

Project Summary Sheet

Client/Authority	North Yorkshire County Council	Prepared (date)	31/05/2012
Project name	Sandsend Road Coast Protection Scheme PAR - Strategic Options	Printed	31/05/2012
Project reference	9W5572/Z3	Prepared by	Emma Hick
Base date for estimates (year 0)	Q4 2011	Checked by	
Scaling factor (e.g. £m, £k, £)	£	Checked date	
Year	0		
Discount Rate	3.5%		
Optimism bias adjustment factor	60%		

Option number	Costs and benefits £				
	Option 1	Option 2	Option 3	Option 4	Option 5
Option name	Do-nothing	Do Minimum	Realign A174	Upgrade Minor Roads	Retain A174 on current alignment
AEP or SoP (where relevant)					

COSTS:					
PV capital costs	0	0	26,599,361	13,029,255	8,263,316
PV operation and maintenance costs	0	1,501,338	405,594	405,594	415,495
PV other	0	45,592	45,592	45,592	45,594
Optimism bias adjustment	0	928,158	16,230,328	8,088,264	5,234,643
PV negative costs (e.g. sales)	0	0	0	0	0
PV contributions					
Total PV Costs £ excluding contributions	0	2,475,087	43,280,875	21,568,705	13,959,047
Total PV Costs £ taking contributions into account	0	2,475,087	43,280,875	21,568,705	13,959,047

BENEFITS:					
PV monetised flood damages	0	0	0	0	0
PV monetised flood damages avoided		0	0	0	0
PV monetised erosion damages	101,673,563	101,488,374	2,113,385	63,247,507	298,140
PV monetised erosion damages avoided (protected)		185,189	99,560,178	38,426,056	101,375,422
Total monetised PV damages £	101,673,563	101,488,374	2,113,385	63,247,507	298,140
Total monetised PV benefits £		185,189	99,560,178	38,426,056	101,375,422
PV damages (from scoring and weighting)					
PV damages avoided/benefits (from scoring and weighting)					
PV benefits from ecosystem services					
Total PV damages £	101,673,563	101,488,374	2,113,385	63,247,507	298,140
Total PV benefits £		185,189	99,560,178	38,426,056	101,375,422

DECISION-MAKING CRITERIA:					
excluding contributions					
Based on total PV benefits (includes benefits from scoring and weighting and ecosystem services)					
Net Present Value NPV		-2,289,898	56,279,303	16,857,351	87,416,375
Average benefit/cost ratio BCR		0.1	2.3	1.8	7.3
Incremental benefit/cost ratio IBCR			2.4	2.8	-8.3
			IBCR>1	IBCR>1	Highest bcr

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			IBCR>1	IBCR>1	Highest bcr

including contributions					
Taking account of contributions (includes benefits from scoring and weighting and ecosystem services)					
Net Present Value NPV		-2,289,898	56,279,303	16,857,351	87,416,375
Average benefit/cost ratio BCR		0.1	2.3	1.8	7.3
Incremental benefit/cost ratio IBCR			2.4	2.8	-8.3
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Best practicable environmental option (WFD)

Brief description of options:	
Option 1	Do-nothing
Option 2	Do Minimum
Option 3	Realign A174
Option 4	Upgrade Minor Roads
Option 5	Retain A174 on current alignment

Comments and assumptions:

Erosion Loss Calculation Sheet with delay options					Sheet Nr.		1		
Client/Authority North Yorkshire County Council									
Project name Sandsend Road Coast Protection Scheme PAR - Strat			Option: Option 2		Delay (yrs) 5		Prepared (date) Printed		31/05/2012 31/05/2012
Project reference Base date for estimates (year 0)			Option 3		5		Prepared by		Emma Hick
Scaling factor (e.g. £m, £k, £)			Option 4		5		Checked by		0
Discount rate			Option 5		100		Checked date		0
Ref	Asset Description	Risk free market value £	Year when the asset is expected to be lost	Prob of loss in year	Expected value of asset losses £				
					Do-nothing	Do Minimum	Realign A174	Upgrade Minor Roads	Retain A174 on current alignment
0	Sandhills	275802.00	99	1	14,366.10	-	-	-	-
1	Fairfields	173585.00	99	1	9,041.78	-	-	-	-
2	Cliff View	173585.00	99	1	9,041.78	-	-	-	-
3	Haywood	148196.00	99	1	7,719.30	-	-	-	-
4	Norwood	18506.00	99	1	963.95	-	-	-	-
5	Ridgewood	148196.00	99	1	7,719.30	-	-	-	-
6	Woodlea	148196.00	99	1	7,719.30	-	-	-	-
7	Sea View	27500.00	99	1	1,432.43	-	-	-	-
8	Ness View	173585.00	99	1	9,041.78	-	-	-	-
9	1 Railway Cottages	173585.00	99	1	9,041.78	-	-	-	-
10	2 Railway Cottages	173585.00	99	1	9,041.78	-	-	-	-
11	The Surgery	74000.00	50	1	14,597.44	12,591.88	-	12,591.88	-
12	The Surgery - car park	7200.00	99	1	375.04	-	-	-	-
13	The Surgery	35714.00	99	1	1,860.29	-	-	-	-
14	The Surgery - Doctor	34831.00	99	1	1,814.29	-	-	-	-
15	The Surgery - Flat	141192.00	99	1	7,354.48	-	-	-	-
16									
17	Historic Assets - MU4CD	500.00	15	1	298.45	114.34	251.28	251.28	-
18	Historic Assets - MU5	500.00	15	1	298.45	251.28	251.28	251.28	-
19	Historic Assets - MU6	2000.00	0	1	2,000.00	2,000.00	1,683.95	1,683.95	-
20	Historic Assets - MU7A	500.00	0	1	500.00	500.00	500.00	500.00	500.00
21									
22	Services - MU4CD - 20yr	82916.65	20	1	41,671.08	35,085.93	-	35,085.93	-
23	Services - MU4CD - 50yr	117334.88	50	1	23,145.80	19,965.77	-	19,965.77	-
24	Services - MU4CD - 100yr	50062.88	99	1	2,607.70	-	-	-	-
25	Services - MU5 - 20yr	908641.27	20	1	456,652.10	384,488.82	384,488.82	384,488.82	-
26	Services - MU5 - 50yr	69462.25	50	1	13,702.31	11,819.73	11,819.73	11,819.73	-
27	Services - MU6 - 20yr	168962.22	20	1	84,914.65	84,914.65	84,914.65	84,914.65	-
28	Services - MU7A - 20yr	380728.20	20	1	191,341.01	191,341.01	191,341.01	191,341.01	191,341.01
29	Services - MU7A - 50yr	60826.40	50	1	11,998.78	11,998.78	11,998.78	11,998.78	11,998.78
30	Services - MU7A - 100yr	40550.93	99	1	2,112.24	2,112.24	2,112.24	2,112.24	2,112.24
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
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46									
47									
48									
49									
50									
Totals		3810243.67			942373.37	757184.42	689361.74	757005.31	205952.02

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 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

