

Bacton, Walcott and Ostend Coastal Management Study

July 2014

North Norfolk District Council



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S. Hampshire

V. Tonks

P. Phipps

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1 Introduction

1.1 Background

The Bacton, Walcott and Ostend coastline forms part of the '*Kelling to Lowestoft Ness Shoreline Management Plan*' (2005). North Norfolk District Council (NNDC) previously appointed Mott MacDonald to complete a Cromer to Winterton Ness Coastal Management Strategy Study (2013) to validate and potentially refine the current SMP6 management policies within the SMP. The Study provided recommendations for Schemes to be taken forward under the SMP policies to Project Appraisal Report (PAR) stage including the frontage at Bacton, Walcott and Ostend.

Following completion of the Cromer to Winterton Ness Coastal Management Strategy Study, NNDC appointed Mott MacDonald to undertake a further more detailed investigation into the economic case for coastal protection Scheme(s) specifically at Bacton, Walcott and Ostend (Figure 1.1). See section 1.2 for the scope of the investigation.

Figure 1.1: Existing defences along the frontage at Bacton, Walcott and Ostend (Management Units 35-42) from the Strategy Study, (2013). NB the black lines indicate the extent of the assessments for Bacton and also for Walcott and Ostend. For the purposes of this study no defences have been considered for the central section between MU39-40 as there are no immediate assets at risk.

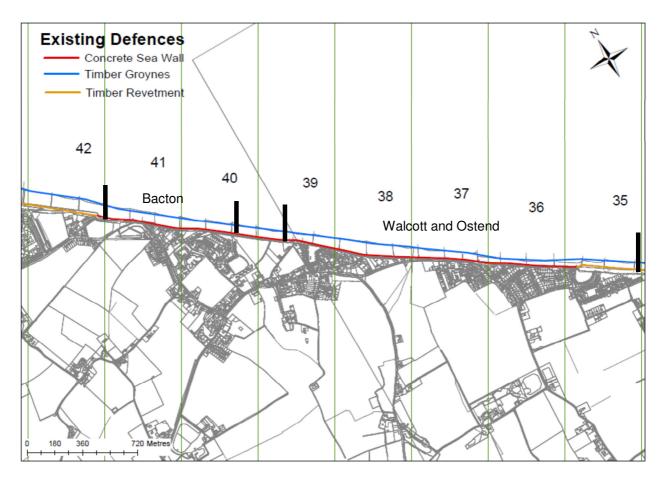




Figure 1.2 Current defences along the frontage include timber revetment, seawall and timber groynes





The SMP policies for Bacton, Walcott and Ostend over the next 100 years are outlined below in Table 1.1. The SMP6 epochs cover from 2005-2025, 2025-2055 and 2055-2105. For the purposes of this Study works will be considered over a period of 20 years from the current day to allow time for adaptation measures to be put in place for the medium term to long term.

Table 1.1: SMP6 policies for each of the three epochs at Bacton Walcott and Ostend

Short term (0-20 years)	Medium term (21-50 years)	Long term (51-100 years)
'Hold the Line'	'Managed Realignment'	'Managed Realignment'

In this area of Bacton, Walcott and Ostend, the locations of the properties are widely distributed across the 4km of frontage. The previous Study (2013) found it was not economically justifiable to implement 'Hold the Line' defences along the entire frontage for 100 years. However there may be a case for considering several Schemes along individual sections of the frontage or providing an integrated Scheme across the frontage where capital works are focussed on protecting the villages. Also it may be feasible to consider a Scheme for 0-20 years only.

This report aims to investigate the potential for Scheme(s) to be taken forward to Project Appraisal Report (PAR) stage at Bacton, Walcott and Ostend. The report aims to include further specific details on the economic costs and benefits and feasibility of options, in addition to the information considered during the previous Study. It considers both capital works options to implement 'Hold the Line' policies in the short term (0-20 years) but also considers these short term options in conjunction with longer term adaptation options (overall 0-100 years) to implement both the 'Hold the Line' and 'Managed Realignment' policies. It should be noted that this assessment provides more detail on the options for consideration than the Strategy stage with focus on Bacton, Walcott and Ostend, but specific details and combinations of different defences should be considered at the PAR stage.

1.2 Structure of report

This report has been divided into several different sections:

• **Optioneering** – undertakes a review of the options proposed at the Strategy stage for Bacton, Walcott and Ostend to "Hold the Line". The options have been examined in more detail for each of the "Hold the Line" frontages to ascertain real potential short term (20 year) Scheme(s).



- Adaptation options outlines the potential for adaptation options for "Managed Realignment"
 e.g. roll-back of properties (demolition/renting of existing properties until erosion is imminent and building elsewhere) in the longer term (20-100 years).
- **Economic analysis** presents the results of the assessment of the associated costs of both short term 'Hold the Line' options, in addition to the longer term adaptation "Managed Realignment' 'options, in relation to the benefits. Partnership Funding outcomes for relevant options are also presented.
- Combined Scheme with Bacton Gas Terminal- the potential for combining a Scheme at Bacton,
 Walcott and Ostend with Bacton Gas Terminal is discussed.
- Conclusions- outlines the potential range of solution(s) for the frontage from Bacton to Ostend. It
 also outlines some key limitations of the study which may need further consideration if any
 Scheme(s) are progressed to PAR stage.



2 Optioneering

2.1 Initial options

During the development of the Cromer to Winterton Ness Coastal Management Strategy Study (2013) several different options were proposed for Bacton, Walcott and Ostend to 'Hold the Line' for the 0-20 year epoch and 'Managed Realignment' for the 20-100 year epoch. At this high level these options were applied along the entire frontage of Bacton, Walcott and Ostend. These options are outlined in the table below.

Table 2.1 Strategy capital works options previously proposed for Bacton, Walcott and Ostend

Strategy options	Details	Outcome from Strategy
Option 2: Rock placement	Rock placement along 4km of the frontage. Assumed rock placement with a 1:2 slope with 3m height by 6m length in year 0 and then maintenance every 10 years. It was assumed that under a 'Managed Realignment' policy that these rocks could either be rolled back with the erosion or moved to other areas along the coast for protection. However the costs of this were not included.	This was concluded to not be feasible for the entire stretch of the defences and in the short term as it was too expensive. It could potentially be used for small sections or hotspots.
Option 3: Heavy maintenance of timber	It was assumed that 4,350m of groyne length (23 timber groynes) would be maintained every 10 years until year 20. Then following this then the maintenance was reduced = 80% in year 30, 60% in year 40, 40% in year 50 etc.	Potentially feasible.
revetment and groynes and seawall	This was to ensure that even once the 'Managed Realignment' policy is implemented the groynes were maintained so not to pose a threat to public safety. Realistically they could be removed in the long term but no costs were included.	
	The timber revetment only exists in two units (MU35 and MU41) hence only 1km of frontage. The seawall was proposed to be repointed and reclad with concrete for 3km of the frontage. Maintenance for both the timber revetment and seawall was proposed to be managed in a similar way to the groynes, reducing maintenance over time. Eventually under a 'Managed Realignment' policy the revetment, groynes and seawall would fail and would require removal from the frontage for health and safety reasons (this was not costed as part of the works).	
Option 4: Rock groynes	It was assumed that 8 rock groynes would be built over 1km. These groynes would trap sediment from longshore drift and therefore provide increased protection to the seawall and timber revetment.	This option was discounted due to the poor benefit cost scores it produced.
	It was assumed that the rock groyne maintenance was the same as rock placement maintenance.	Also this is not a short term measure due to cost and it would not work over a short frontage as the groynes work best in fields.

These original Strategy options were re-evaluated and additional options have been considered as outlined in the table overleaf. Each of these options have been assessed by Mott MacDonald and either considered to be feasible for taking forward or not feasible and rejected.



Table 2.2 Long list of capital works options for 0-20 years ('Hold the Line')

Option	Discussion
Do Nothing	Baseline option
Emergency works	Reactive approach – would need to apply for emergency funding for works if a breach in defences was to occur. Could be feasible for a 20 year period.
Timber revetment, groyne and seawall maintenance	Likely to be feasible- sweat the existing assets for 20 years.
Seawall encasement (promenade top)	Could be feasible- consider further along the seawall sections.
Gabions (steel baskets with suitable sized rock to break up wave conditions).	Could be feasible- capital works
Rock placement in front of seawalls/existing structures	Likely to be costly just for 20 years- but consider for comparison with other options. Unlikely to be feasible along the entire frontage.
Recharge	Could be feasible as part of sand engine approach with the broader coastal system.

The options taken forward (Table 2.3) represent a range of options that may be feasible along the frontage from Bacton to Ostend. A typical capital works option has been included at this stage for comparison with the emergency works and maintenance options; results showed that typical capital works options for 0-20 years e.g gabions and encasement of the existing sea wall were all of a similar cost magnitude and the specifics of these could be considered at PAR stage.

In addition a 5th option was added to consider a more extensive Scheme – including rock placement or recharge. In this case – rock or beach material could be used elsewhere or materials moved back during the 'Managed Realignment' phase as adaptation occurs. This allows a comparison with the short-term, more typical works for 20 years. Costs of the options are presented in Appendix A.

Table 2.3 Short listed options to be taken forward

	Option	
1	Do-nothing (baseline)	
2	Do-nothing until failure event and emergency works	
3	Capital Maintenance and patch repair- (i.e Timber revetment and groyne and seawall maintenance)	
4	Capital Works – Typical Scheme (i.e seawall encasement, recharge or gabions)	
5	Capital Works- Extensive Scheme (i.e rock placement)	

In addition to these short term options, it is also necessary to consider the adaptation options for implementing the 'Managed Realignment' policy. This is investigated further in Chapter 3.



3 Adaptation options

3.1 Adaptation approach

Adaptation can be defined as 'the process for managing the impacts of coastal change on communities and individuals, in advance of erosion and or realignment, with the aim of reducing the risk and mitigating the adverse effects' (RPA, 2008). Consideration of adaptation is becoming more important in considering the long term management of the coastline with climate change (e.g Climate Change Adaptation Sub-Committee Progress Report, 2013). However there have been no Schemes that have actually considered how adaptation measures could be feasibly implemented, how much they might cost and how they compare and contrast to implementing capital works. Also adaptation options have not, at present, been funded through EA Partnership funding or other mechanisms.

There is a real opportunity now at Bacton, Walcott and Ostend to explore potential adaptation measures alongside capital works options to fulfil both the short term 'Hold the Line' policy and the longer term 'Managed Realignment' policies. NNDC budgets are increasingly under pressure and the SMP expresses the need to allow more natural coastal processes to occur, whilst also protecting their local communities. A hybrid option combining both capital works and adaptive measures could be a feasible option.

3.2 Previous adaptation studies

A study was carried out in 2008 by RPA (Risk & Policy Analysts Limited) which aimed to collate data for supporting a Strategy for the long term management of the North Norfolk coastline. Specifically there was focus on filling the gaps in information and knowledge regarding adaptation options and their feasibility following the Coastal Pathfinder Study. The report considered options which involved adaptation of communities.

The RPA (2008) report outlined three main approaches to adaptation:

- 1. Rebuilding key assets/infrastructure as they are eroded. This should help maintain access to key assets such as the beach to reduce local economic impacts.
- 2. Relocate or roll back properties.
- 3. Assist property owners, businesses and communities with adaptation.

This Study will focus on approaches 2 and 3 which consider residential properties as these are easiest to value and make up the majority of the benefits (and partnership funding score) of a coastal protection Scheme.

3.3 Adaptation options

In considering both the relocation/roll back of properties and assisting property owners, businesses and communities with adaptation, the study carried out by RPA (2008) identified a long list of potential adaptation options for the North Norfolk coast. These are outlined in Table 3.1. Each of these options has been considered individually in terms of potential for implementation specifically at Bacton, Walcott and Ostend, but all would require funding to be identified and secured.



