 1a	Option 1b	Option 2	Option 3	Option 4	Option 5	Option 6
<b>PV costs PVc</b>	-	141,425.46	2,814,852.55	3,302,061.06	1,075,334.66	9,326,592.23	7,216,662.13
<b>PV damage PVd</b>	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
<b>PV damage avoided</b>		-	8,693,733.19	5,392,623.76	3,284,456.26	8,693,733.19	8,693,733.19
<b>PV assets Pva</b>							
<b>PV asset protection benefits</b>		-	-	-	-	-	-
<b>Total PV benefits PVb</b>		-	8,693,733.19	5,392,623.76	3,284,456.26	8,693,733.19	8,693,733.19
<b>Net Present Value NPV</b>	-	141,425.46	5,878,880.64	2,090,562.70	2,209,121.60	632,859.03	1,477,071.07
<b>Average benefit/cost ratio</b>		-	3.09	1.63	3.05	0.93	1.20
<b>Incremental benefit/cost ratio</b>		-	3.25	6.78	0.95	0.66	-
	Highest b/c						
<b>Brief description of options:</b>							
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]						
<b>Notes:</b>							
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(current option) - PVb(previous option))/(PVc(current option) - PVc(previous option))							



Erosion Loss Calculation Sheet with delay options										Sheet Nr.		3					
Client/Authority Scarborough Borough Council																	
Project name Robin Hoods Bay Coastal Strategy										Option:		Delay (yrs)		Prepared (date)			
Policy Unit Base date for estimates (year 0) Scaling factor (e.g. £m, £k, £)										25.2 (b) Oct-2012 £		0 100 30 15 100 100		Printed Prepared by Checked date		24/06/2010 14/12/2012 DR ZH 24/10/2010	
Discount rate 3%																	
Ref	Asset	MV £	Year	Prob of loss without project in year	Expected Present Value of asset losses £												
	Description				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	Property 23	22795															

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
256	Property 61	227950	80	0.4	8,569	8,569	446	3,530	5,500	446	446
257	Property 61										

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
<b>Notes</b> 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 extended											