Damage Cost Calculation Sheet - Do Nothing (Linear)										Sheet Nr.	2									
Client/Authority											North Yorkshire County Council									
Project name											Sandsend Road Coast Protection Scheme PAR - S									
Project reference											9W5572/Z3									
Base date for estimates (year 0)											Q4 2011									
Scaling factor (e.g. £m, £k, £)											£									
Initial discount rate											3.5%	3.0%	2.5%	Prepared (date)	31/05/2012					
Year											<	10	30	>	PV breach/failure	£	Printed	31/05/2012		
Breach pb											0	1.000	1.000	1.000	99	Ave Annual Damage (overtopping)	£	0.00 /yr	Prepared by	Emma Hick
PV Total Damage											£	100,731,189	(calculated below)	Checked by	0	Checked date	0			
Year	Discount factor	Prob of a breach/failure	Prob that breach/failure occurs in year	Prob that breach/failure has not occurred	PV damage due to: breach or failure	over-topping	Road Clearance	Other damages Traffic Disruption	Damages 3	PV total damage										
0	1.000	0.100	0.100	0.900	0.00	0.00	58572.78735			58572.79										
1	0.966	0.190	0.171	0.729	0.00	0.00				0.00										
2	0.934	0.280	0.204	0.525	0.00	0.00	54678.32374			54678.32										
3	0.902	0.370	0.194	0.331	0.00	0.00				0.00										
4	0.871	0.460	0.152	0.179	0.00	0.00	51042.80029			51042.80										
5	0.842	0.550	0.098	0.080	0.00	0.00				0.00										
6	0.814	0.640	0.051	0.029	0.00	0.00	47649.00025			47649.00										
7	0.786	0.730	0.021	0.008	0.00	0.00				0.00										
8	0.759	0.820	0.006	0.001	0.00	0.00	44480.85159			44480.85										
9	0.734	0.910	0.001	0.000	0.00	0.00				0.00										
10	0.709	1.000	0.000	0.000	0.00	0.00	41523.35092			41523.35										
11	0.685	1.000	0.000	0.000	0.00	0.00				0.00										
12	0.662	1.000	0.000	0.000	0.00	0.00	38762.4924			38762.49										
13	0.639	1.000	0.000	0.000	0.00	0.00				0.00										
14	0.618	1.000	0.000	0.000	0.00	0.00	36185.20143			36185.20										
15	0.597	1.000	0.000	0.000	0.00	0.00				0.00										
16	0.577	1.000	0.000	0.000	0.00	0.00	33779.27273			33779.27										
17	0.557	1.000	0.000	0.000	0.00	0.00				0.00										
18	0.538	1.000	0.000	0.000	0.00	0.00	31533.31255			31533.31										
19	0.520	1.000	0.000	0.000	0.00	0.00		3339206.34		3339206.34										
20	0.503	1.000	0.000	0.000	0.00	0.00		3226286.32		3226286.32										
21	0.486	1.000	0.000	0.000	0.00	0.00		3117184.85		3117184.85										
22	0.469	1.000	0.000	0.000	0.00	0.00		3011772.8		3011772.80										
23	0.453	1.000	0.000	0.000	0.00	0.00		2909925.41		2909925.41										
24	0.438	1.000	0.000	0.000	0.00	0.00		2811522.14		2811522.14										
25	0.423	1.000	0.000	0.000	0.00	0.00		2716446.51		2716446.51										
26	0.409	1.000	0.000	0.000	0.00	0.00		2624586		2624586.00										
27	0.395	1.000	0.000	0.000	0.00	0.00		2535831.88		2535831.88										
28	0.382	1.000	0.000	0.000	0.00	0.00		2450079.12		2450079.12										
29	0.369	1.000	0.000	0.000	0.00	0.00		2367226.20		2367226.20										
30	0.356	1.000	0.000	0.000	0.00	0.00		2287175.07		2287175.07										
31	0.346	1.000	0.000	0.000	0.00	0.00		2220558.32		2220558.32										
32	0.336	1.000	0.000	0.000	0.00	0.00		2155881.87		2155881.87										
33	0.326	1.000	0.000	0.000	0.00	0.00		2093089.19		2093089.19										
34	0.317	1.000	0.000	0.000	0.00	0.00		2032125.43		2032125.43										
35	0.307	1.000	0.000	0.000	0.00	0.00		1972937.31		1972937.31										
36	0.298	1.000	0.000	0.000	0.00	0.00		1915473.11		1915473.11										
37	0.290	1.000	0.000	0.000	0.00	0.00		1859682.64		1859682.64										
38	0.281	1.000	0.000	0.000	0.00	0.00		1805517.12		1805517.12										
39	0.273	1.000	0.000	0.000	0.00	0.00		1752929.24		1752929.24										
40	0.265	1.000	0.000	0.000	0.00	0.00		1701873.05		1701873.05										
41	0.257	1.000	0.000	0.000	0.00	0.00		1652303.93		1652303.93										
42	0.250	1.000	0.000	0.000	0.00	0.00		1604178.58		1604178.58										
43	0.243	1.000	0.000	0.000	0.00	0.00		1557454.93		1557454.93										
44	0.236	1.000	0.000	0.000	0.00	0.00		1512092.16		1512092.16										
45	0.229	1.000	0.000	0.000	0.00	0.00		1468050.65		1468050.65										
46	0.222	1.000	0.000	0.000	0.00	0.00		1425291.89		1425291.89										
47	0.216	1.000	0.000	0.000	0.00	0.00		1383778.53		1383778.53										
48	0.209	1.000	0.000	0.000	0.00	0.00		1343474.30		1343474.30										
49	0.203	1.000	0.000	0.000	0.00	0.00		1304343.98		1304343.98										
50	0.197	1.000	0.000	0.000	0.00	0.00		1266353.38		1266353.38										
51	0.192	1.000	0.000	0.000	0.00	0.00		1229469.30		1229469.30										
52	0.186	1.000	0.000	0.000	0.00	0.00		1193659.52		1193659.52										
53	0.181	1.000	0.000	0.000	0.00	0.00		1158892.74		1158892.74										
54	0.175	1.000	0.000	0.000	0.00	0.00		1125138.58		1125138.58										
55	0.170	1.000	0.000	0.000	0.00	0.00		1092367.55		1092367.55										
56	0.165	1.000	0.000	0.000	0.00	0.00		1060551.02		1060551.02										
57	0.160	1.000	0.000	0.000	0.00	0.00		1029661.19		1029661.19										
58	0.156	1.000	0.000	0.000	0.00	0.00		999671.054		999671.05										
59	0.151	1.000	0.000	0.000	0.00	0.00		970554.421		970554.42										
60	0.147	1.000	0.000	0.000	0.00	0.00		942285.846		942285.85										
61	0.143	1.000	0.000	0.000	0.00	0.00		914840.627		914840.63										
62	0.138	1.000	0.000	0.000	0.00	0.00		888194.784		888194.78										
63	0.134	1.000	0.000	0.000	0.00	0.00		862325.033		862325.03										
64	0.130	1.000	0.000	0.000	0.00	0.00		837208.769		837208.77										
65	0.127	1.000	0.000	0.000	0.00	0.00		812824.048		812824.05										
66	0.123	1.000	0.000	0.000	0.00	0.00		789149.561		789149.56										
67	0.119	1.000	0.000	0.000	0.00	0.00		766164.623		766164.62										
68	0.116	1.000	0.000	0.000	0.00	0.00		743849.148		743849.15										
69	0.112	1.000	0.000	0.000	0.00	0.00		722183.639		722183.64										
70	0.109	1.000	0.000	0.000	0.00	0.00		701149.164		701149.16										
71	0.106	1.000	0.000	0.000	0.00	0.00		680727.344		680727.34										
72	0.103	1.000	0.000	0.000	0.00	0.00		660900.334		660900.33										
73	0.100	1.000	0.000	0.000	0.00	0.00		641650.809		641650.81										
74	0.097	1.000	0.000	0.000	0.00	0.00		622961.951		622961.95										
75	0.094	1.000	0.000	0.000	0.00	0.00		604817.428		604817.43										
76	0.092	1.000	0.000	0.000	0.00	0.00		590065.783		590065.78										
77	0.090	1.000	0.000	0.000	0.00	0.00		575673.935		575673.94										
78	0.087	1.000	0.000	0.000	0.00	0.00		561633.107		561633.11										
79	0.085	1.000	0.000	0.000	0.00	0.00		547934.739		547934.74										
80	0.083	1.000	0.000	0.000	0.00	0.00		534570.477		534570.48										
81	0.081	1.000	0.000	0.000	0.00	0.00		521532.173		521532.17										
82	0.079	1.000	0.000	0.000	0.00	0.00		508811.876		508811.88										
83	0.077	1.000	0.000	0.000	0.00	0.00		496401.83		496401.83										
84	0.075	1.000	0.000	0.000	0.00	0.00		484294.468		484294.47										
85	0.074	1.000	0.000	0.000	0.00	0.00		472482.408		472482.41										
86	0.072	1.000	0.000	0.000	0.00	0.00		460958.447		460958.45										
87	0.070	1.000	0.000	0.000	0.00	0.00		449715.558		449715.56										
88	0.068	1.000	0.000	0.000	0.00	0.00		438746.886		438746.89										
89	0.067	1.000	0.000	0.000	0.00	0.00		428045.742		428045.74										
90	0.065	1.000	0.000	0.000	0.00	0.00		417605.602		417605.60										
91	0.063	1.000	0.000	0.000	0.00	0.00		407420.1		407420.10										
92	0.062	1.000	0.000	0.000	0.00	0.00		397483.024		397483.02										
93	0.060	1.000	0.000	0.000	0.00	0.00		387788.316		387788.32										
94	0.059	1.000	0.000	0.000	0.00	0.00		378330.065		378330.06										
95	0.057	1.000	0.000	0.000	0.00	0.00		369102.502		369102.50										
96	0.056	1.000	0.000	0.000																