Table 3.1: Table of options and description (extracted from RPA, 2008)

Options	Descriptions	Suitability for Bacton, Walcott and Ostend
Outright purchase and demolish properties	Property is bought at market value	Potential.
Underwriting values of properties	Liability is accepted for the property in the future. The owner receives guarantee that the property will be bought for a set amount when the erosion is imminent	Potential but unsure how NNDC guarantee the amount later.
Buy and lease properties	The property is purchase and rented out for continued occupation until the property is in imminent danger of erosion	Potential –properties could feasibly be rented for short periods.
Use the property for a time restricted use	Appropriate land uses would be permitted to take over the property and continue to use it until erosion of the property is imminent	Potential.
Land purchase by Local Authorities	Council purchase land to provide a free location for those displaced by erosion to develop new properties	Land behind is agricultural so there is 'space' to realign the villages. However this would be dependent on whether landholders would be willing to sell their land and the price of the land.
Low interest loans to buy new property/land	The property is not bought, instead the opportunity is given for the property owner to take a low interest loan. This is offered to those whose house is to be eroded to help purchase another property or land on which to construct another property	Potential but questions about who would underwrite the loan. Would the lender ever get the investment back?
Government Payback Scheme	An estimate is made of the saving by Government in terms of the coastal defences cost for urban areas downcast that are protected by the material coming from the areas that are eroded. This estimate is used as the basis for pay properties owners for the loss of their land	Potential – could utilise results of the SCAPE model (from the Strategy Study) to help inform potential increased sediment downdrift.
Coastal Adaptation Fund	A fund is established to make payments to those who are suffering due to changes in coastal policies. Payments would help to cover a range of need including new mortgages and cost of removal of building at risk and could be extended to provide further financial assistance where funds are available	Potential – but key questions – where does the funding come from? Who would qualify as 'suffering due to changes in coastal policies'?
Subsidised maintenance	Council pays for/contributes to the cost of maintaining at risk properties to ensure they remain in keeping with the surrounding village/living standards	Potential – however this is likely to be in combination with some of the other options rather than implemented on its own.
Physically move the property	When the property is jacked up and moved, or disassembled and reassembled elsewhere	Unlikely– likely to be logistically difficult. Could be used for particularly historical assets – church buildings?
Re-locate properties at risk	Development would be allowed in the at risk areas provided this only involved properties that can be easily relocated to a new site as the risk increases	Not recommended – NNDC unlikely to grant planning for this.



To assess the potential for adaptation options to be implemented four options have been selected (Table 3.2) representing the more suitable options for the area.

Table 3.2: Potential adaptation options to be considered further

	Option	Assumptions
6	Buy and rent properties	Buy all the properties and lease until they are deemed imminently at risk.
7	Buy, demolish and rebuild properties	Demolish all the properties and relocate and rebuild the properties further back on new land (away from the risk of erosion). This land could either be purchased by the EA or by NNDC. May need to be compulsory purchase.
8	Buy and demolish properties	Buy all the properties and demolish them in the same year
9	Buy, rent and demolish properties	Buy all the properties and rent them until they are deemed imminently at risk and demolish.

Combining both the capital works and the adaptation options this presents a series of options to test further. Firstly the short-listed options will be tested for 0-20 years for capital works only and then long term options (0-100 years) which will include adaptation measures following the short term options.

3.4 Short-listed options to take forward

Table 3.3 outlines the short-listed options to be taken forward to economic analysis at Bacton, Walcott and Ostend respectively, but also as one unit. Short term options can be considered on their own or in conjunction with the long term options. Long term actions in this report should not be considered without the short term options being implemented between 0-20 years.

Table 3.3 Short-listed options for economic analysis

	1) Do-nothing baseline
Short term 'Hold the Line'	2) Do-nothing until failure event and emergency works
Options (0-20 years only)	3) Capital Maintenance and patch repair
	4) Capital Works – typical
	5) Capital Works- extensive
Long term Adaptation Options	As above but for years 20-100 with:
(20-100 years)	6) Buy and lease properties
	7) Buy, demolish and rebuild properties
	8) Buy and demolish properties
	9) Buy, rent and demolish properties



4 Economic assessment

4.1 Approach

The economic assessment is based on the latest Flood and Coastal Erosion Risk Management Appraisal Guidance (FCRM–AG, 2010), which provides guidance on the methodology to undertake effective appraisals. The guidance assists in considering economic benefits and losses that arise from particular options.

The economic assessment utilises the spreadsheet templates provided by the Environment Agency (2012), which is the basis on which the Environment Agency will approve coastal defence Schemes and grant funding. The economic assessment includes information from the HM Treasury Green Book (2011) and Multi-Coloured Manual (Middlesex University, 2010). It should be noted that the economic assessment was undertaken in line with current DEFRA and treasury guidance (FCRM-AG, 2010) and is appropriate as any future government funding for Schemes will be assessed against this criteria.

This economic assessment provides a framework for assessing the advantages and disadvantages of the options by expressing all of the potential effects and benefits of an option in terms of its monetary cost. The assessment considers the value (cost) of the options and whether investment in any option is worthwhile against the benefits. Benefits include protection of residential and non-residential properties, infrastructure and tourism/ recreation. An option is considered to be 'justified' if the benefits outweigh the costs (i.e. the benefit cost ratio is greater than one).

Costs and benefits can be expressed in terms of their cash value in pounds sterling but also in terms of their Present Value (PV). The Present Value of the future pound is assumed to fall away through time. To include this in the benefit cost ratio the discount factor provided in the HM Treasury Green Book (2011) is applied. The long term discount rates are included in the benefit cost ratio analysis to allow the uncertainty of the future to be included. This uncertainty is shown to cause a decline in discount rates over time. The HM Treasury Green Book recommends that for benefit cost analyses which accrue for more than 30 years the following discount rates should be used: 3.5% (0 to 30 years), 3% (30 to 75 years) and 2.5% (75 to 100 years). Present Value benefits are calculated by discounting which depends on the year of loss of that benefit e.g. the year a house is lost to coastal erosion. Present Value costs are calculated by discounting the year in which works are implemented.

4.2 Benefits

Benefits (calculated from erosion damages avoided by implementing a Scheme) for Bacton, Walcott and Ostend have been calculated using guidance from the Multi-Coloured Manual (MCM, 2010) and FCERM-AG (2010) over a 100 year period. Benefits have been discounted in accordance with the HM Treasury Green Book. The price date for the benefits is the same as for the costs (April 2014).

The benefits were calculated from the value of the properties, impacts to flooding and other major infrastructure affected by predicted erosion rates during the 100 year time period. The erosion rates were calculated using the SCAPE model based on the residual life of the defences along the 35km stretch of coastline from Cromer to Winterton Ness as part of the previous Study. The SCAPE model aims to provide a more realistic assessment of potential erosion of the coastline (and therefore benefits) by considering the coastal dynamics of the entire 'system' from Cromer to Winterton Ness including sediment transport



between sub-cells. Two separate scenarios were originally considered within the SCAPE model for this benefit assessment:

- The "Do Nothing" Baseline. The "Do Nothing" Baseline is not a policy option but is required as a baseline against which all other options to Do Something are assessed and is required when undertaking economic assessment of the options. This allows comparison and contrasting of the costs of 'doing something' against the benefits arising from 'doing nothing'.
- The SMP6 Scenario considers the Do Something options in accordance with the adopted SMP6 2005 (Kelling Hard to Lowestoft) policies i.e. 'Hold the Line' and 'Managed Realignment'.

Outputs from the SCAPE model for Bacton, Walcott and Ostend showing the extent of predicted erosion for both of these scenarios over the next 100 years is presented below in Figure 4.1 and Figure 4.2. No additional runs of the model have been taken for this specific Study at Bacton, Walcott and Ostend which has some limitations and will be considered further below.

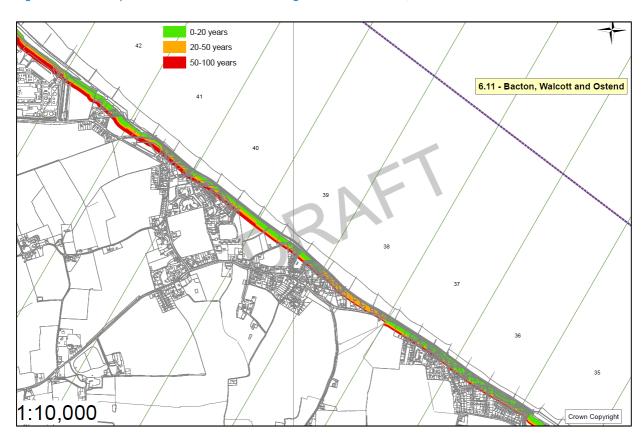


Figure 4.1: Erosion predictions under the "Do Nothing" scenario at Bacton, Walcott and Ostend



0-20 years
20-50 years
50-100 years
41

6.11 - Bacton, Walcott and Ostend

Figure 4.2: Erosion predictions under the SMP policy at Bacton, Walcott and Ostend ('Hold the Line' for 20 years and 'Managed Realignment' for 20-100 years).

Table 4.1 below shows the number of residential and commercial properties at risk under both scenarios.

Table 4.1: Summary of residential properties (in bold) and commercial properties (in brackets) at risk over 100 years under both a "Do Nothing" Baseline and SMP6 Scenario according to the SCAPE Model for Bacton, Walcott and Ostend

"Do Nothing" Baseline	SMP Policy	"Do Nothing" Baseline	SMP Policy	"Do Nothing" Baseline	SMP Policy	"Do Nothing" Baseline	SMP Policy
0-20 years		21-50	years	51-100	years	То	tal
94 (0)	14 (0)	51 (1)	253 (13)	51 (4)	85 (4)	196 (5)	352(17)

Under a "Do Nothing" Baseline in the SCAPE model, 201 properties (commercial and residential) are at risk of coastal erosion over (approximately) 4km length of frontage from Bacton to Ostend. There are additional flood and infrastructure damages associated with this frontage which will be incorporated into the economic analysis.

Under the SMP6 Scenario, there is minimal erosion of the coastline shown in the SCAPE model over the short term (0-20 years) due to implementation of the 'Hold the Line' policy. However once the defences are left to fail in year 21, increased erosion rates occur and over the 100 years, more erosion occurs under the SMP6 Scenario than the "Do Nothing" Baseline.

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Within the SCAPE model runs this is likely to be due to 'Hold the Line' policy and coastal defences at Bacton Gas Terminal limiting the sediment supply to the frontage at Bacton, Walcott and Ostend. This provides less buffering of erosion down drift. It is important to recognise that although the SMP6 Scenario shows increased erosion compared to the "Do Nothing" Baseline, if the SMP6 policies are implemented further up the coastline (Policy Units 6.05-6.10) the erosion in this Policy Unit under a "Do Nothing" Baseline would be accelerated. Therefore the "Do Nothing" Baseline used in this assessment is a very conservative baseline and with further detailed study and SCAPE model runs there is likely to be an increase in damages associated with the "Do Nothing" scenario and therefore an increase in the benefits of doing something.

The market value of each property was reviewed from the Cromer to Winterton Ness Coastal Management Strategy Study (2013) and divided into Bacton, and Walcott and Ostend (Figure 1.1). The values were updated by 1.3% with regards to the RPI change between 2012 and 2014.

4.2.1 Flooding benefits

Walcott and Bacton is potentially vulnerable to flooding. The flood damages in the cost benefit analysis are based on the damages that HR Wallingford obtained for the North Norfolk Coastal Strategy (2004) which has been updated in this Study. The flood damages are assumed to occur up to the year that the sea wall fails, with increased flood damages after this year.

Flood damages have only been calculated up until the property is eroded, after this there are no flood damages assumed (only erosion losses) to that property. The damages to the properties from the 2004 study were increased by 33% based on the latest RPI. Further study would be required at PAR stage to assess the recent flooding which occurred as result of the storm surge in winter 2013/2014 and the Average Annual Damages that result from flooding.

4.2.2 Other benefits

In addition to property benefits, infrastructure and service amenities will also be lost over the next 100 years under a "Do Nothing" Baseline. The assumptions and values of these are outlined below in Table 4.2. Wider socio-economic implications of the "Do Nothing" Baseline e.g. people, businesses (and jobs) moving away to other areas, is not considered as it is very difficult to apply a monetary value to these benefits. The benefits from tourism have not been included in the assessment due to uncertainties with the accuracy of the data (see Mott MacDonald, 2013).