Damage Cost Calculation Sheet - Do Something (Linear)										Sheet Nr.	3	
Client/Authority											North Yorkshire County Council	
Project name											Option:	
Sandsend Road Coast Protection Scheme PAR - S											Do Minimum	
Project reference											9W5572/Z3	
Base date for estimates (year 0)											Q4 2011	
Scaling factor (e.g. Em, Ek, E)											£	
Initial discount rate											3.5%	
Year											0	
Breach pb											0.100	
PV Total Damage											£ 100,731,189 (calculated below)	
Prepared (date)											31/05/2012	
Printed											31/05/2012	
Prepared by											Emma Hick	
Checked by											0	
Checked date											0	
PV breach/failure											£	
Ave Annual Damage (overtopping)											/yr	
Year											0	
Discount											0	
Prob of a breach or failure											0.100	
Prob that breach/failure: occurs in year											0.100	
PV damage due to: breach or failure											0.100	
Other damages											Road Clearance	
PV total damage											Disruption	
Road Clearance											Damages 3	
Disruption											PV total damage	
0	1.000	0.100	0.100	0.900	0.00	0.00	58572.78735			58572.79		
1	0.966	0.102	0.102	0.898	0.00	0.00				0.00		
2	0.934	0.104	0.104	0.896	0.00	0.00	54678.32374			54678.32		
3	0.902	0.106	0.106	0.894	0.00	0.00				0.00		
4	0.871	0.108	0.108	0.892	0.00	0.00	51042.80029			51042.80		
5	0.842	0.110	0.110	0.890	0.00	0.00				0.00		
6	0.814	0.112	0.112	0.888	0.00	0.00	47649.00025			47649.00		
7	0.786	0.114	0.114	0.886	0.00	0.00				0.00		
8	0.759	0.116	0.116	0.884	0.00	0.00	44480.85159			44480.85		
9	0.734	0.118	0.118	0.882	0.00	0.00				0.00		
10	0.709	0.120	0.120	0.880	0.00	0.00	41523.35092			41523.35		
11	0.685	0.122	0.122	0.878	0.00	0.00				0.00		
12	0.662	0.124	0.124	0.876	0.00	0.00	38762.4924			38762.49		
13	0.639	0.127	0.127	0.873	0.00	0.00				0.00		
14	0.618	0.129	0.129	0.871	0.00	0.00	36185.20143			36185.20		
15	0.597	0.131	0.131	0.869	0.00	0.00				0.00		
16	0.577	0.133	0.133	0.867	0.00	0.00	33779.27273			33779.27		
17	0.557	0.135	0.135	0.865	0.00	0.00				0.00		
18	0.538	0.137	0.137	0.863	0.00	0.00	31533.31255			31533.31		
19	0.520	0.139	0.139	0.861	0.00	0.00				0.00		
20	0.503	0.141	0.141	0.859	0.00	0.00		3339206.34		3339206.34		
21	0.486	0.143	0.143	0.857	0.00	0.00		3226286.32		3226286.32		
22	0.469	0.145	0.145	0.855	0.00	0.00		3117184.85		3117184.85		
23	0.453	0.147	0.147	0.853	0.00	0.00		3011772.8		3011772.8		
24	0.438	0.149	0.149	0.851	0.00	0.00		2909925.41		2909925.41		
25	0.423	0.151	0.151	0.849	0.00	0.00		2811522.14		2811522.14		
26	0.409	0.153	0.153	0.847	0.00	0.00		2716446.51		2716446.51		
27	0.395	0.155	0.155	0.845	0.00	0.00		2624586.00		2624586.00		
28	0.382	0.157	0.157	0.843	0.00	0.00		2535831.88		2535831.88		
29	0.369	0.159	0.159	0.841	0.00	0.00		2450079.12		2450079.12		
30	0.356	0.161	0.161	0.839	0.00	0.00		2367226.2		2367226.2		
31	0.346	0.163	0.163	0.837	0.00	0.00		2287175.07		2287175.07		
32	0.336	0.165	0.165	0.835	0.00	0.00		2220558.32		2220558.32		
33	0.326	0.167	0.167	0.833	0.00	0.00		2155881.87		2155881.87		
34	0.317	0.169	0.169	0.831	0.00	0.00		2093089.19		2093089.19		
35	0.307	0.171	0.171	0.829	0.00	0.00		2032125.43		2032125.43		
36	0.298	0.173	0.173	0.827	0.00	0.00		1972937.31		1972937.31		
37	0.290	0.176	0.176	0.824	0.00	0.00		1915473.11		1915473.11		
38	0.281	0.178	0.178	0.822	0.00	0.00		1859682.64		1859682.64		
39	0.273	0.180	0.180	0.820	0.00	0.00		1805517.12		1805517.12		
40	0.265	0.182	0.182	0.818	0.00	0.00		1752929.24		1752929.24		
41	0.257	0.184	0.184	0.816	0.00	0.00		1701873.05		1701873.05		
42	0.250	0.186	0.186	0.814	0.00	0.00		1652303.93		1652303.93		
43	0.243	0.188	0.188	0.812	0.00	0.00		1604178.58		1604178.58		
44	0.236	0.190	0.190	0.810	0.00	0.00		1557454.93		1557454.93		
45	0.229	0.192	0.192	0.808	0.00	0.00		1512092.16		1512092.16		
46	0.222	0.194	0.194	0.806	0.00	0.00		1468050.65		1468050.65		
47	0.216	0.196	0.196	0.804	0.00	0.00		1425291.89		1425291.89		
48	0.209	0.198	0.198	0.802	0.00	0.00		1383778.53		1383778.53		
49	0.203	0.200	0.200	0.800	0.00	0.00		1343474.3		1343474.3		
50	0.197	0.206	0.206	0.794	0.00	0.00		1304343.98		1304343.98		
51	0.192	0.212	0.212	0.788	0.00	0.00		1266353.38		1266353.38		
52	0.186	0.218	0.218	0.782	0.00	0.00		1229469.3		1229469.3		
53	0.181	0.224	0.224	0.776	0.00	0.00		1193659.52		1193659.52		
54	0.175	0.230	0.230	0.770	0.00	0.00		1158892.74		1158892.74		
55	0.170	0.236	0.236	0.764	0.00	0.00		1125138.58		1125138.58		
56	0.165	0.242	0.242	0.758	0.00	0.00		1092367.55		1092367.55		
57	0.160	0.248	0.248	0.752	0.00	0.00		1060551.02		1060551.02		
58	0.156	0.254	0.254	0.746	0.00	0.00		1029661.19		1029661.19		
59	0.151	0.260	0.260	0.740	0.00	0.00		999671.054		999671.05		
60	0.147	0.266	0.266	0.734	0.00	0.00		970554.421		970554.42		
61	0.143	0.272	0.272	0.728	0.00	0.00		942285.846		942285.85		
62	0.138	0.278	0.278	0.722	0.00	0.00		914840.627		914840.63		
63	0.134	0.284	0.284	0.716	0.00	0.00		888194.784		888194.78		
64	0.130	0.290	0.290	0.710	0.00	0.00		862325.033		862325.03		
65	0.127	0.296	0.296	0.704	0.00	0.00		837208.769		837208.77		
66	0.123	0.302	0.302	0.698	0.00	0.00		812824.048		812824.05		
67	0.119	0.308	0.308	0.692	0.00	0.00		789149.561		789149.56		
68	0.116	0.314	0.314	0.686	0.00	0.00		766164.623		766164.62		
69	0.112	0.320	0.320	0.680	0.00	0.00		743849.148		743849.15		
70	0.109	0.326	0.326	0.674	0.00	0.00		722183.639		722183.64		
71	0.106	0.332	0.332	0.668	0.00	0.00		701149.164		701149.16		
72	0.103	0.338	0.338	0.662	0.00	0.00		680727.344		680727.34		
73	0.100	0.344	0.344	0.656	0.00	0.00		660900.334		660900.33		
74	0.097	0.350	0.350	0.650	0.00	0.00		641650.809		641650.81		
75	0.094	0.356	0.356	0.644	0.00	0.00		622961.951		622961.95		
76	0.092	0.362	0.362	0.638	0.00	0.00		604817.428		604817.43		
77	0.090	0.368	0.368	0.632	0.00	0.00		590065.783		590065.78		
78	0.087	0.374	0.374	0.626	0.00	0.00		57673.935		575673.94		
79	0.085	0.380	0.380	0.620	0.00	0.00		561633.107		561633.11		
80	0.083	0.386	0.386	0.614	0.00	0.00		547934.739		547934.74		
81	0.081	0.392	0.392	0.608	0.00	0.00		534570.477		534570.48		
82	0.079	0.398	0.398	0.602	0.00	0.00		521532.173		521532.17		
83	0.077	0.404	0.404	0.596	0.00	0.00		508811.876		508811.88		
84	0.075	0.410	0.410	0.590	0.00	0.00		496401.83		496401.83		
85	0.074	0.416	0.416	0.584	0.00	0.00		484294.468		484294.47		
86	0.072	0.422	0.422	0.578	0.00	0.00		472482.408		472482.41		
87	0.070	0.428	0.428	0.572	0.00	0.00		460958.447		460958.45		
88	0.068	0.434	0.434	0.566	0.00	0.00		449715.558		449715.56		
89	0.067	0.440	0.440	0.560	0.00	0.00		438746.886		438746.89		
90	0.065	0.446	0.446	0.554	0.00	0.00		428045.742		428045.74		
91	0.063	0.452	0.452	0.548	0.00	0.00		417605.602		417605.60		
92	0.062	0.458	0.458	0.542	0.00	0.00		40720.1		40720.1		
93	0.060	0.464	0.464	0.536	0.00	0.00		397483.024		397483.02		
94	0.059	0.470	0.470	0.530	0.00	0.00		387788.316		387788.32		
95	0.057	0.476	0.476	0.524	0.00	0.00						

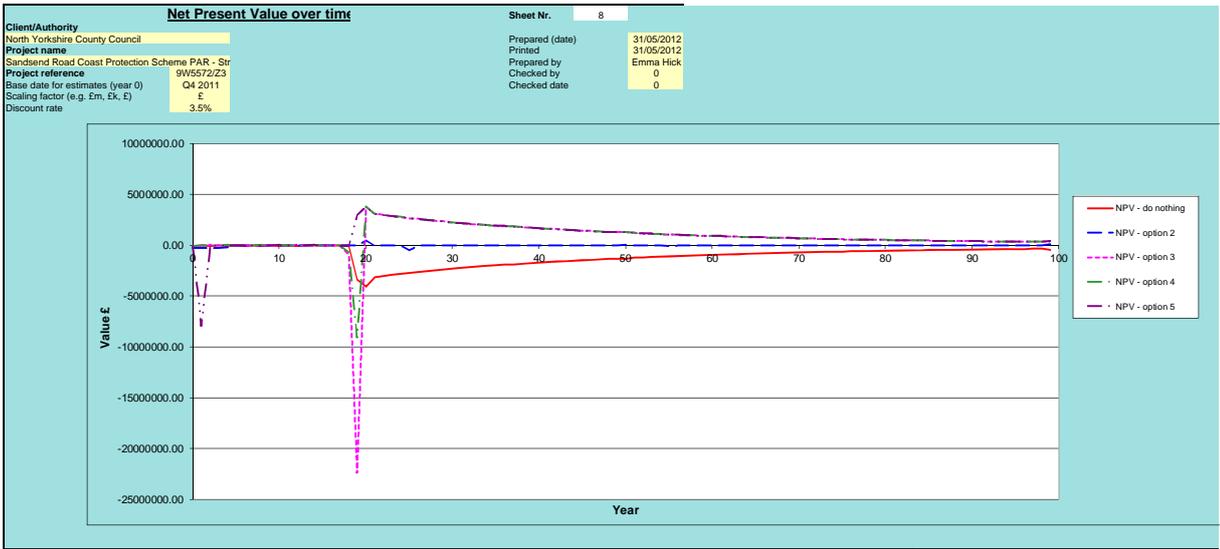
Damage Cost Calculation Sheet - Do Something (Linear)										Sheet Nr.	4			
Client/Authority											North Yorkshire County Council			
Project name											Sandsend Road Coast Protection Scheme PAR - S			
Project reference											9W5572/Z3			
Base date for estimates (year 0)											Q4 2011			
Scaling factor (e.g. Em, Ek, E)											£			
Initial discount rate											3.5%	3.0%	2.5%	
Year											0	0	49	99
Breach pb											0.100	0.100	0.100	0.100
PV Total Damage											£ 1,424,023	(calculated below)		
Prepared (date)											31/05/2012			
Printed											31/05/2012			
Prepared by											Emma Hick			
Checked by											0			
Checked date											0			
Year	Discount	Prob of a breach or failure	Prob that breach/failure: occurs in year	Prob that breach/failure: has not occurred	PV damage due to: breach or failure	Over-topping	Road Clearance	Traffic Disruption	Damages 3	PV total damage				
0	1.000	0.100	0.100	0.900	0.00	0.00	92188.474			92188.47				
1	0.966	0.100	0.100	0.900	0.00	0.00				0.00				
2	0.934	0.100	0.100	0.900	0.00	0.00	86058.9269			86058.93				
3	0.902	0.100	0.100	0.900	0.00	0.00				0.00				
4	0.871	0.100	0.100	0.900	0.00	0.00	80336.9292			80336.93				
5	0.842	0.100	0.100	0.900	0.00	0.00				0.00				
6	0.814	0.100	0.100	0.900	0.00	0.00	74995.383			74995.38				
7	0.786	0.100	0.100	0.900	0.00	0.00				0.00				
8	0.759	0.100	0.100	0.900	0.00	0.00	70008.9925			70008.99				
9	0.734	0.100	0.100	0.900	0.00	0.00				0.00				
10	0.709	0.100	0.100	0.900	0.00	0.00	65354.1436			65354.14				
11	0.685	0.100	0.100	0.900	0.00	0.00				0.00				
12	0.662	0.100	0.100	0.900	0.00	0.00	61008.7924			61008.79				
13	0.639	0.100	0.100	0.900	0.00	0.00				0.00				
14	0.618	0.100	0.100	0.900	0.00	0.00	56952.3605			56952.36				
15	0.597	0.100	0.100	0.900	0.00	0.00				0.00				
16	0.577	0.100	0.100	0.900	0.00	0.00	53165.638			53165.64				
17	0.557	0.100	0.100	0.900	0.00	0.00				0.00				
18	0.538	0.100	0.100	0.900	0.00	0.00	49630.6919			49630.69				
19	0.520	0.100	0.100	0.900	0.00	0.00		24448.9198		24448.92				
20	0.503	0.100	0.100	0.900	0.00	0.00		23622.1447		23622.14				
21	0.486	0.100	0.100	0.900	0.00	0.00		22823.3282		22823.33				
22	0.469	0.100	0.100	0.900	0.00	0.00		22051.5249		22051.52				
23	0.453	0.100	0.100	0.900	0.00	0.00		21305.8211		21305.82				
24	0.438	0.100	0.100	0.900	0.00	0.00		20585.3344		20585.33				
25	0.423	0.100	0.100	0.900	0.00	0.00		19889.212		19889.21				
26	0.409	0.100	0.100	0.900	0.00	0.00		19216.63		19216.63				
27	0.395	0.100	0.100	0.900	0.00	0.00		18566.7922		18566.79				
28	0.382	0.100	0.100	0.900	0.00	0.00		17938.9297		17938.93				
29	0.369	0.100	0.100	0.900	0.00	0.00		17332.2992		17332.30				
30	0.356	0.100	0.100	0.900	0.00	0.00		16746.1828		16746.18				
31	0.346	0.100	0.100	0.900	0.00	0.00		16258.4299		16258.43				
32	0.336	0.100	0.100	0.900	0.00	0.00		15784.8834		15784.88				
33	0.326	0.100	0.100	0.900	0.00	0.00		15325.1295		15325.13				
34	0.317	0.100	0.100	0.900	0.00	0.00		14878.7665		14878.77				
35	0.307	0.100	0.100	0.900	0.00	0.00		14445.4044		14445.40				
36	0.298	0.100	0.100	0.900	0.00	0.00		14024.6645		14024.66				
37	0.290	0.100	0.100	0.900	0.00	0.00		13616.1791		13616.18				
38	0.281	0.100	0.100	0.900	0.00	0.00		13219.5914		13219.59				
39	0.273	0.100	0.100	0.900	0.00	0.00		12834.5547		12834.55				
40	0.265	0.100	0.100	0.900	0.00	0.00		12460.7327		12460.73				
41	0.257	0.100	0.100	0.900	0.00	0.00		12097.7988		12097.80				
42	0.250	0.100	0.100	0.900	0.00	0.00		11745.4357		11745.44				
43	0.243	0.100	0.100	0.900	0.00	0.00		11403.3356		11403.34				
44	0.236	0.100	0.100	0.900	0.00	0.00		11071.1996		11071.20				
45	0.229	0.100	0.100	0.900	0.00	0.00		10748.7375		10748.74				
46	0.222	0.100	0.100	0.900	0.00	0.00		10435.6675		10435.67				
47	0.216	0.100	0.100	0.900	0.00	0.00		10131.716		10131.72				
48	0.209	0.100	0.100	0.900	0.00	0.00		9836.61749		9836.62				
49	0.203	0.100	0.100	0.900	0.00	0.00		9550.11407		9550.11				
50	0.197	0.100	0.100	0.900	0.00	0.00		9271.95541		9271.96				
51	0.192	0.100	0.100	0.900	0.00	0.00		9001.89845		9001.90				
52	0.186	0.100	0.100	0.900	0.00	0.00		8739.70723		8739.71				
53	0.181	0.100	0.100	0.900	0.00	0.00		8485.15266		8485.15				
54	0.175	0.100	0.100	0.900	0.00	0.00		8238.01229		8238.01				
55	0.170	0.100	0.100	0.900	0.00	0.00		7998.07018		7998.07				
56	0.165	0.100	0.100	0.900	0.00	0.00		7765.11668		7765.12				
57	0.160	0.100	0.100	0.900	0.00	0.00		7538.94823		7538.95				
58	0.156	0.100	0.100	0.900	0.00	0.00		7319.36722		7319.37				
59	0.151	0.100	0.100	0.900	0.00	0.00		7106.18176		7106.18				
60	0.147	0.100	0.100	0.900	0.00	0.00		6899.2056		6899.21				
61	0.143	0.100	0.100	0.900	0.00	0.00		6698.25786		6698.26				
62	0.138	0.100	0.100	0.900	0.00	0.00		6503.16297		6503.16				
63	0.134	0.100	0.100	0.900	0.00	0.00		6313.75046		6313.75				
64	0.130	0.100	0.100	0.900	0.00	0.00		6129.85481		6129.85				
65	0.127	0.100	0.100	0.900	0.00	0.00		5951.31535		5951.32				
66	0.123	0.100	0.100	0.900	0.00	0.00		5777.97607		5777.98				
67	0.119	0.100	0.100	0.900	0.00	0.00		5609.68551		5609.69				
68	0.116	0.100	0.100	0.900	0.00	0.00		5446.29661		5446.30				
69	0.112	0.100	0.100	0.900	0.00	0.00		5287.66661		5287.67				
70	0.109	0.100	0.100	0.900	0.00	0.00		5133.6569		5133.66				
71	0.106	0.100	0.100	0.900	0.00	0.00		4984.13291		4984.13				
72	0.103	0.100	0.100	0.900	0.00	0.00		4838.96399		4838.96				
73	0.100	0.100	0.100	0.900	0.00	0.00		4698.0233		4698.02				
74	0.097	0.100	0.100	0.900	0.00	0.00		4561.18767		4561.19				
75	0.094	0.100	0.100	0.900	0.00	0.00		4428.33754		4428.34				
76	0.092	0.100	0.100	0.900	0.00	0.00		4300.32931		4320.33				
77	0.090	0.100	0.100	0.900	0.00	0.00		4214.95542		4214.96				
78	0.087	0.100	0.100	0.900	0.00	0.00		4112.15163		4112.15				
79	0.085	0.100	0.100	0.900	0.00	0.00		4011.85525		4011.86				
80	0.083	0.100	0.100	0.900	0.00	0.00		3914.00512		3914.01				
81	0.081	0.100	0.100	0.900	0.00	0.00		3818.54158		3818.54				
82	0.079	0.100	0.100	0.900	0.00	0.00		3725.40642		3725.41				
83	0.077	0.100	0.100	0.900	0.00	0.00		3634.54285		3634.54				
84	0.075	0.100	0.100	0.900	0.00	0.00		3545.89546		3545.90				
85	0.074	0.100	0.100	0.900	0.00	0.00		3459.41021		3459.41				
86	0.072	0.100	0.100	0.900	0.00	0.00		3375.03435		3375.03				
87	0.070	0.100	0.100	0.900	0.00	0.00		3292.71644		3292.72				
88	0.068	0.100	0.100	0.900	0.00	0.00		3212.40628		3212.41				
89	0.067	0.100	0.100	0.900	0.00	0.00		3134.05491		3134.05				
90	0.065	0.100	0.100	0.900	0.00	0.00		3057.61455		3057.61				
91	0.063	0.100	0.100	0.900	0.00	0.00		2983.03858		2983.04				
92	0.062	0.100	0.100	0.900	0.00	0.00		2910.28154		2910.28				
93	0.060	0.100	0.100	0.900	0.00	0.00		2839.29907		2839.30				
94	0.059	0.100	0.100	0.900	0.00	0.00		2770.04787		2770.05				
95	0.057	0.100	0.100	0.900	0.00	0.00		2702.48573		2702.49				
96	0.056	0.100	0.100	0.900	0.00	0.00		2636.57144		2636.57				
97	0.055	0.100	0.100	0.900	0.00	0.00		2572.26482		2572.26				
98	0.053													