Table 4.2: Other benefits along the frontage (values are before discounting has been applied)

Benefit	Description	Value
Preventing the erosion of roads	Erosion of the B1159 at Walcott represents the loss of the main road which runs along the coast. As all other nearby roads are much smaller, there would not be the opportunity for diversion and therefore new sections of road would need to be built. The sections have been used from the 2004 Strategy. However, the costs have been calculated using figures from Spon's Architects' and Builders' Price Book (2013).	Erosion of B1159 = £1.2 million



4.2.3 Benefit summary

Table 4.3: Benefits along the frontage(s)

Frontage	PV Benefits (£k) (0-20 years)	PV Benefits (£k) (0-100 years)	
Bacton	£1,260k	£1,699k	
Walcott and Ostend	£12,094k	£14,307k	
All	£13,354k	£16,006k	

4.3 Option Costs

The Present Value costs of each of the short term and long term options were determined by combining the capital and maintenance and adaptation costs correct as of April 2014 and discounting to the year of implementation. Capital costs include significant works or upgrades to defences. Maintenance costs can either be annual or periodic. Increased sea level rise and potential increases in storm frequency and intensity suggest the maintenance required may be more frequent and more laborious than currently. Assuming that no funding was available and therefore no government funded capital works could go ahead over the next 100 years then the maintenance burden on NNDC would be significantly increased.

Costs have been estimated and optimised using contractor information and recent costs of construction of similar works. Costs have been reviewed and re-assessed as more details and construction information has been obtained. At this stage, appraisal and detailed design costs have been excluded from the estimates.

Costs have been estimated as realistically as possible considering the nature of the study, with an Optimism Bias of 60% (as typical in the FCRM-AG guidance, 2010), which naturally increases estimated prices and reduces derivative benefit cost ratios. As designs are subsequently refined and specific contractor methods, materials and working practices are gained through potential Early Contractor Involvement through Project Appraisal and Detailed Design Stages, the Optimism Bias can be reduced. The costs for the each of the short listed options are presented below.

4.3.1 Short term options (0-20 years)

4.3.1.1 Option 2: "Do Nothing" event until failure and emergency works

This option assumes that no works would be undertaken between 0-20 years but if an event occurs and a section of defences is breached, it would be repaired. The cost of repair for this section would be £1.3million assuming that 10% of the frontage fails and would need repair at some point within 20 years. The cost of the repairs for this failure scenario is based on the recent cost of emergency works along the seawall and promenade undertaken for a 150m long section at Sheringham following the winter storms.

The probability of this failure occurring (expressed as a percentage here) is likely to increase in time as the condition of the defences continues to deteriorate in time. We have assumed an exponential increase in chance of failure in time as shown in Table 4.3 below for the £1.3million works. The cost of the repairs for Bacton, Walcott and Ostend as one unit was then divided into third for Bacton and two thirds for Walcott and Ostend.



Table 4.4: Probability of Repairs for Failure Scenario at **Bacton**, **Walcott and Ostend** (The total £1.3 million cost of repair has been divided up based on the probability or chance of occurrence per year)

repair nas	been divided up based on the probability	Proportion of total cost based on Cumulative cost			
		an increasing probability of			
Year	Cumulative probability of event (%)	occurr	ence in time		
1	1	£	13,877	£	13,877
2	2	£	13,877	£	27,753
3	3	£	13,877	£	41,630
4	4	£	13,877	£	55,507
5	6	£	27,753	£	83,260
6	8	£	27,753	£	111,013
7	10	£	27,753	£	138,767
8	15	£	69,383	£	208,150
9	20	£	69,383	£	277,533
10	25	£	69,383	£	346,917
11	30	£	69,383	£	416,300
12	35	£	69,383	£	485,683
13	40	£	69,383	£	555,067
14	45	£	69,383	£	624,450
15	50	£	69,383	£	693,833
16	60	£	138,767	£	832,600
17	70	£	138,767	£	971,367
18	80	£	138,767	£	1,110,133
19	90	£	138,767	£	1,248,900
20	100	£	138,767	£	1,387,667

4.3.1.2 Option 3: Capital maintenance and patch rapid repair

This option includes capital maintenance for the groynes, seawall and timber revetment in year 1 and year 9 and then 20% of that as minor maintenance in year 18. This option would be sufficient to patch and repair the defences and sustain their current function to protect the cliffs behind the defences and support trapping of sediment within the groyne field.

Table 4.5: Option 3 assumptions, costs and risks

Option	Assumptions	Cost (£/m)	Risks/Constraints
Seawall	Cement Grouting of seawall- it has been assumed that 10% of the	Approximately	This would not
	structure is repaired.	£180/m	increase the
Groynes	In each bay the timber planks have been assumed to be between		residual life of the
	3-5m in length. The repairs have been taken as 10% of the total		defences but
	number of the planks in each groyne.		instead 'sweat' their
	There are 25 groynes between Bacton and Ostend which are		remaining life until
	estimated as 90m in length, 2m high and formed of 7 planks per		the 'Managed
	groyne bay. The timber piles have been assumed to be		Realignment' policy
	Greenheart Timber and 10m in length. Each plank is fixed to the		would start in year
	piles with bolts and an estimate of 4 per plank has been included		20. Therefore the
	in the costs.		defences may still
Timber	In each bay the timber planks have been assumed to be between		be vulnerable to
Revetment	5-8m in length. The repairs have been taken as 10% of the total		collapse.
	number of the planks along the revetment length.		
	The timber piles have been assumed to be 300x300mm		
	Greenheart Timber at 10m lengths. Each plank is fixed to the piles		
	with bolts and an estimate of 4 per plank has been included in the		
	costs.		



4.3.1.3 Option 4: Capital works – typical

This option includes capital works being carried out along the frontage for typical capital works Scheme e.g gabions, seawall encasement or beach recharge. These works would aim to protect the seawall and cliffs behind for a 20 year period. For the purposes of comparison with the other options, the options have been briefly outlined below but the spreadsheets are included in Appendix A. Generally costs are of a similar magnitude in terms of cost per metre (see Table 4.6 below), regardless of which capital works method is chosen.

Table 4.6: Option 4 assumptions, costs and risks

Option	Assumptions	Cost (£/m)	Risks/Constraints
Concrete Encasement	Insitu concrete – assumed 200mm cast with timber shuttering	£450/m	Seawall will be repaired but works will not reduce the reflection of waves and therefore overtopping onto the promenade.
Buried Gabions	1mx1m gabion blocks- assume 1 single layer deep and 3 layers high	£420/m	Gabion baskets could be exposed and break up creating debris on the beach.
Recharge	Assume 2.5m high with 1 in 9 slope and material transported by lorry.	£600/m	Beach could be lost in a storm.

4.3.1.4 Option 5: Capital works- extensive

This option includes capital works being carried out along the frontage but is more extensive than the typical works; this includes rock placement. These works would protect the seawall and cliffs behind for a 20 year period and provide confidence to NNDC in case of a storm event.

Table 4.7 Option 5 assumptions, costs and risks

Option	Assumptions	Cost (£/m)	Risks/Constraints
Placement of Rock Armour- Granite	Slope of 1 in 2. Height of 2.5m (0.5 m excavation beneath) and 5m wide.	£1500/m	Would be expensive to construct along entire frontage

4.3.2 Long term options (0-100 years – including adaptation)

In addition to the short term options (0-20years) listed above, in the long term adaptation measures can be considered from year 20 onwards to implement the 'Managed Realignment' policy. A brief sensitivity analysis has been undertaken on when the properties are bought and leased etc in Appendix B.

4.3.2.1 Option 6: Buy and lease properties

This option assumes that all residential properties are bought by NNDC according to the erosion band in which they are situated i.e. 0-20 years, 20-50 years and 50-100 years and then rented out. A 10% allowance has been included on top of the value of the properties to cover maintenance/insurance and potential unoccupied time before the property is leased out. It is assumed that a property cannot be rented the year that it will erode, but would start the year after. Properties are assumed to be protected under the options above (Options 2,3,4) and therefore there will be a delay in when erosion occurs by 20 years. There are few commercial properties within this area however it is difficult to provide accurate estimations of any changes in their market value within this relatively high level Study; therefore the commercial



properties including children's home, hotel, chalet parks, shops etc have been excluded but should be considered further at Project Appraisal stage.

In year 20 all residential properties at risk of erosion within the 0-20 "Do Nothing" erosion band will be bought from their owners and rented until year 35 (average time at which properties will be lost). Similarly, in year 40 all properties from the 20-50 "Do Nothing" erosion band will be bought and rented until year 55, and in year 70 all properties from the 70-100 "Do Nothing" erosion band are purchased and rented until their assumed erosion in year 85. A brief sensitivity analysis has been undertaken (Appendix B) however more detailed analysis of properties and when they are rented out and when they are finally lost will be required at Project Appraisal stage.

The full market value of each of the residential properties at risk of erosion over 100 years was considered. The market value was reviewed from the Cromer to Winterton Ness Coastal Management Strategy Study (2013) and updated according to the RPI.

An average value of the annual rent per each type of property was estimated from the website: homes.findthebest.co.uk and cross-referenced with zoopla.co.uk. For the purposes of this study various assumptions regarding the number of beds properties have been made (see Table 4.8). It has also been assumed that 100% of the properties will be rented 100% of the time from the purchase until the average time at which erosion takes place (midpoint between the erosion bands as above). Table 4.8 presents the annual rent per type of property considered in this Study. Tables 4.9- 4.11 present the total rent for all properties in each year.

Table 4.8: Rent per year according to the property type (number of beds assumed to coincide with data found at www.homes.findthebest.co.uk).

,	
Type of property	Average rent/year(£)
Detached (assumed 4 bed)	£10,200
Semi-detached (assumed 3 bed)	£7,800
Terrace (assumed 2 bed)	£6,300
Flat (assumed 1 bed)	£4,800

Table 4.9: "Do Nothing" erosion scenario total rent (i.e income to NNDC) per year based on the number of properties available to rent at **Bacton**

Years	Total Rent/Year (£)
1-20	£143k
21-50	£65k
51-100	£129k

Table 4.10: "Do Nothing" erosion scenario total rent (i.e income to NNDC) per year based on the number of properties available to rent at **Walcott and Ostend**

Years	Total Rent/Year (£)
1-20	£724k
21-50	£412k
51-100	£374k

Table 4.11: "Do Nothing" erosion scenario total rent per year based on the number of properties available to rent at **Bacton, Walcott and Ostend**

Years	Total Rent/Year (£)
1-20	£867k



Years	Total Rent/Year (£)
21-50	£477k
51-100	£503k

4.3.2.2 Option 7: Buy, demolish and rebuild properties

This option assumes that the demolition, relocation and rebuilding of the properties will be implemented according to the erosion band in which are located. Properties are assumed to be protected by the capital works and therefore there will be a delay in when erosion occurs by 20 years i.e. all properties located on the 0-20 erosion band will be demolished, relocated and re-built in year 20. Similar, in year 40 all properties from the 20-50 erosion band will be demolished, relocated and re-built; and, in year 70 all properties from the 50-100 erosion band will be demolished, relocated and re-built.

NNDC can claim up to £6k per property for demolition via the Coastal Local Authority Erosion Assistance Grant (CLAEAG). This accounts for houses that were constructed before July 2009 and is relevant for properties considered to be at imminent risk of loss to coastal erosion. The £6k is an average value – in some instances landscaping may be required (and further funding may be sought) and for smaller properties it may be cheaper. Table 4.12 presents the summaries of the costs.

Table 4.12: Demolition costs "Do Nothing" erosion scenario

	Bacton	Walcott and Ostend	TOTAL
Number of properties "Do Nothing"	37	158	196
Demolition cost (£/k)	£126k	£948k	£1,074k

The estimation of the relocation of each residential property cost was based on the purchase of an area of land per property. The calculations were based on the North Norfolk Management Plan (2008), where an average of 333m^2 of land was assumed to be purchased for the relocation of each residential property. Considering an average floor area of 100m^2 , 333m^2 of new land per property will include a large garden, similar to the current properties in Bacton, Walcott and Ostend. This is a generous assumption which has been included in the assessment.