Damage Cost Calculation Sheet - Do Something (Linear)										Sheet Nr.	5		
Client/Authority											North Yorkshire County Council		
Project name											Sandsend Road Coast Protection Scheme PAR - S		
Project reference											9W5572/Z3		
Base date for estimates (year 0)											Q4 2011		
Scaling factor (e.g. Em, Ek, E)											£		
Initial discount rate											3.5%	3.0%	2.5%
Prepared (date)											31/05/2012		
Printed											31/05/2012		
Prepared by											Emma Hick		
Checked by											0		
Checked date											0		
PV breach/failure											£		
Ave Annual Damage (overtopping)											£	/yr	
PV Total Damage											£ 62,490,501	(calculated below)	
Year	Discount	Prob of a breach or failure	Prob that breach/failure: occurs in year	Prob that breach/failure: has not occurred	PV damage due to: breach or failure	Over-topping	Road Clearance	Other damages Traffic Disruption	Damages 3	PV total damage			
0	1.000	0.100	0.100	0.900	0.00	0.00	58572.78735			58572.79			
1	0.966	0.100	0.100	0.900	0.00	0.00				0.00			
2	0.934	0.100	0.100	0.900	0.00	0.00	54678.32374			54678.32			
3	0.902	0.100	0.100	0.900	0.00	0.00				0.00			
4	0.871	0.100	0.100	0.900	0.00	0.00	51042.80029			51042.80			
5	0.842	0.100	0.100	0.900	0.00	0.00				0.00			
6	0.814	0.100	0.100	0.900	0.00	0.00	47649.00025			47649.00			
7	0.786	0.100	0.100	0.900	0.00	0.00				0.00			
8	0.759	0.100	0.100	0.900	0.00	0.00	44480.85159			44480.85			
9	0.734	0.100	0.100	0.900	0.00	0.00				0.00			
10	0.709	0.100	0.100	0.900	0.00	0.00	41523.35092			41523.35			
11	0.685	0.100	0.100	0.900	0.00	0.00				0.00			
12	0.662	0.100	0.100	0.900	0.00	0.00	38762.4924			38762.49			
13	0.639	0.100	0.100	0.900	0.00	0.00				0.00			
14	0.618	0.100	0.100	0.900	0.00	0.00	36185.20143			36185.20			
15	0.597	0.100	0.100	0.900	0.00	0.00				0.00			
16	0.577	0.100	0.100	0.900	0.00	0.00	33779.27273			33779.27			
17	0.557	0.100	0.100	0.900	0.00	0.00				0.00			
18	0.538	0.100	0.100	0.900	0.00	0.00	31533.31255			31533.31			
19	0.520	0.100	0.100	0.900	0.00	0.00		2066001.13		2066001.13			
20	0.503	0.100	0.100	0.900	0.00	0.00		1996136.36		1996136.36			
21	0.486	0.100	0.100	0.900	0.00	0.00		1928634.16		1928634.16			
22	0.469	0.100	0.100	0.900	0.00	0.00		1863414.65		1863414.65			
23	0.453	0.100	0.100	0.900	0.00	0.00		1800400.63		1800400.63			
24	0.438	0.100	0.100	0.900	0.00	0.00		1739517.51		1739517.51			
25	0.423	0.100	0.100	0.900	0.00	0.00		1680693.25		1680693.25			
26	0.409	0.100	0.100	0.900	0.00	0.00		1623858.21		1623858.21			
27	0.395	0.100	0.100	0.900	0.00	0.00		1568945.13		1568945.13			
28	0.382	0.100	0.100	0.900	0.00	0.00		1515889.02		1515889.02			
29	0.369	0.100	0.100	0.900	0.00	0.00		1464627.07		1464627.07			
30	0.356	0.100	0.100	0.900	0.00	0.00		1415098.62		1415098.62			
31	0.346	0.100	0.100	0.900	0.00	0.00		1373882.15		1373882.15			
32	0.336	0.100	0.100	0.900	0.00	0.00		1333866.17		1333866.17			
33	0.326	0.100	0.100	0.900	0.00	0.00		1295015.7		1295015.70			
34	0.317	0.100	0.100	0.900	0.00	0.00		1257296.79		1257296.79			
35	0.307	0.100	0.100	0.900	0.00	0.00		1220676.5		1220676.50			
36	0.298	0.100	0.100	0.900	0.00	0.00		1185122.82		1185122.82			
37	0.290	0.100	0.100	0.900	0.00	0.00		1150604.67		1150604.67			
38	0.281	0.100	0.100	0.900	0.00	0.00		1117091.92		1117091.92			
39	0.273	0.100	0.100	0.900	0.00	0.00		1084555.26		1084555.26			
40	0.265	0.100	0.100	0.900	0.00	0.00		1052966.27		1052966.27			
41	0.257	0.100	0.100	0.900	0.00	0.00		1022297.35		1022297.35			
42	0.250	0.100	0.100	0.900	0.00	0.00		992521.7		992521.70			
43	0.243	0.100	0.100	0.900	0.00	0.00		963613.301		963613.30			
44	0.236	0.100	0.100	0.900	0.00	0.00		935546.894		935546.89			
45	0.229	0.100	0.100	0.900	0.00	0.00		908297.955		908297.96			
46	0.222	0.100	0.100	0.900	0.00	0.00		881842.675		881842.68			
47	0.216	0.100	0.100	0.900	0.00	0.00		856157.937		856157.94			
48	0.209	0.100	0.100	0.900	0.00	0.00		831221.298		831221.30			
49	0.203	0.100	0.100	0.900	0.00	0.00		807010.969		807010.97			
50	0.197	0.100	0.100	0.900	0.00	0.00		783505.795		783505.80			
51	0.192	0.100	0.100	0.900	0.00	0.00		760685.238		760685.24			
52	0.186	0.100	0.100	0.900	0.00	0.00		738529.357		738529.36			
53	0.181	0.100	0.100	0.900	0.00	0.00		717018.794		717018.79			
54	0.175	0.100	0.100	0.900	0.00	0.00		696134.751		696134.75			
55	0.170	0.100	0.100	0.900	0.00	0.00		675858.982		675858.98			
56	0.165	0.100	0.100	0.900	0.00	0.00		656173.768		656173.77			
57	0.160	0.100	0.100	0.900	0.00	0.00		637061.911		637061.91			
58	0.156	0.100	0.100	0.900	0.00	0.00		618506.71		618506.71			
59	0.151	0.100	0.100	0.900	0.00	0.00		600491.951		600491.95			
60	0.147	0.100	0.100	0.900	0.00	0.00		583001.894		583001.89			
61	0.143	0.100	0.100	0.900	0.00	0.00		566021.257		566021.26			
62	0.138	0.100	0.100	0.900	0.00	0.00		549535.201		549535.20			
63	0.134	0.100	0.100	0.900	0.00	0.00		533529.321		533529.32			
64	0.130	0.100	0.100	0.900	0.00	0.00		517989.632		517989.63			
65	0.127	0.100	0.100	0.900	0.00	0.00		502902.556		502902.56			
66	0.123	0.100	0.100	0.900	0.00	0.00		488254.908		488254.91			
67	0.119	0.100	0.100	0.900	0.00	0.00		474033.892		474033.89			
68	0.116	0.100	0.100	0.900	0.00	0.00		460227.079		460227.08			
69	0.112	0.100	0.100	0.900	0.00	0.00		446822.407		446822.41			
70	0.109	0.100	0.100	0.900	0.00	0.00		433808.162		433808.16			
71	0.106	0.100	0.100	0.900	0.00	0.00		421172.973		421172.97			
72	0.103	0.100	0.100	0.900	0.00	0.00		408905.799		408905.80			
73	0.100	0.100	0.100	0.900	0.00	0.00		396995.921		396995.92			
74	0.097	0.100	0.100	0.900	0.00	0.00		385432.933		385432.93			
75	0.094	0.100	0.100	0.900	0.00	0.00		374206.731		374206.73			
76	0.092	0.100	0.100	0.900	0.00	0.00		365079.738		365079.74			
77	0.090	0.100	0.100	0.900	0.00	0.00		356175.354		356175.35			
78	0.087	0.100	0.100	0.900	0.00	0.00		347488.15		347488.15			
79	0.085	0.100	0.100	0.900	0.00	0.00		339012.83		339012.83			
80	0.083	0.100	0.100	0.900	0.00	0.00		330744.224		330744.22			
81	0.081	0.100	0.100	0.900	0.00	0.00		322677.292		322677.29			
82	0.079	0.100	0.100	0.900	0.00	0.00		314807.114		314807.11			
83	0.077	0.100	0.100	0.900	0.00	0.00		307128.892		307128.89			
84	0.075	0.100	0.100	0.900	0.00	0.00		299637.943		299637.94			
85	0.074	0.100	0.100	0.900	0.00	0.00		292329.7		292329.70			
86	0.072	0.100	0.100	0.900	0.00	0.00		285199.708		285199.71			
87	0.070	0.100	0.100	0.900	0.00	0.00		278243.617		278243.62			
88	0.068	0.100	0.100	0.900	0.00	0.00		271457.188		271457.19			
89	0.067	0.100	0.100	0.900	0.00	0.00		264836.281		264836.28			
90	0.065	0.100	0.100	0.900	0.00	0.00		258376.859		258376.86			
91	0.063	0.100	0.100	0.900	0.00	0.00		252074.985		252074.98			
92	0.062	0.100	0.100	0.900	0.00	0.00		245926.814		245926.81			
93	0.060	0.100	0.100	0.900	0.00	0.00		239928.599		239928.60			
94	0.059	0.100	0.100	0.900	0.00	0.00		234076.682		234076.68			
95	0.057	0.100	0.100	0.900	0.00	0.00		228367.495		228367.49			
96	0.056	0.100	0.100	0.900	0.00	0.00		222797.556		222797.56			
97	0.055	0.100	0.100	0.900									