The land purchase prices were based on agricultural land surrounding the area; original prices were from the North Norfolk Management Plan (2008) included a price of £12,300 per hectare (May 2008). Research carried out since then indicates that land prices in Norfolk have increased (www.uklandandfarms.co.uk) on average to £21,091 per hectare. This is equivalent to £21.30/m². Table 4.7 presents the land purchase estimation costs under the "Do Nothing" scenario. At this stage, this assessment has not considered potential compensation requirements for farmers. However, this would need to be considered in more detail at PAR stage.

Table 4.13: Land purchase estimation costs (assuming 333m² per residential property)

Area	Cost per m ²	Total for all properties
Bacton only		£319k
Walcott and Ostend	001.00	
	£21.30	£1,331k
All		
		£1,650k

An estimated rebuild cost was obtained from the North Norfolk Management Plan (2008), corresponding to £850/m² (May 2008). However further investigation found that the average rebuild cost is likely to be higher



between £1300 to £2500/m² (NWBrown, 2013). Therefore a value of £2000/m² was taken instead which is likely to be more realistic.

In order to estimate the rebuild cost per type of property, an average house floor area was obtained from a Nationwide survey (23rd April 2008) (nationwide.co.uk, accessed in November 2013) and cross referenced with the properties in Bacton (Zoopla.co.uk, accessed in April 2014). According to the information available, the average floor area of a 3 bedroom house and 2 bedrooms flat were considered in this assessment. Table 4.14- 4.16 presents the rebuild cost per type of property.

Table 4.14: Rebuild costs at **Bacton** excluding commercial properties

	Detached house	Semi-detached house	Terrace	Flat	TOTAL
Average surface (m ²)	120	105	96	70	
Number of properties "Do Nothing"	27	3	3	4	37
Rebuild cost per type of house	£6,480k	£630k	£576k	£560k	£8,246k

Table 4.15: Rebuild costs at Walcott and Ostend excluding commercial properties

	Detached house	Semi-detached house	Terrace	Flat	TOTAL
Average surface (m ²)	120	105	96	70	
Number of properties "Do Nothing"	119	3	3	4	159
Rebuild cost per type of house	£28,560k	£630k	£576k	£560k	£30,326k

Table 4.16: Rebuild costs at **Bacton, Walcott and Ostend** excluding commercial properties

	Detached house	Semi-detached house	Terrace	Flat	TOTAL
Average surface (m ²)	120	105	96	70	
Number of properties "Do Nothing"	146	6	6	8	196
Rebuild cost per type of house	£35,040k	£1,260k	£1,152k	£1,120k	£38,572k

4.3.2.3 Option 8: Buy and demolish properties

This option utilises information on the value of properties at Bacton, Walcott and Ostend and the estimated values for demolition of each property (on average £6k/property) as already outlined above.

4.3.2.4 Option 9: Buy, lease and demolish properties

This option utilises information on the value of properties at Bacton, Walcott and Ostend and the estimated values for rental and demolition of each property (on average £6k/property) as already outlined above.



4.3.3 Summary of costs

The table below provides a summary of costs for each option.



Table 4-17 Summary of Present Value (PV) Costs (£K) for **short term options (0-20years)** (NB numbers have been rounded up and exclude costs for Appraisal and Detailed Design.)

Short term option (0-20 years)		Initial Im	Initial Implementation PV Cost (Year 1-5) (£k)			re PV Costs (Yea (£k)	Total PV Cost (£k)	Total PV Cost (£k) (60% bias)	
		Capital (£k)	Maintenance (£k)	Sub Total (£k)	Capital (£k)	Maintenance (£k)	Sub Total (£k)	COSt (LK)	(LK) (UU /o Dias)
Bacton only	2- Do-nothing until failure event and emergency works	24	0	24	261	0	261	285	456
	3-Capital Maintenance and patch repair	0	230	230	0	307	307	537	859
	4- Capital Works - typical	590	0	590	0	0	0	590	944
	5- Capital Works - extensive	1,868	0	1,868	0	0	0	1,868	2989
Walcott and	2- Do-nothing until failure event and emergency works	50	0	50	532	0	532	582	931
Ostend only	3-Capital Maintenance and patch repair	0	434	434	0	562	562	996	1,594
	4- Capital Works - typical	1,205	0	1,205	0	0	0	1,205	1,928
	5- Capital Works - extensive	3,814	0	3,814	0	0	0	3,814	6,102
Bacton, Walcott	2- Do-nothing until failure event and emergency works	74	0	74	793	0	793	867	1,387
and Ostend	3-Capital Maintenance and patch repair	0	664	664	0	869	869	1,533	2,453
	4- Capital Works - typical	1,795	0	1,795	0	0	0	1,795	2,872
	5- Capital Works - extensive	5,682	0	5,682	0	0	0	5,682	9,091



Table 4-18 Summary of Summary of Present Value (PV) Costs (£K) for **long term options (0-100 years)** (NB Option 1 is Do Nothing) (NB numbers have been rounded up and exclude costs for Appraisal and Detailed Design.) * Other costs represent the rental income from the properties and therefore is a negative cost.

	Long term option (0-100 years)			nplementation P	V Cost	Cost Future PV Costs (Year 6-100)			(£k)		
		20-100 years	(Year 1-5) (£k)		i ata	e i v 003i3 (1ec	11 0-100)	(ZR)	Total PV Cost (£k)	Total PV Cost (£k)	
Area	0-20 years capital works	Adaptation	Capital (£k)	Maintenance (£k)	Sub Total (£k)	Capital (£k)	Maintenance (£k)	Other (£k)	Sub Total (£k)		(60% bias)
	2 - Do-nothing until failure event and emergency works		24	0	24	1,740	0	-903	837	861	1,378
Bacton only	3 -Capital Maintenance and patch repair		0	230	230	0	307	-903	-596	-366	-586
	4 Capital Works - typical	Plus 6) buy and rent	590	0	590	1,479	0	-903	576	1,166	1,866
	5- Capital Works - extensive		1,868	0	1,868	1,479	0	-903	576	2,444	3,910
	2 - Do-nothing until failure event and emergency works		50	0	50	7,119	0	-4,467	2,652	2,702	4,323
Walcott and Ostend	3 -Capital Maintenance and patch repair		0	434	434	6,587	562	-4,467	2,682	3,116	4,986
Osteriu	4 - Capital Works - typical	properties	1,205	0	1,205	6,587	0	-4,467	2,120	3,325	5,320
	5- Capital Works - extensive		3,814	0	3,814	6,587	0	-4,467	2,120	5,934	9,494
Bacton,	2 - Do-nothing until failure event and emergency works		74	0	74	8,859	0	-5,370	3,489	3,563	5,701
Walcott and	3 -Capital Maintenance and patch repair		0	664	664	6,587	869	-5,370	2,086	2,750	4,400
Ostend	4 - Capital Works - typical		1,795	0	1,795	8,066	0	-5,370	2,696	4,491	7,186
	5- Capital Works - extensive		5,682	0	5,682	8,066	0	-5,370	2,696	8,378	13,405
	2 - Do-nothing until failure event and emergency works	Plus 7) Buy,	24	0	24	2,942	0	0	2,942	2,966	4,746
Bacton only	3 -Capital Maintenance and patch repair	demolish and rebuild	0	230	230	2,681	307	0	2,988	3,218	5,149
	4 - Capital Works - typical	properties	590	0	590	2,681	0	0	2,681	3,271	5,234



	Long term option (0-100 years)		Initial I	nplementation P	V Cost	Futu	re PV Costs (Yea				
		20-100 years	(Year 1-5) (£k)			i utu	ie FV Costs (Tea	ai 0-100)	(£k)	Total PV Cost (£k)	Total PV Cost (£k)
Area	0-20 years capital works	Adaptation	Capital (£k)	Maintenance (£k)	Sub Total (£k)	Capital (£k)	Maintenance (£k)	Other (£k)	Sub Total (£k)		(60% bias)
	5- Capital Works – extensive		1,868	0	1,868	2,681	0	0	2,681	4,549	7,278
	2 & 6- Do-nothing until failure event and emergency works		50	0	50	13,820	0	0	13,820	13,870	22,192
Walcott and Ostend	3 Capital Maintenance and patch repair		0	434	434	13,288	562	0	13,850	14,284	22,854
Osteriu	4 Capital Works - typical		1,205	0	1,205	13,288	0	0	13,288	14,493	23,189
	5- Capital Works - extensive		3,814	0	3,814	13,288	0	0	13,288	17,102	27,363
Bacton,	2 Do-nothing until failure event and emergency works		74	0	74	16,762	0	0	16,762	16,836	26,938
Walcott and	3 Capital Maintenance and patch repair		0	664	664	15,969	869	0	16,838	17,502	28,003
Ostend	4 Capital Works - typical		1,795	0	1,795	15,969	0	0	15,969	17,764	28,422
	5- Capital Works – extensive		5,682	0	5,682	15,969	0	0	15,969	21,651	34,642
	2 - Do-nothing until failure event and emergency works		24	0	24	1,673	0	0	1,673	1,697	2,715
Bacton only	3 -Capital Maintenance and patch repair		0	230	230	1,412	307	0	1,719	1,949	3,118
	4 - Capital Works - typical		590	0	590	1,412	0	0	1,412	2,002	3,203
	5- Capital Works - extensive		1,868	0	1,868	1,412	0	0	1,412	3,280	5,248
	2 - Do-nothing until failure event and emergency works	Plus 8) Buy and	50	0	50	6,845	0	0	6,845	6,895	11,032
Walcott and Ostend	3 -Capital Maintenance and patch repair	demolish properties	0	434	434	6,313	562	0	6,875	7,309	11,694
Ostella	4 - Capital Works - typical		1,205	0	1,205	6,313	0	0	6,313	7,518	12,029
	5- Capital Works - extensive		3,814	0	3,814	6,313	0	0	6,313	10,127	16,203
Bacton, Walcott	2 - Do-nothing until failure event and emergency works		74	0	74	8,518	0	0	8,518	8,592	13,747
and Ostend	3 -Capital Maintenance and patch repair		0	664	664	7,725	869	0	8,594	9,258	14,813



	Long term option (0-100 years	s)	Initial Implementation PV Cost			Forter	vo DV Cooto (Voc	~ 6 100\	(£k)		
	0-20 years capital works	20-100 years		(Year 1-5) (£k)		Future PV Costs (Year 6-100)			(£K)	Total PV Cost (£k)	Total PV Cost (£k)
Area		Adaptation	Capital (£k)	Maintenance (£k)	Sub Total (£k)	Capital (£k)	Maintenance (£k)	Other (£k)	Sub Total (£k)		(60% bias)
	4 - Capital Works - typical		1,795	0	1,795	7,725	0	0	7,725	9,520	15,232
	5- Capital Works - extensive		5,682	0	5,682	7,725	0	0	7,725	13,407	21,451
	2 - Do-nothing until failure event and emergency works		24	0	24	1,807	0	-903	904	928	1,485
Bacton only	3 -Capital Maintenance and patch repair		0	230	230	1,546	307	-903	950	1,180	1,888
	4 - Capital Works - typical		590	0	590	1,546	0	-903	643	1,233	1,973
	5- Capital Works - extensive		1,868	0	1,868	1,546	0	-903	643	2,511	4,018
	2 - Do-nothing until failure event and emergency works	Plus 9)	50	0	50	7,444	0	-4,467	2,977	3,027	4,843
Walcott and Ostend	3 -Capital Maintenance and patch repair	Buy, rent and demolish	0	434	434	6,912	562	-4,467	3,007	3,441	5,506
Ostena	4 - Capital Works - typical	properties	1,205	0	1,205	6,912	0	-4,467	2,445	3,650	5,840
	5- Capital Works - extensive		3,814	0	3,814	6,912	0	-4,467	2,445	6,259	10,014
Bacton,	2 - Do-nothing until failure event and emergency works		74	0	74	9,251	0	-5,370	3,881	3,955	6,328
Walcott and	3 -Capital Maintenance and patch repair		0	664	664	8,458	869	-5,370	3,957	4,621	7,394
Ostend	4 - Capital Works - typical		1,795	0	1,795	8,458	0	-5,370	3,088	4,883	7,813
	5- Capital Works - extensive		5,682	0	5,682	8,458	0	-5,370	3,088	8,770	14,032



4.4 Benefit cost ratios

In order to compare the different options it is useful to consider the benefit cost ratios for each option. The benefit cost ratio compares the cost of each option over the next 20 and 100 years against the benefits over the same periods and are presented below.

4.4.1 Short term options (0-20 years)

Table 4.19: Benefit cost ratios for each option for Bacton only

Option	PV Costs (£k) 60% bias	PV Benefits (excluding tourism) (£k)	Av. BCR (excluding tourism)
2- Do-nothing until failure event and emergency works	456	1,260	2.8
3-Capital Maintenance and patch repair	858		1.5
4- Capital Works - typical	945		1.3
5- Capital Works - extensive	2,988		0.4

Table 4.20: Benefit cost ratios for each option for Walcott and Ostend

Option	PV Costs (£k) 60% bias	PV Benefits (excluding tourism) (£k)	Av. BCR (excluding tourism)
2- Do-nothing until failure event and emergency works	931		12.5
3-Capital Maintenance and patch repair	1,596	12,094	7.6
4- Capital Works - typical	1,929		6.3
5- Capital Works - extensive	6,102		2.0

Table 4.21: Benefit cost ratios for each option for Bacton, Walcott and Ostend as one unit

Option	PV Costs (£k) 60% bias	PV Benefits (excluding tourism) (£k)	Av. BCR (excluding tourism)
2- Do-nothing until failure event and emergency works	1,387		9.6
3-Capital Maintenance and patch repair	2,454	13,354	5.4
4- Capital Works - typical	2,874		4.6
5- Capital Works - extensive	9,090		1.5



4.4.2 Long term options (0-100 years)

Table 4.22: Benefit cost ratios for each option for **Bacton only**

Option	each option for Bacton only	PV Costs (£k)	PV Benefits (excluding tourism)	Av. BCR (excluding
O.D. mathing matil failure		60% bias	(£k) ´	tourism)
2 Do-nothing until failure event and emergency works		1,378		1.2
3 -Capital Maintenance and patch repair	Plus 6) Buy and rent properties	-586		-2.9*
4 Capital Works - typical		1,866		0.9
5- Capital works- extensive		3,910		0.4
2 Do-nothing until failure event and emergency works		4,765		0.4
3 -Capital Maintenance and patch repair	Plus 7) Buy, demolish and rebuild properties	5,149	1,699	0.3
4 Capital Works - typical		5,234		0.3
5- Capital works- extensive		7,278		0.2
2 Do-nothing until failure event and emergency works		2,715		0.6
3 -Capital Maintenance and patch repair	Plus 8) Buy and demolish	3,118		0.5
4 Capital Works - typical	properties	3,203		0.5
5- Capital works- extensive		5,248		0.3
2 Do-nothing until failure event and emergency works		1,485		0.9
3 -Capital Maintenance and patch repair	Plus 9) Buy, rent and demolish properties	1,888		0.9
4 Capital Works - typical		1,973		0.9
5- Capital works- extensive		4,018		0.4

^{*}this benefit cost ratio is negative due to the rental income from the properties outweighing the capital cost of purchasing the properties.



Table 4.23: Benefit cost ratios for each option for Walcott and Ostend only

Option		PV Costs (£k) 60% bias	PV Benefits (excluding tourism) (£k)	Av. BCR (excluding tourism)
2 Do-nothing until failure event and emergency works		4,323	14,307	3.3
3 -Capital Maintenance and patch repair	Plus 6) Buy and rent properties	4,986		2.9
4 Capital Works - typical		5,320		2.7
5- Capital works- extensive		9,494		1.5
2 Do-nothing until failure event and emergency works		22,192		0.6
3 -Capital Maintenance and patch repair	Plus 7) Buy, demolish and rebuild properties	22,854		0.6
4 Capital Works - typical	rebuild properties	23,189		0.6
5- Capital works- extensive		27,363		0.5
2 Do-nothing until failure event and emergency works		11,032		1.3
3 -Capital Maintenance and patch repair	Plus 8) Buy and demolish properties	11,694		1.2
4 Capital Works - typical	properties	12,029		1.2
5- Capital works- extensive		16,203		0.9
2 Do-nothing until failure event and emergency works		4,843		3.0
3 -Capital Maintenance and patch repair	Plus 9) Buy, rent and demolish	5,506		2.6
4 Capital Works - typical	properties	5,840		2.4
5- Capital works- extensive		10,014		1.4



Table 4.24: Benefit cost ratios for each option for **Bacton**, **Walcott and Ostend** as one unit

Option		PV Costs (£k) 60% bias	PV Benefits (excluding tourism) (£k)	Av. BCR (excluding tourism)
2 Do-nothing until failure event and emergency works		5,701		2.8
3 -Capital Maintenance and patch repair	Plus 6) Buy and rent properties	4,400	16,006	3.6
4 Capital Works - typical		7,186		2.2
5- Capital works- extensive		13,404		1.2
2 Do-nothing until failure event and emergency works		26,938		0.6
3 -Capital Maintenance and patch repair	Plus 7) Buy, demolish and rebuild properties	28,003		0.6
4 Capital Works - typical	resulta properties	28,423		0.6
5- Capital works- extensive		34,641		0.5
2 Do-nothing until failure event and emergency works		13,747		1.2
3 -Capital Maintenance and patch repair	Plus 8) Buy and demolish	14,812		1.1
4 Capital Works - typical	properties	15,232		1.1
5- Capital works- extensive		21,451		0.7
2 Do-nothing until failure event and emergency works		6,328		2.5
3 -Capital Maintenance and patch repair	Plus 9) Buy, rent and demolish	7,394		2.2
4 Capital Works - typical	properties	7,813		2.0
5- Capital works- extensive		14,032		1.1

4.5 Partnership Funding

The 'Flood and Coastal Resilience Partnership Funding' approach allows a proportion of Government funding to be made available to any Scheme. The amount of funding is assessed relative to the benefits delivered by the Scheme including the number of households protected, and the damages being prevented. The 'number of houses protected' within the calculations includes the number of residential properties at risk in a "Do Nothing" Baseline which are outlined below in Table 4.25.



Table 4.25: Number of residential properties at risk in a "Do Nothing" Baseline.

Frontage	Timescale			
	0-20 years	20-50 years	50-100 years	Total
Bacton	16	9	15	37
Walcott and Ostend	77	42	39	158
Bacton, Walcott and Ostend	93	51	54	93

Only those options involving capital works with a benefit cost ratios of above 1 can realistically apply for FDGiA funding. Those options are outlined in the Table 4.26.

Table 4.26: **Short term Partnership Funding Calculator outputs** (NB numbers have been rounded up and exclude costs for Appraisal and Detailed Design.)

Area	Option	Benefit Cost Ratio	PV Total Costs with 60% Optimism Bias (£k)	Raw Partnershi p Funding Score (PFS) (%)	Maximum Partnership Funding Allocation (£k)	External contributions required to achieve 100% PFS (£k)	
Bacton	2 - Do-nothing until failure event and emergency works 3 -Capital Maintenance and patch repair	Not eligible for FDGIA					
	4- Capital Works - typical	1.3	£945	29%	£278	£667	
	5 Capital Works – extensive	Benefit cost ratio <1					
Walcott and Ostend	2 - Do-nothing until failure event and emergency works	Not eligible for FDGIA					
	3 -Capital Maintenance and patch repair						
	4 - Capital Works - typical	6.3	£1,929	89%	£1720	£209	
	5 Capital Works – extensive	2.0	£6,102	28%	£31,720	£4,382	
Bacton Walcott and	2 - Do-nothing until failure event and emergency works 3 -Capital Maintenance and	Not eligible for FDGIA					
Ostend	patch repair						
as one	4 - Capital Works - typical	4.6	£2,874	70%	£2,009	£865	
unit	5- Capital Works - extensive	2.0	£6,102	28%	£1,720	£4,382	



Table 4.27: Long term Partnership Funding Calculator outputs for Bacton only— (NB numbers have been rounded up and exclude costs for Appraisal and Detailed Design.) (NB numbers have been rounded up)

Short term option	Long term option	Bene fit Cost Ratio	PV Total Costs with 60% Optimism Bias (£k)	Raw Partnership Funding Score (PFS) (%)	Maximum Partnership Funding Allocation (£k)	External contributions required to achieve 100% PFS (£k)	
2- Do-nothing until failure event and emergency works 3 -Capital Maintenance and patch		Not eligible for FDGIA					
repair 4 - Capital Works - typical	Plus 6) Buy and rent						
5 - Capital Works - extensive	properties	Benefit cost ratio <1					
2- Do-nothing until failure event and emergency works 3 -Capital Maintenance and patch repair	Plus 7) Buy, demolish and	Not eligible for FDGIA					
4 - Capital Works - typical 5 - Capital Works - extensive	rebuild properties`	Benefit cost ratio <1					
2- Do-nothing until failure event and emergency works		Not eligible for FDGIA					
3 -Capital Maintenance and patch repair	Plus 8) Buy and Demolish						
4 - Capital Works - typical 5 - Capital Works - extensive	Properties	Benefit cost ratio <1					
2- Do-nothing until failure event and emergency works 3 -Capital Maintenance and patch	Plus 9) Buy,	Not eligible for FDGIA					
repair 4 - Capital Works - typical	rent and demolish						
5 - Capital Works - extensive	Properties	Benefit cost ratio <1					

^{*} whilst a BCR less than 1 was not previously economically justifiable – it is now possible to justify the business case if external funding sources can be found for the majority of the Scheme.



Table 4.28: Long term Partnership Funding Calculator outputs for Walcott and Ostend only – (NB numbers have been rounded up and exclude costs for Appraisal and Detailed Design.) (NB numbers have been rounded up)

been rounded up and exci		.pp.a.oa. aa 20	PV Total	Raw	Maximum	External			
Short term option	Long term option	Benefit Cost Ratio	Costs with 60% Optimism Bias (£k)	Partnership Funding Score (PFS) (%)	Partnership Funding Allocation (£k)	contributions required to achieve 100% PFS (£k)			
2- Do-nothing until failure event and emergency works			1	Not eligible for FD)GIA				
3 -Capital Maintenance and patch repair	Plus 6) Buy and rent								
4 - Capital Works - typical	properties	2.7	£5,320	54%	£2,853	£2,467			
5 - Capital Works - extensive		1.5	£9,494	30%	£2,853	£6,641			
2- Do-nothing until failure event and emergency works	Plus 7) Buy,		N	Not Eligible for FD	OGIA				
3 -Capital Maintenance and patch repair	demolish and rebuild								
4 - Capital Works - typical	properties`			Benefit cost ratio	<1				
5 - Capital Works - extensive				Benefit cost ratio	<1				
2- Do-nothing until failure event and emergency works	Plus 8) Buy		1	Not eligible for FD)GIA				
3 -Capital Maintenance and patch repair	and Demolish								
4 - Capital Works - typical	Properties	1.2	£12,029	24%	£2,853	£9,176			
5 - Capital Works - extensive				Benefit cost ratio	<1				
2- Do-nothing until failure event and emergency works	Plus 9) Buy,		1	Not eligible for FD)GIA				
3 -Capital Maintenance and patch repair	rent and demolish								
4 - Capital Works - typical	Properties	2.4	£5,840	49%	£2,853	£2,987			
5 - Capital Works - extensive		1.4	£10,014	28%	£2,853	£7,161			

^{*} whilst a BCR less than 1 was not previously economically justifiable – it is now possible to justify the business case if external funding sources can be found for the majority of the Scheme.