Damage Cost Calculation Sheet - Do Something (Linear)										Sheet Nr.	6		
Client/Authority											North Yorkshire County Council		
Project name											Sandsend Road Coast Protection Scheme PAR - S		
Project reference											9W5572/Z3		
Base date for estimates (year 0)											Q4 2011		
Scaling factor (e.g. Em, Ek, E)											£		
Initial discount rate											3.5%	3.0%	2.5%
Option:											Retain A174 on existing alignment		
Prepared (date)											31/05/2012		
Printed											31/05/2012		
Prepared by											Emma Hick		
Checked by											0		
Checked date											0		
PV breach/failure											£		
Ave Annual Damage (overtopping)											/yr		
PV Total Damage											£ 92,188 (calculated below)		
Year	Discount	Prob of a factor breach or failure	Prob that breach/failure: occurs in year	has not occurred	PV damage due to: breach or failure	over-topping	Road Clearance	Other damages Traffic Disruption	Damages 3	PV total damage			
0	1.000	0.100	0.100	0.900	0.00	0.00	92188.474			92188.47			
1	0.966	0.100	0.100	0.900	0.00	0.00				0.00			
2	0.934	0.100	0.100	0.900	0.00	0.00				0.00			
3	0.902	0.100	0.100	0.900	0.00	0.00				0.00			
4	0.871	0.100	0.100	0.900	0.00	0.00				0.00			
5	0.842	0.100	0.100	0.900	0.00	0.00				0.00			
6	0.814	0.100	0.100	0.900	0.00	0.00				0.00			
7	0.786	0.100	0.100	0.900	0.00	0.00				0.00			
8	0.759	0.100	0.100	0.900	0.00	0.00				0.00			
9	0.734	0.100	0.100	0.900	0.00	0.00				0.00			
10	0.709	0.100	0.100	0.900	0.00	0.00				0.00			
11	0.685	0.100	0.100	0.900	0.00	0.00				0.00			
12	0.662	0.100	0.100	0.900	0.00	0.00				0.00			
13	0.639	0.100	0.100	0.900	0.00	0.00				0.00			
14	0.618	0.100	0.100	0.900	0.00	0.00				0.00			
15	0.597	0.100	0.100	0.900	0.00	0.00				0.00			
16	0.577	0.100	0.100	0.900	0.00	0.00				0.00			
17	0.557	0.100	0.100	0.900	0.00	0.00				0.00			
18	0.538	0.100	0.100	0.900	0.00	0.00				0.00			
19	0.520	0.100	0.100	0.900	0.00	0.00				0.00			
20	0.503	0.100	0.100	0.900	0.00	0.00				0.00			
21	0.486	0.100	0.100	0.900	0.00	0.00				0.00			
22	0.469	0.100	0.100	0.900	0.00	0.00				0.00			
23	0.453	0.100	0.100	0.900	0.00	0.00				0.00			
24	0.438	0.100	0.100	0.900	0.00	0.00				0.00			
25	0.423	0.100	0.100	0.900	0.00	0.00				0.00			
26	0.409	0.100	0.100	0.900	0.00	0.00				0.00			
27	0.395	0.100	0.100	0.900	0.00	0.00				0.00			
28	0.382	0.100	0.100	0.900	0.00	0.00				0.00			
29	0.369	0.100	0.100	0.900	0.00	0.00				0.00			
30	0.356	0.100	0.100	0.900	0.00	0.00				0.00			
31	0.346	0.100	0.100	0.900	0.00	0.00				0.00			
32	0.336	0.100	0.100	0.900	0.00	0.00				0.00			
33	0.326	0.100	0.100	0.900	0.00	0.00				0.00			
34	0.317	0.100	0.100	0.900	0.00	0.00				0.00			
35	0.307	0.100	0.100	0.900	0.00	0.00				0.00			
36	0.298	0.100	0.100	0.900	0.00	0.00				0.00			
37	0.290	0.100	0.100	0.900	0.00	0.00				0.00			
38	0.281	0.100	0.100	0.900	0.00	0.00				0.00			
39	0.273	0.100	0.100	0.900	0.00	0.00				0.00			
40	0.265	0.100	0.100	0.900	0.00	0.00				0.00			
41	0.257	0.100	0.100	0.900	0.00	0.00				0.00			
42	0.250	0.100	0.100	0.900	0.00	0.00				0.00			
43	0.243	0.100	0.100	0.900	0.00	0.00				0.00			
44	0.236	0.100	0.100	0.900	0.00	0.00				0.00			
45	0.229	0.100	0.100	0.900	0.00	0.00				0.00			
46	0.222	0.100	0.100	0.900	0.00	0.00				0.00			
47	0.216	0.100	0.100	0.900	0.00	0.00				0.00			
48	0.209	0.100	0.100	0.900	0.00	0.00				0.00			
49	0.203	0.100	0.100	0.900	0.00	0.00				0.00			
50	0.197	0.100	0.100	0.900	0.00	0.00				0.00			
51	0.192	0.100	0.100	0.900	0.00	0.00				0.00			
52	0.186	0.100	0.100	0.900	0.00	0.00				0.00			
53	0.181	0.100	0.100	0.900	0.00	0.00				0.00			
54	0.175	0.100	0.100	0.900	0.00	0.00				0.00			
55	0.170	0.100	0.100	0.900	0.00	0.00				0.00			
56	0.165	0.100	0.100	0.900	0.00	0.00				0.00			
57	0.160	0.100	0.100	0.900	0.00	0.00				0.00			
58	0.156	0.100	0.100	0.900	0.00	0.00				0.00			
59	0.151	0.100	0.100	0.900	0.00	0.00				0.00			
60	0.147	0.100	0.100	0.900	0.00	0.00				0.00			
61	0.143	0.100	0.100	0.900	0.00	0.00				0.00			
62	0.138	0.100	0.100	0.900	0.00	0.00				0.00			
63	0.134	0.100	0.100	0.900	0.00	0.00				0.00			
64	0.130	0.100	0.100	0.900	0.00	0.00				0.00			
65	0.127	0.100	0.100	0.900	0.00	0.00				0.00			
66	0.123	0.100	0.100	0.900	0.00	0.00				0.00			
67	0.119	0.100	0.100	0.900	0.00	0.00				0.00			
68	0.116	0.100	0.100	0.900	0.00	0.00				0.00			
69	0.112	0.100	0.100	0.900	0.00	0.00				0.00			
70	0.109	0.100	0.100	0.900	0.00	0.00				0.00			
71	0.106	0.100	0.100	0.900	0.00	0.00				0.00			
72	0.103	0.100	0.100	0.900	0.00	0.00				0.00			
73	0.100	0.100	0.100	0.900	0.00	0.00				0.00			
74	0.097	0.100	0.100	0.900	0.00	0.00				0.00			
75	0.094	0.100	0.100	0.900	0.00	0.00				0.00			
76	0.092	0.100	0.100	0.900	0.00	0.00				0.00			
77	0.090	0.100	0.100	0.900	0.00	0.00				0.00			
78	0.087	0.100	0.100	0.900	0.00	0.00				0.00			
79	0.085	0.100	0.100	0.900	0.00	0.00				0.00			
80	0.083	0.100	0.100	0.900	0.00	0.00				0.00			
81	0.081	0.100	0.100	0.900	0.00	0.00				0.00			
82	0.079	0.100	0.100	0.900	0.00	0.00				0.00			
83	0.077	0.100	0.100	0.900	0.00	0.00				0.00			
84	0.075	0.100	0.100	0.900	0.00	0.00				0.00			
85	0.074	0.100	0.100	0.900	0.00	0.00				0.00			
86	0.072	0.100	0.100	0.900	0.00	0.00				0.00			
87	0.070	0.100	0.100	0.900	0.00	0.00				0.00			
88	0.068	0.100	0.100	0.900	0.00	0.00				0.00			
89	0.067	0.100	0.100	0.900	0.00	0.00				0.00			
90	0.065	0.100	0.100	0.900	0.00	0.00				0.00			
91	0.063	0.100	0.100	0.900	0.00	0.00				0.00			
92	0.062	0.100	0.100	0.900	0.00	0.00				0.00			
93	0.060	0.100	0.100	0.900	0.00	0.00				0.00			
94	0.059	0.100	0.100	0.900	0.00	0.00				0.00			
95	0.057	0.100	0.100	0.900	0.00	0.00				0.00			
96	0.056	0.100	0.100	0.900	0.00	0.00				0.00			
97	0.055	0.100	0.100	0.900	0.00	0.00				0.00			
98	0.053	0.100	0.100	0.900	0.00	0.00				0.00			
99	0.052	0.100	0.100	0.900	0.00	0.00				0.00			
Total					0.00	0.00				92188.47			