Table 4.29: Long term Partnership Funding Calculator outputs for Bacton, Walcott and Ostend – (NB numbers have been rounded up and exclude costs for Appraisal and Detailed Design.) (NB numbers have been rounded up)

nave been rounded up and	a oxolado ocolo i	or rippraidar a										
Area	Option	Benefit Cost Ratio	PV Total Costs with 60% Optimism Bias (£k)	Raw Partnership Funding Score (PFS) (%)	Maximum Partnership Funding Allocation (£k)	External contributions required to achieve 100% PFS (£k)						
2- Do-nothing until failure event and emergency works				Not eligible for F	DGIA							
3 -Capital Maintenance and patch repair	Plus 6) Buy and rent											
4 - Capital Works - typical	properties	2.2	£7,186	47%	£3,377	£3,809						
5 - Capital Works - extensive		1.2	£13,404 25% £3,377 £10,0									
2- Do-nothing until failure event and emergency works 3-Capital Maintenance	Plus 7) Buy, demolish and		Not Eligible for FDGIA									
and patch repair	rebuild properties`			INOLE IIGIDIE IOLE	DGIA							
4 - Capital Works - typical	ророгиос											
5 - Capital Works - extensive												
2- Do-nothing until failure event and emergency works				Not eligible for F	DGIA							
3 -Capital Maintenance and patch repair	Plus 8) Buy and Demolish											
4 - Capital Works - typical	Properties	1.1	£15, 232	22%	£3,377	£11,855						
5 - Capital Works - extensive				Not eligible for F	DGIA							
2- Do-nothing until failure event and emergency works												
3 -Capital Maintenance and patch repair	Plus 9) Buy, rent and											
4 - Capital Works - typical	demolish Properties	2.0	£7,813	45%	£3,377	£4,436						
5 - Capital Works - extensive		1.1	£14,032	24%	£3,377	£10,655						

^{*} whilst a BCR less than 1 was not previously economically justifiable – it is now possible to justify the business case if external funding sources can be found for the majority of the Scheme.



5 Combined Scheme with Bacton Gas Terminal

The Bacton Gas Terminal is situated just north of the Bacton, Walcott and Ostend frontage. Initial discussions with the Terminal Operators are required to consider whether a capital works at Bacton, Walcott and Ostend might be combined with works at the Bacton Gas Terminal. This has been investigated further below.

5.1 Benefit cost ratios

The PV Benefits for the Bacton Gas Terminal (from the Strategy stage) were estimated to be £201,219k. However, as noted at the Strategy stage, it is difficult to put an accurate value on this nationally important infrastructure and hence it may be underestimated. At Strategy stage, one of the options for protecting the Terminal over the next 100 years was for *'maximising the life of the current timber defences then implementing a high level rock revetment'*. The PV Cost (with 60% optimism bias) for this option was £6,967k. This therefore gives a benefit cost ratio for Bacton Gas Terminal on its own is 28.9. Two options for combining the Bacton Gas Terminal with a Scheme for Bacton, Walcott and Ostend have been tested – one the most expensive option for Bacton, Walcott and Ostend over 100 years and the least expensive (Table 5.1).

Table 5.1: Long term options for Bacton Gas Terminal to Ostend (NB numbers have been rounded up)

Long term option for Bacton Gas Terminal	Long term option for Bacton, Walcott and Ostend	Combined PV Benefits (£k)	Combined PV Total Costs with 60% Optimism Bias (£k)	Benefit Cost Ratio
Maximising the life of the current timber defences then	Option 5)Capital works- extensive (0-20 years) and Option 7) Buy, demolish and rebuild properties (20-100 years)		£41,608k	5.2
implementing a high level rock revetment (0- 100 years)	Option 3) Capital Maintenance and patch repair (0-20 years) and Option 6) Buy and rent properties(20-100 years)	£217,225k	£11,367k.	19.1

5.2 Partnership Funding

However technically Bacton Gas Terminal would not be eligible for FDGiA funding because it does not protect any properties from coastal erosion; therefore funding would need be developed through discussions with private investors and DEFRA funding for this nationally important infrastructure. The combined Scheme has been considered within the Partnership Funding spreadsheets for discussion regardless (Table 5.2).



Table 5.2: Long term Partnership Funding Calculator outputs for Bacton Gas Terminal to Ostend (NB numbers have been rounded up and exclude costs for Appraisal and Detailed Design.)

Long term option for Bacton Gas Terminal	Long term option for Bacton, Walcott and Ostend	Benefit Cost Ratio	PV Total Costs with 60% Optimism Bias (£k)	Raw Partnership Funding Score (PFS) (%)	Maximum Partnershi p Funding Allocation (£k)	External contributions required to achieve 100% PFS (£k)
Maximising the life of the current timber defences then implementing a	Option 5)Capital works- extensive (0-20 years) and Option 7) Buy, demolish and rebuild properties (20- 100 years)	5.2	£41,608k	35%	£1,456k	£27,052k
high level rock revetment (0-100 years)	Option 3) Capital Maintenance and patch repair (0-20 years) and Option 6) Buy and rent properties(20-100 years)	19.1	£11,367k	128%	£11,367k	£0k



6 Conclusions

6.1 Summary

Results from the economic analysis indicate a Scheme(s) may be viable at Bacton, Walcott and Ostend for progression to Project Appraisal stage (PAR). Different approaches could be undertaken to implement works at Bacton, Walcott and Ostend depending on whether a short or long term approach is required:

- 1. Short term options Schemes are all viable at Bacton, Walcott and Ostend separately and together as one Scheme in the short term, however a stronger economic case can be made for Walcott and Ostend in contrast to Bacton. It should be noted that a Scheme as Walcott and Ostend would be more likely to achieve FDGIA funding due to the number of properties at risk of erosion (and flooding) over the next 100 years captured in the Partnership Funding calculator. However it is unlikely to gain at least 100% to be currently prioritised for funding without substantial external contributions. The preferred option could be doing nothing until failure occurs, maintenance and repair of the existing defences (timber groynes, revetment and seawall) or capital works. However the preferred option will depend on how much NNDC want to invest in works for only the next 20 year period, how the works could be funded and how much risk NNDC are willing to accept.
- 2. Long term options it appears that all long term Schemes involving buy and rental of properties are likely to be more economically feasible than those which involve demolition and rebuilding of properties. This is because NNDC or the Environment Agency would receive some rental income from the lease of the properties which would counteract the initial spend of purchasing properties. However the technical (and political) feasibility of this option is not known at this stage and requires further discussion, particularly with the Environment Agency. Also the FCRM spreadsheet is not designed to consider adaptation options and several assumptions have been made within the spreadsheet. Further discussion is required with the Environment Agency to establish whether the assumptions undertaken are viable for a formal business case submission in the form of a PAR to be undertaken.
- 3. Combined option- there is potential for a Scheme between Bacton Gas Terminal and Ostend to be considered further. This combined option has a high benefit cost ratio (even taking the most expensive option) and therefore would be economically justified. The key question is how this option would be funded and whether it would be justifiable to utilise the existing Partnership Funding mechanisms despite the Bacton Gas Terminal works not protecting any properties. This requires more discussion with the Environment Agency and Bacton Gas Terminal Operators.

6.2 Limitations and recommendations

There are several limitations with the analysis presented in this study which would need further consideration at PAR stage. Each of which will be outlined below:

1. **Tourism benefits**- tourism benefits have not been captured in this assessment (for the limitations previously suggested within the 2013 study) hence the benefits are likely to have been underestimated. Further detailed studies into tourism benefits would be beneficial to support more detailed economic assessments at the Scheme stage.



- 2. Underestimates of erosion under "Do Nothing" with SCAPE model- The results from the SCAPE model have been used to calculate erosion for the economic assessment. Although the SCAPE model is advantageous in allowing a holistic approach to assessing erosion over the coastline, this large scale approach is at a more broad scale than the economic assessment, which is split into the SMP6 units. This means that the Do Nothing Baseline which has been used as a baseline for the economics is the Do Nothing Baseline for the whole coastline. Therefore at Bacton, Walcott and Ostend more properties appear to be eroded under the SMP6 Scenario compared to the Do Nothing Baseline. It is important to note that this does not suggest a Do Nothing Baseline is more beneficial, this would be only true if it was implemented over the entire coastline. At a Policy Unit scale, the Do Nothing Baseline (under the assumption that the SMP6 Scenario is implemented in all other Policy Units) would show even greater rates of erosion. However, at a PAR stage, for the purposes of the economic assessment, the Do Nothing baseline would be taken for the specific Policy Unit only and therefore results from the economic assessment would be less conservative.
- 3. Properties based on average values- The previous Strategy (2004) undertook a detailed property valuation as part of the economic assessment at the time. However since then the increase in housing demand and general trend for house price increases has meant that the value of individual properties has increased. The benefits from residential properties have been estimated here based on a regional increase in property values by 1.3%. However individual properties may have changed significantly more than this and it would be recommended that a more detailed survey of property values should be undertaken at PAR stage.



Appendix A: Economic Spreadsheets

FCRM spreadsheets (0-20 years for Bacton)

FCRM spreadsheets (0-20 years for Walcott and Ostend)

FCRM spreadsheets (20-100 years for Bacton)

FCRM spreadsheets (20-100 years for Walcott and Ostend)

FCRM spreadsheets (sensitivity tests for Bacton)

FCRM spreadsheets (sensitivity tests for Walcott and Ostend)

Partnership Funding spreadsheets

FCRM spreadsheets (0-20 years for Bacton)

FCDPAG3 Summary

Client/Authority	<u>Proje</u>	ct Summary		Propared (data)	22/05/2014	
North Norfolk District Council				Prepared (date) Printed	11/07/2014	
Project name				Prepared by	L Wiggins	
Bacton, Walcott and Ostend Coastal Management Study				Checked by	S Hampshire	
Project reference Base date for estimates (year 0)		Apr-2014		Checked date	02/07/2014	
Scaling factor (e.g. £m, £k, £)		£	(used for all costs,	losses and benefit	ts)	
Year		0	30	75		
Discount Rate Optimism bias adjustment factor		3.5% 60%	3.00%	2.50%		
Costs and benefits of options		60%				***************************************
			Costs an	d benefits £		
Option number	Option 1	Option 2a	Option 3a	Option 4a	Option 5a	
		Do-nothing until	Capital			
			Maintenance and	Capital Works -	Capital Works -	
Option name AEP or SoP (where relevant)	Do-nothing	emergency works	patch repair	typical works	Intense	
COSTS:						
PV capital costs	0	0	0	590,319	1,867,665	
PV operation and maintenance costs	0		536,540	0		
PV other Optimism bias adjustment	0	, -	321,924	0 354,192	·	
PV negative costs (e.g. sales)	0	0	021,021	001,102	0	
PV contributions						
Total PV Costs £ excluding contributions Total PV Costs £ taking contributions into account	0	,	858,464 858,464	944,511 944,511	2,988,265 2,988,265	
BENEFITS:		+50,515	000,404	J44,511	2,300,200	
PV monetised flood damages	0		0	0		
PV monetised flood damages avoided PV monetised erosion damages	1,260,307	0	0	0	0	
PV monetised erosion damages PV monetised erosion damages avoided (protected)	1,200,307	1,260,307	1,260,307	1,260,307	1,260,307	
Total monetised PV damages £	1,260,307	0	0	0	0	
Total monetised PV benefits £		1,260,307	1,260,307	1,260,307	1,260,307	
PV damages (from tourism) PV damages avoided/benefits (from tourism)						
PV benefits from ecosystem services						
Total PV damages £	1,260,307		0	0	U	
Total PV benefits £ DECISION-MAKING CRITERIA:		1,260,307	1,260,307	1,260,307	1,260,307	
excluding contributions						
Based on total PV benefits (in cludes benefits from scoring and	weighting and e			045.700	4 707 057	
Net Present Value NPV Average benefit/cost ratio BCR		803,992 2.8	401,843 1.5	315,796 1.3		
Incremental benefit/cost ratio IBCR		2.0	0.0	0.0		
		Highest bcr				
Based on monetised PV benefits (ex cludes benefits from scori	na and weighting	and accevetem	earvicas)			
Net Present Value NPV	Ing and weighting	803,992	401,843	315,796	-1,727,957	
Average benefit/cost ratio BCR		2.8	1.5	1.3	0.4	
Incremental benefit/cost ratio IBCR		l limboot bou	0.0	0.0	0.0	
		Highest bcr				
including contributions						
Taking account of contributions (in cludes benefits from scorin Net Present Value NPV	g and weighting a	and ecosystem se 803,992		315,796	1 707 057	
Average benefit/cost ratio BCR		2.8	401,843 1.5	1.3		
Incremental benefit/cost ratio IBCR			0.0	0.0		
		Highest bcr				
Based on monetised PV benefits (ex cludes benefits from scori	ng and weighting	and ecosystem s	services)			
Net Present Value NPV		803,992	401,843	315,796	-1,727,957	
Average benefit/cost ratio BCR		2.8	1.5	1.3	0.4	
Incremental benefit/cost ratio IBCR		Highest bcr	-	-	-	
Best practicable environmental option (WFD)						
Brief description of options:						***************************************
Option 1	Do-nothing					
Option 2a		ilure event and em				
Option 3a Option 4a	Capital Maintenan Capital Works - ty	ce and patch repai	<u> </u>		***************************************	
Option 5a	Capital Works - In					***************************************
						•

FCDPAG3

	<u>Ero</u>	sion Loss Calcu	lation Shee		Sheet N				
Client/Authority North Norfolk Distric	t Council								
Project name			Option:			Delay (yrs)		d (date	22/05/2014
Project reference	l Ostend Coastal Management Study		Option 2a Option 3a			20	Printed Prepare	d by	11/07/2014 L Wiggins
Base date for estir	mates (year 0)	Apr-2014	Option 4a			20	Checke	d by	S Hampshire
Scaling factor (e.g Discount rate	. εm, εκ, ε)	£ 3.5%					Checke	d date	41822
						F			losses £
					Do-nothing	Do-	Capita		losses £
					_	nothing	. i	al	
						until failure	Mainte nance	Work s -	
			Year when the asset is			event and	and	typic	
		Risk free market	expected to			emergenc y works	patch repair	al work	
Ref 143	,0,ASH COTTAGE,BEACH ROAD,BACTON	value	be lost	Prob of 0.1	10,137.79	,			
43	,0,CABLE COTTAGE,BEACH ROAD,BACTON	120405 97471	5	0.1	8,206.78				
43	,0,CRANKS CASTLE,MILL LANE,BACTON	45869	5	0.1	3,862.02				
177	,0,HERMITAGE,BEACH ROAD,BACTON	252,278	5	0.1	21,241.09				
177	.0.MORSE HOUSE BEACH ROAD BACTON	126,139	5	0.1	10,620.55				
177 121	,0,SEA EDGE,BEACH ROAD,BACTON ,0,SEABRINK,BEACH ROAD,BACTON	200675 149073	5	0.1	16,896.32 12,551.55				
121	,0,ST. OLAFS,BEACH ROAD,BACTON	120405	5	0.1	10,137.79				
121	,0,THE LEAS,MILL LANE,BACTON	74,537	5	0.1	6,275.78				
117	,6, ,NEWLANDS ESTATE,BACTON	80,270	5	0.1	6,758.53				
117	,7, ,NEWLANDS ESTATE,BACTON	74,537	5	0.1	6,275.78				
117 144	,76, ,NEWLANDS ESTATE,BACTON	80,270 80,270	5	0.1	6,758.53 6,758.53				
144	,77, NEWLANDS ESTATE,BACTON ,78, NEWLANDS ESTATE,BACTON	80,270	5 5	0.1	6,758.53				
144	,79, ,NEWLANDS ESTATE,BACTON	80,270	5	0.1	6,758.53				
184	THE LEAS BEACH PARK,0, ,MILL LANE,BACTON	143,340	5	0.1	12,068.80				
184	,0,ASH COTTAGE,BEACH ROAD,BACTON	120,406	10	0.8	68,286.57				
184	,0,CABLE COTTAGE,BEACH ROAD,BACTON	97,471	10	0.8	55,279.14				
142	,0,CRANKS CASTLE,MILL LANE,BACTON	45869	10	8.0	26,013.71				
142	,0,HERMITAGE,BEACH ROAD,BACTON	252278	10	0.8	143,075.42				
142	,0,MORSE HOUSE,BEACH ROAD,BACTON		10	0.8	71,537.71				
57	.0.SEA EDGE.BEACH ROAD.BACTON	126139 200.675	10	0.8	113.810.00				
57	,0,SEABRINK,BEACH ROAD,BACTON	149,073	10	0.8	84,544.57				
57	,0,ST. OLAFS,BEACH ROAD,BACTON	100105	10	0.8	68,286.00				
72	,0,THE LEAS,MILL LANE,BACTON	120405 74537	10	0.8	42,272.28				
72	,6, ,NEWLANDS ESTATE,BACTON		10	0.8	45,524.00				
72	,7, ,NEWLANDS ESTATE,BACTON	80270 74,537	10	0.8	42,272.28				
113	,76, ,NEWLANDS ESTATE,BACTON	80,270	10	8.0	45,524.00				
113	THE LEAS BEACH PARK,0, ,MILL LANE,BACTON		10	0.8	81,292.85				
113	,0,ASH COTTAGE,BEACH ROAD,BACTON	143340 120405	15	0.1	7 186 87				
114	,0,CABLE COTTAGE,BEACH ROAD,BACTON	97471	15	0.1	5,817.94				
114	,0,CRANKS CASTLE,MILL LANE,BACTON	45869	15	0.1	2,737.86				
114	,0,HERMITAGE,BEACH ROAD,BACTON	252278	15	0.1	15,058.21				
124	,0,MORSE HOUSE,BEACH ROAD,BACTON	126139	15	0.1	7,529.10				
124	,0,SEA EDGE,BEACH ROAD,BACTON	200675	15	0.1	11,978.12				
124	,0,SEABRINK,BEACH ROAD,BACTON		15	0.1	8,898.03				
31	,0,ST. OLAFS,BEACH ROAD,BACTON	149073	15	0.1	7,186.87				
	,0,THE LEAS,MILL LANE,BACTON	120405	15	0.1	4.449.02				
51 	,0, THE LEAS, MILL LANE, BACTON .6, NEWLANDS ESTATE, BACTON	74537	15	0.1	4,449.02				
		80270			7				
66	,7, ,NEWLANDS ESTATE,BACTON	74537	15	0.1	4,449.02				
66	,76, ,NEWLANDS ESTATE,BACTON	80270	15	0.1	4,791.25				
66	,77, ,NEWLANDS ESTATE,BACTON	80270	15	0.8	38,329.99				
7	,78, ,NEWLANDS ESTATE,BACTON	80270	15	0.8	38,329.99				
7	,79, ,NEWLANDS ESTATE,BACTON	80270	15	8.0	38,329.99				
77	THE LEAS BEACH PARK,0, ,MILL LANE,BACTON		15	0.1	8,555.80				
120	,77, ,NEWLANDS ESTATE,BACTON	143340	20	0.1	4 034 10				
		80270		***	1,00				
120	,78, ,NEWLANDS ESTATE,BACTON	80270	20	0.1	4,034.10				
20	,79, ,NEWLANDS ESTATE,BACTON	80270	20	0.1	4,034.10				

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 probality distribution is used
Equivalent annual value - MV x discount rate (assumes infinite lite)
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+1)*(Year of loss))) = MV * Prob of loss * /((1+1)*(Year of loss)))
Additional properties can be entered by inserting lines above line 62 and copying all formulae, including hidden calculation in column C

Client/Authorit	y istrict Council									Present Value Costs for	all options														
Project name	Walcott and Ost	end Coastal M	lanagement	Study							Option 1						Res	sults £	Or	otion 3		Option 4			Ontion
Base date for es Scaling factor (e Initial discount r	stimates (year 0) e.g. £m, £k, £)	Apr-2014 £ 3.5%								PV total costs	Do-nothing 0				Do-noth	ning until fail	ure event a 285,197	nd emergency works	Capital Maintena	nce and patch repair 36,540	Capital	Works - typical 590,319	works	Сар	pital Works 186766
	Option 1 Capital	Do-nothing Maint.	Other	Negative costs	TOTALS:	Capital Ma	aint	PV PV Negar Other costs		Option 2 Do-nothing until failure event a Capital Maint. Other	Negative costs	Cash	PV Capital	P\ Ma	/ PV aint Other		PV Negative costs	Option 3 Capital	Maint. Other	nce and patch repair Negative costs	TOTALS: Cash	PV Capital	Maint	Ne Other co	PV Negative costs
cash su Discou	ınt	0	0 (0 0	0.0	0.00	0.00	0.00	0.00	0 - 456166.6667		456,1	167 -		-	285196.62	0.00	-	713130.704	0	0 713,131	-	536,540	0.00	0.00
year Fact 0 1.0 1 0.9	00	1		_	0.0	0 0.00	0.00		0.00	4562		A F	- 0 562 0	.00	-	0.00 4407.41	0.00)	237,710		237,710	1	0.00 229672	0.00	0.00
2 0.9	34			-	0.0	0.00	0.00	0.00	0.00	4562 4562 4562		4,5	62 0	.00	-	4258.36 4114.36	0.00		237,710		-	-	0	0.00	0.00
4 0.8 5 0.8	71				0.00	0.00	0.00	0.00	0.00	4562 4562 9123		4,5	562 0	.00	-	3975.23 7681.60	0.00				-	-	0	0.00	0.00
6 7 0.8	14				0.00	0.00	0.00	0.00	0.00	9123 9123		9,1	123 0	.00	-	7421.84 7170.86	0.00						0	0.00	0.00 0.00 0.00
8 0.7 9 0.7	59				0.00	0.00	0.00	0.00	0.00	22808 22808		22,8 22,8		.00	-	17320.91 16735.18	0.00		237,710		237,710	-	174415	0.00	0.00
10 0.7 11 0.6	09				0.00	0.00	0.00	0.00	0.00	22808 22808 22808		22,8	308 0	.00	-	16169.26 15622.47	0.00		237,710		-	-	0	0.00	0.00
12 0.6 13 0.6	62			-	0.0	0.00	0.00	0.00	0.00	22808 22808 22808		22,8	308 0	.00		15094.17 14583.74	0.00		<u> </u>		-	-	0	0.00	0.00
14 0.6 15 0.5	18	 		†	0.0	0.00	0.00	0.00	0.00	22808 22808 22808		22,8	308 0	.00		14090.57 13614.08	0.00				-		0	0.00	0.00 0.00 0.00
16 0.5 17 0.5	77	 		ļ	0.0	0.00	0.00	0.00	0.00	45617 45617		45,6 45,6	617 0	.00	-	26307.40 25417.78	0.00		237,710		237,710	-	132453	0.00	0.00
18 0.5 19 0.5	38	1			0.0	0.00	0.00	0.00	0.00	45617 45617 45617		45,6 45,6	617 0	.00	-	24558.24 23727.77	0.00)			-	-	0.00	0.00	0.00
20 0.5	03	-		-	0.0	0.00	0.00	0.00	0.00	45617		45,6		.00	-	22925.38 0.00	0.00				-	-	0.00	0.00	0.00
22 0.4 23 0.4	69	-		ļ	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
24 0.4 25 0.4	38	-			0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
26 0.4 27 0.3	09	-			0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00)			-	-	0.00	0.00	0.00 0.00 0.00
28 0.3 29 0.3	82				0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
30 0.3 31 0.3	56				0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
32 0.3 33 0.3	36				0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00		0.00 0.00
34 0.3 35 0.3	17	-		ļ	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00 0.00 0.00
36 0.2 37 0.2	98	 		 	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
38 0.2 39 0.2	81			-	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
40 0.2 41 0.2	65			 	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
42 0.2 43 0.2	50			ļ	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
44 0.2 45 0.2	36			-	0.00	0.00	0.00	0.00	0.00				- 0	.00	-	0.00					-	-	0.00	0.00	0.00
46 0.2 47 0.2	22				0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00 0.00 0.00
48 49 0.2	09			 	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
50 0.1 51 0.1	97				0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
52 0.1 53 0.1	86			-	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00 0.00 0.00
54 0.1 55 0.1	75			ļ	0.0	0.00	0.00	0.00	0.00				- 0	.00		0.00	0.00				-	-	0.00	0.00	0.00
56 0.1 57 0.1	65	-		ļ	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
58 0.1 59 0.1	56			ļ	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
60 0.1 61 0.1	47			ļ	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
62 0.1 63 0.1	38				0.0	0.00	0.00 0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
64 0.1 65 0.1	30	-		-	0.00	0 0.00 0 0.00 0 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00				- 0 - 0	.00	-	0.00 0.00 0.00	0.00 0.00 0.00				-		0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
66 0.1 67 0.1	23	-		-	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
68 0.1 69 0.1	16	-		-	0.0	0.00	0.00 0.00 0.00	0.00	0.00				- 0 - 0	.00	-	0.00	0.00				-	-	0.00 0.00 0.00	0.00 0.00	0.00 0.00 0.00
70 0.1 71 0.1	09	-			0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
72 0.1 73 0.1	03	-			0.0 0.0 0.0	0 0.00 0 0.00 0 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00				- 0 - 0	.00	-	0.00 0.00 0.00	0.00				-	-	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
74 0.0 75 0.0	97 94	-		-	0.0	0.00	0.00	0.00	0.00 0.00 0.00				- 0 - 0	.00	-	0.00	0.00)			-	-	0.00	0.00 0.00	0.00
76 0.0 77 0.0	92	-			0.0	0.00	0.00 0.00 0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00 0.00 0.00 0.00 0.00 0.00
78 0.0 79 0.0	87				0.0 0.0 0.0	0 0.00 0 0.00 0 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00				- 0 - 0	.00	-	0.00 0.00 0.00	0.00 0.00 0.00				-	-	0.00 0.00 0.00	0.00 0.00 0.00	0.00
80 0.0 81 0.0	83				0.0 0.0 0.0	0 0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00 0.00 0.00	0.00 0.00 0.00	0.00
82 0.0 83 0.0	79			-	0.0	0 0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
84 0.0 85 0.0	75				0.0 0.0 0.0	0 0.00 0 0.00 0 0.00	0.00 0.00 0.00	0.00	0.00				- 0	.00	-	0.00 0.00 0.00	0.00				-	-	0.00	0.00 0.00 0.00	0.00
86 0.0 87 0.0	72 70	+			0.0	0 0.00	0.00	0.00	0.00 0.00 0.00				- 0 - 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
88 0.0 89 0.0	68	-		-	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
90 0.0	65			-	0.0 0.0 0.0		0.00 0.00 0.00	0.00	0.00 0.00 0.00				- 0 - n	.00	-	0.00 0.00 0.00					-	-	0.00	0.00 0.00 0.00	0.00
92 93 0.0	62	+		 	0.0	0.00	0.00 0.00 0.00	0.00	0.00 0.00 0.00				- 0	.00	-	0.00	0.00				-		0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
94 0.0 95 0.0	59	+		-	0.0	0.00	0.00	0.00	0.00				- 0 - 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00 0.00 0.00
96 0.0 97 0.0	56			-	0.0	0.00	0.00	0.00	0.00				- 0	.00	-	0.00	0.00				-	-	0.00	0.00	0.00
98 99 0.0	53	-		-	0.0 0.0 0.0	0.00	0.00 0.00 0.00	0.00	0.00				- 0 - 0	.00	-	0.00 0.00 0.00	0.00				-	-	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
																								ضحم	