Present Value Costs for all options

Client/Authority		Results £																				Prepared (date)									
North Yorkshire County Council		Option 1					Option 2					Option 3					Option 4					Option 5					00/01/1900				
Project name		Do-nothing					Do Minimum					Realign A174					Upgrade Minor Roads					Retain A174 on current alignment					00/01/1900				
Sandsend Road Coast Protection Scheme PA		0					1,546,929					27,050,547					13,480,441					8,724,405					0				
Project reference		TOTALS: PV					TOTALS: PV					TOTALS: PV					TOTALS: PV					TOTALS: PV					0				
Base date for estimates (year 0)		Capital					Capital					Capital					Capital					Capital					0				
Scaling factor (e.g. Em, Ek, E)		Maint.					Maint.					Maint.					Maint.					Maint.					0				
Initial discount rate		Other					Other					Other					Other					Other					0				
		Negative costs					Negative costs					Negative costs					Negative costs					Negative costs					0				
year	Discount Factor	Cash	Capital	Maint.	Other	Cash	Capital	Maint.	Other	Cash	Capital	Maint.	Other	Cash	Capital	Maint.	Other	Cash	Capital	Maint.	Other	Cash	Capital	Maint.	Other	Cash	Capital	Maint.	Other		
0	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2542755.00	0.00	1501337.54	45591.83	0.00	51079907	1346340	177630	0	52603877.00	26599360.90	405593.98	45591.83	0.00	25007281	1346340	177630	0	26531251.00	13029254.77	405593.98	45591.83
1	0.966	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	254718.00	0.00	0.00	10717				10717.00	0.00	10717.00	0.00	0.00					10717.00	0.00	10717.00	0.00
2	0.934	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	246104.35	0.00	0.00	10717				10717.00	0.00	10354.59	0.00	0.00					10717.00	0.00	10354.59	0.00
3	0.902	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	237781.98	0.00	0.00	10717				10717.00	0.00	10004.43	0.00	0.00					10717.00	0.00	10004.43	0.00
4	0.871	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	229741.04	0.00	0.00	10717				10717.00	0.00	9666.12	0.00	0.00					10717.00	0.00	9666.12	0.00
5	0.842	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	221972.02	0.00	0.00	10717				10717.00	0.00	9339.25	0.00	0.00					10717.00	0.00	9339.25	0.00
6	0.814	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	214203.00	0.00	0.00	10717				10717.00	0.00	9023.43	0.00	0.00					10717.00	0.00	9023.43	0.00
7	0.786	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	206433.98	0.00	0.00	10717				10717.00	0.00	8718.29	0.00	0.00					10717.00	0.00	8718.29	0.00
8	0.759	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	198664.96	0.00	0.00	10717				10717.00	0.00	8423.47	0.00	0.00					10717.00	0.00	8423.47	0.00
9	0.734	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	190895.94	0.00	0.00	10717				10717.00	0.00	8138.61	0.00	0.00					10717.00	0.00	8138.61	0.00
10	0.709	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	183126.92	0.00	0.00	10717				10717.00	0.00	7863.39	0.00	0.00					10717.00	0.00	7863.39	13033.26
11	0.685	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	175357.90	0.00	0.00	10717				10717.00	0.00	7597.48	0.00	0.00					10717.00	0.00	7597.48	0.00
12	0.662	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	167588.88	0.00	0.00	10717				10717.00	0.00	7340.56	0.00	0.00					10717.00	0.00	7340.56	0.00
13	0.639	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	159819.86	0.00	0.00	10717				10717.00	0.00	7092.33	0.00	0.00					10717.00	0.00	7092.33	0.00
14	0.618	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	152050.84	0.00	0.00	10717				10717.00	0.00	6854.49	0.00	0.00					10717.00	0.00	6854.49	0.00
15	0.597	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	144281.82	0.00	0.00	10717				10717.00	0.00	6620.77	0.00	0.00					10717.00	0.00	6620.77	0.00
16	0.577	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	136512.80	0.00	0.00	10717				10717.00	0.00	6396.88	0.00	0.00					10717.00	0.00	6396.88	0.00
17	0.557	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	128743.78	0.00	0.00	10717				10717.00	0.00	6180.56	0.00	0.00					10717.00	0.00	6180.56	0.00
18	0.538	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	121034.76	0.00	0.00	10717				10717.00	0.00	5971.55	0.00	0.00					10717.00	0.00	5971.55	0.00
19	0.520	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	113325.74	0.00	0.00	10717				10717.00	0.00	5769.62	0.00	0.00					10717.00	0.00	5769.62	0.00
20	0.503	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	105616.72	0.00	0.00	10717				10717.00	0.00	5574.51	9239.53	0.00	23822182	17763			23850662.00	12391243.52	5574.51	9239.53
21	0.486	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	97907.70	0.00	0.00	16400				16400.00	0.00	5390.24	0.00	0.00					16400.00	0.00	5390.24	0.00
22	0.469	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	90218.68	0.00	0.00	16400				16400.00	0.00	5174.99	0.00	0.00					16400.00	0.00	5174.99	0.00
23	0.453	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	82529.66	0.00	0.00	16400				16400.00	0.00	4969.74	0.00	0.00					16400.00	0.00	4969.74	0.00
24	0.438	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	74840.64	0.00	0.00	16400				16400.00	0.00	4764.49	0.00	0.00					16400.00	0.00	4764.49	0.00
25	0.423	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	67151.62	0.00	0.00	16400				16400.00	0.00	4559.24	0.00	0.00					16400.00	0.00	4559.24	0.00
26	0.409	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	59462.60	0.00	0.00	16400				16400.00	0.00	4354.00	0.00	0.00					16400.00	0.00	4354.00	0.00
27	0.395	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	51772.58	0.00	0.00	16400				16400.00	0.00	4148.75	0.00	0.00					16400.00	0.00	4148.75	0.00
28	0.382	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	44082.56	0.00	0.00	16400				16400.00	0.00	3943.50	0.00	0.00					16400.00	0.00	3943.50	0.00
29	0.369	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	36392.54	0.00	0.00	16400				16400.00	0.00	3738.52	0.00	0.00					16400.00	0.00	3738.52	0.00
30	0.356	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	28702.52	0.00	0.00	16400				16400.00	0.00	3533.26	0.00	0.00					16400.00	0.00	3533.26	0.00
31	0.345	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	21012.50	0.00	0.00	16400				16400.00	0.00	3328.01	0.00	0.00					16400.00	0.00	3328.01	0.00
32	0.336	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	13322.48	0.00	0.00	16400				16400.00	0.00	3122.76	0.00	0.00					16400.00	0.00	3122.76	0.00
33	0.326	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	5632.46	0.00	0.00	16400				16400.00	0.00	2917.51	0.00	0.00					16400.00	0.00	2917.51	0.00
34	0.317	0.00	0.00	0.00	0.00	254,718.00	0.00	0.00	0.00	254718.00	0.00	0.00	0.00</																		



Year	Do nothing	Option 2	Option 3	Option 4	Option 5	Value £
0	0	0	0	0	0	0
1	0	-61072.79	61072.79	61072.79	61072.79	61072.79
2	0	-54678.32	54678.32	54678.32	54678.32	54678.32
3	0	-50142.80	50142.80	50142.80	50142.80	50142.80
4	0	-44480.85	44480.85	44480.85	44480.85	44480.85
5	0	-41523.35	41523.35	41523.35	41523.35	41523.35
6	0	-38762.49	38762.49	38762.49	38762.49	38762.49
7	0	-36185.20	36185.20	36185.20	36185.20	36185.20
8	0	-33779.27	33779.27	33779.27	33779.27	33779.27
9	0	-31533.31	31533.31	31533.31	31533.31	31533.31
10	0	-29995.41	29995.41	29995.41	29995.41	29995.41
11	0	-28152.14	28152.14	28152.14	28152.14	28152.14
12	0	-26446.51	26446.51	26446.51	26446.51	26446.51
13	0	-24826.00	24826.00	24826.00	24826.00	24826.00
14	0	-23289.25	23289.25	23289.25	23289.25	23289.25
15	0	-21835.82	21835.82	21835.82	21835.82	21835.82
16	0	-20456.26	20456.26	20456.26	20456.26	20456.26
17	0	-19150.16	19150.16	19150.16	19150.16	19150.16
18	0	-17916.11	17916.11	17916.11	17916.11	17916.11
19	0	-16742.72	16742.72	16742.72	16742.72	16742.72
20	0	-15628.61	15628.61	15628.61	15628.61	15628.61
21	0	-14572.41	14572.41	14572.41	14572.41	14572.41
22	0	-13572.84	13572.84	13572.84	13572.84	13572.84
23	0	-12628.55	12628.55	12628.55	12628.55	12628.55
24	0	-11738.18	11738.18	11738.18	11738.18	11738.18
25	0	-10891.48	10891.48	10891.48	10891.48	10891.48
26	0	-10087.21	10087.21	10087.21	10087.21	10087.21
27	0	-9324.24	9324.24	9324.24	9324.24	9324.24
28	0	-8601.44	8601.44	8601.44	8601.44	8601.44
29	0	-7917.78	7917.78	7917.78	7917.78	7917.78
30	0	-7272.22	7272.22	7272.22	7272.22	7272.22
31	0	-6663.82	6663.82	6663.82	6663.82	6663.82
32	0	-6081.65	6081.65	6081.65	6081.65	6081.65
33	0	-5525.68	5525.68	5525.68	5525.68	5525.68
34	0	-5004.88	5004.88	5004.88	5004.88	5004.88
35	0	-4518.22	4518.22	4518.22	4518.22	4518.22
36	0	-4065.68	4065.68	4065.68	4065.68	4065.68
37	0	-3647.25	3647.25	3647.25	3647.25	3647.25
38	0	-3262.92	3262.92	3262.92	3262.92	3262.92
39	0	-2912.58	2912.58	2912.58	2912.58	2912.58
40	0	-2595.23	2595.23	2595.23	2595.23	2595.23
41	0	-2310.86	2310.86	2310.86	2310.86	2310.86
42	0	-2059.46	2059.46	2059.46	2059.46	2059.46
43	0	-1840.02	1840.02	1840.02	1840.02	1840.02
44	0	-1651.54	1651.54	1651.54	1651.54	1651.54
45	0	-1493.02	1493.02	1493.02	1493.02	1493.02
46	0	-1363.46	1363.46	1363.46	1363.46	1363.46
47	0	-1261.85	1261.85	1261.85	1261.85	1261.85
48	0	-1187.19	1187.19	1187.19	1187.19	1187.19
49	0	-1138.48	1138.48	1138.48	1138.48	1138.48
50	0	-1104.72	1104.72	1104.72	1104.72	1104.72
51	0	-1083.91	1083.91	1083.91	1083.91	1083.91
52	0	-1074.15	1074.15	1074.15	1074.15	1074.15
53	0	-1074.54	1074.54	1074.54	1074.54	1074.54
54	0	-1084.08	1084.08	1084.08	1084.08	1084.08
55	0	-1099.87	1099.87	1099.87	1099.87	1099.87
56	0	-1121.91	1121.91	1121.91	1121.91	1121.91
57	0	-1150.20	1150.20	1150.20	1150.20	1150.20
58	0	-1184.84	1184.84	1184.84	1184.84	1184.84
59	0	-1225.92	1225.92	1225.92	1225.92	1225.92
60	0	-1273.54	1273.54	1273.54	1273.54	1273.54
61	0	-1327.80	1327.80	1327.80	1327.80	1327.80
62	0	-1388.73	1388.73	1388.73	1388.73	1388.73
63	0	-1456.36	1456.36	1456.36	1456.36	1456.36
64	0	-1530.73	1530.73	1530.73	1530.73	1530.73
65	0	-1611.90	1611.90	1611.90	1611.90	1611.90
66	0	-1700.02	1700.02	1700.02	1700.02	1700.02
67	0	-1795.25	1795.25	1795.25	1795.25	1795.25
68	0	-1897.75	1897.75	1897.75	1897.75	1897.75
69	0	-2007.68	2007.68	2007.68	2007.68	2007.68
70	0	-2125.11	2125.11	2125.11	2125.11	2125.11
71	0	-2250.11	2250.11	2250.11	2250.11	2250.11
72	0	-2382.76	2382.76	2382.76	2382.76	2382.76
73	0	-2523.14	2523.14	2523.14	2523.14	2523.14
74	0	-2671.34	2671.34	2671.34	2671.34	2671.34
75	0	-2827.45	2827.45	2827.45	2827.45	2827.45
76	0	-2991.56	2991.56	2991.56	2991.56	2991.56
77	0	-3163.76	3163.76	3163.76	3163.76	3163.76
78	0	-3344.14	3344.14	3344.14	3344.14	3344.14
79	0	-3532.70	3532.70	3532.70	3532.70	3532.70
80	0	-3729.43	3729.43	3729.43	3729.43	3729.43
81	0	-3934.33	3934.33	3934.33	3934.33	3934.33
82	0	-4147.40	4147.40	4147.40	4147.40	4147.40
83	0	-4368.64	4368.64	4368.64	4368.64	4368.64
84	0	-4598.05	4598.05	4598.05	4598.05	4598.05
85	0	-4835.62	4835.62	4835.62	4835.62	4835.62
86	0	-5081.35	5081.35	5081.35	5081.35	5081.35
87	0	-5335.24	5335.24	5335.24	5335.24	5335.24
88	0	-5597.29	5597.29	5597.29	5597.29	5597.29
89	0	-5867.51	5867.51	5867.51	5867.51	5867.51
90	0	-6145.90	6145.90	6145.90	6145.90	6145.90
91	0	-6432.47	6432.47	6432.47	6432.47	6432.47
92	0	-6727.22	6727.22	6727.22	6727.22	6727.22
93	0	-7030.15	7030.15	7030.15	7030.15	7030.15
94	0	-7341.26	7341.26	7341.26	7341.26	7341.26
95	0	-7660.55	7660.55	7660.55	7660.55	7660.55
96	0	-7988.02	7988.02	7988.02	7988.02	7988.02
97	0	-8323.67	8323.67	8323.67	8323.67	8323.67
98	0	-8667.50	8667.50	8667.50	8667.50	8667.50
99	0	-9019.51	9019.51	9019.51	9019.51	9019.51