	Sheet Nr.	10														
	Prepared (da Printed Prepared by Checked by Checked date			22/05/2014 11/07/2014 L Wiggins S Hampshire 02/07/2014	-											
Option 4	Capital	Works - typic	al works Negative	TOTALS:	PV	PV	PV	PV Negative	Option 5a	Capital Works -	Intense Negative	TOTALS:	PV	PV	PV	PV Negative
Capital 610,981		Other	costs	Cash 610,981	Capital 590,319	Maint -	Other 0.0	costs	Capital 1,933,034	Maint. Other	costs	Cash 1,933,034	Capital 1,867,665	Maint 0.	Other 0.00	costs
610,981				610,981	590,319	0.00 0.00	0.0	0.00	1,933,034			1,933,034	1,867,665	0.		0.00
				-		0.00	0.0	0.00				-	-	0.		0.00
				-		0.00	0.0	0.00				-	-	0.	0.00	0.00
				-		0.00 0.00 0.00	0.0	0.00				-	-	0.		0.00
				-		0.00	0.0	0.00				-	-	0.	0.00	0.00
					-	0.00	0.0	0.00				-		0.	0.00	0.00
					-	0.00	0.0	0.00				-	-	0.	0.00	0.00
				-		0.00	0.0	0.00				-	-	0.	0.00	0.00
				-	-	0.00	0.0	0.00				-	-	0.	0.00	0.00
				-		0.00 0.00 0.00	0.0	0.00				-	-	0. 0.	0.00	0.00
						0.00	0.0	0.00					-	0.	0.00	0.00
				-		0.00	0.0	0.00				=	-	0.	0.00	0.00
				-	-	0.00	0.0	0.00				-	-	0.	0.00	0.00
				-	-	0.00 0.00	0.0	0.00				-	-		0.00	0.00
				-		0.00 0.00	0.0	0.00				-	-	0.	0.00	0.00
				-	-	0.00	0.0	0.00				-	-	0.	0.00	0.00
				-	-	0.00	0.0	0.00					-	0. 0.	0.00	0.00
						0.00 0.00 0.00	0.0	0.00				-	-	0.	0.00	0.00
				-	-	0.00	0.0	0.00				=	-	0.	0.00	0.00
				-	-	0.00	0.0	0.00				-	-	0.	0.00	0.00
				-	-	0.00	0.0	0.00				-	-	0.	0.00	0.00
				-		0.00	0.0	0.00				-	-	0.	0.00	0.00
				-		0.00 0.00 0.00	0.0	0.00						0. 0.	0.00	0.00
				-		0.00	0.0	0.00				-	-	0.	0.00	0.00
				-	-	0.00	0.0	0.00				-	-	0.	0.00	0.00
				-		0.00 0.00	0.0	0.00				-	-	0.	0.00	0.00
				-	-	0.00	0.0	0.00				-	-	0.		0.00
				-		0.00 0.00 0.00	0.0	0.00					-	0.	0.00	0.00
				-	-	0.00	0.0	0.00					-		0.00	0.00
						0.00	0.0	0.00				-		0.	0.00	0.00
				-	-	0.00 0.00	0.0	0.00				-	-	0. 0.	0.00	0.00
						0.00	0.0	0.00				-	-	0. 0.	0.00	0.00
				-	-	0.00	0.0	0.00				-	-	0.	0.00	0.00
				-		0.00 0.00 0.00	0.0	0.00				-	-	0. 0.	0.00	0.00
						0.00	0.0	0.00					-	0.	0.00	0.00
					-	0.00	0.0	0.00				-	-	0.	0.00	0.00
				-	-	0.00 0.00	0.0	0.00				-	-	0. 0.	0.00	0.00
				-		0.00	0.0	0.00				-	-	0.		0.00
						0.00	0.0	0.00				-	-		0.00	0.00
				-		0.00 0.00 0.00	0.0	0.00					-	0. 0.		0.00
				-	-	0.00	0.0	0.00				-		0.	0.00	0.00
				-	-	0.00 0.00	0.0	0.00				-	-	0. 0.	0.00	0.00
				-		0.00	0.0	0.00					-	0.	0.00	0.00
				-		0.00	0.0	0.00				-	-	0.	0.00	0.00
				-		0.00 0.00 0.00	0.0	0.00				-	-	0. 0. 0.	0.00	0.00
				-		0.00	0.0	0.00					-		0.00	0.00
						0.00	0.00	0.00	1				1	0.	0.00	0.00



FCRM spreadsheets (0-20 years for Walcott and Ostend)

FCDPAG3 Summary

OIL WALL II	<u>Proje</u>	ct Summary		D 1/11	00/05/004 4	
Client/Authority North Norfolk District Council				Prepared (date) Printed	22/05/2014 11/07/2014	
Project name				Prepared by	L Wiggins	
Bacton, Walcott and Ostend Coastal Management Study				Checked by	S Hampshire	
Project reference		340681		Checked date	02/07/2014	
Base date for estimates (year 0)		Apr-2014	· /	land and land the	- \	
Scaling factor (e.g. £m, £k, £) Year		£	(used for all costs, 30	losses and benefits	S)	
Discount Rate		3.5%	3.00%	2.50%		
Optimism bias adjustment factor		60%				
Costs and benefits of options						
Option number	Option 1	Option 2a	Costs a Option 3a	nd benefits £ Option 4a	Option 5a	
Option number	Option 1	Option 2a	Орион за	Орион ча	Орноп за	
		Do-nothing until	Capital			
			Maintenance and	Capital Works -	Capital Works -	
Option name AEP or SoP (where relevant)	Do-nothing	emergency works	patch repair	typical	Intense	
COSTS:						
PV capital costs	0		0	1,205,442	3,813,804	
PV operation and maintenance costs	0		997,762	0	0	
PV other Optimism bias adjustment	0		598,657	723,265	2,288,282	
PV negative costs (e.g. sales)	0		0	0	0	
PV contributions						
Total PV Costs £ excluding contributions	0		1,596,419	1,928,707	6,102,086	
Total PV Costs £ taking contributions into account BENEFITS:	0	931,802	1,596,419	1,928,707	6,102,086	
PV monetised flood damages	5,082,308	0	0	0		
PV monetised flood damages avoided		5,082,308	5,082,308	5,082,308	5,082,308	
PV monetised erosion damages	6,545,521			0		
PV monetised erosion damages avoided (protected) Total monetised PV damages £	11,627,829	6,545,521	6,545,521	6,545,521	6,545,521 0	
Total monetised PV damages £	11,027,029	11,627,829	11,627,829	11,627,829	11,627,829	
PV damages (from tourism)		,,.	,,,,,,,,,	, ,	,,	
PV damages avoided/benefits (from tourism)						
PV benefits from ecosystem services Total PV damages £	11,627,829	0	0	0	0	
Total PV benefits £	11,027,020	11,627,829	v	11,627,829	11,627,829	
DECISION-MAKING CRITERIA:		, ,	, ,	, ,	, ,	
excluding contributions			,			
Based on total PV benefits (in cludes benefits from scoring and Net Present Value NPV	weighting and ed	10,696,027	10,031,410	9,699,122	5,525,743	
Average benefit/cost ratio BCR		12.5	7.3	6.0	1.9	
Incremental benefit/cost ratio IBCR			0.0	0.0	0.0	
		Highest bcr				
Based on monetised PV benefits (ex cludes benefits from scori	ng and waighting	and opposestom	convious)			
Net Present Value NPV	ng and weighting	10,696,027	10,031,410	9,699,122	5,525,743	
Average benefit/cost ratio BCR		12.5	7.3	6.0	1.9	
Incremental benefit/cost ratio IBCR			0.0	0.0	0.0	
		Highest bcr				
including contributions						
Taking account of contributions (in cludes benefits from scorin	g and weighting a					
Net Present Value NPV		10,696,027	10,031,410	9,699,122	5,525,743	
Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR		12.5	7.3 0.0	6.0 0.0	1.9	
incremental benefit/cost ratio ibch		Highest bcr	0.0	0.0	0.0	
		_				
Based on monetised PV benefits (ex cludes benefits from scori	ng and weighting			0.000.400	F F0F 740	
Net Present Value NPV Average benefit/cost ratio BCR		10,696,027 12.5	10,031,410 7.3	9,699,122 6.0	5,525,743 1.9	
Incremental benefit/cost ratio IBCR		12.0	-	-	-	
		Highest bcr				
Best practicable environmental option (WFD)		l		I		
Dest practicable environmental option (WTD)						
Brief description of options:						
Option 1	Do-nothing					
Option 2a		ailure event and em ce and patch repai				
Option 3a Option 4a	Capital Works - ty		[
Option 5a	Capital Works - In					
						h

FCDPAG3 Erosion

Client/Authority	<u> </u>	rosion Loss Calcu	ation Shee	t with dela	y options		Sheet Nr.	2	
Client/Authority North Norfolk Dist	rict Council								
Project name			Option:			Delay (yrs)	Prepared (date)		22/05/2014
Bacton, Walcott a	nd Ostend Coastal Management Study		Option 2a			100	Printed		11/07/2014
Project reference Base date for es	e timates (vear 0)	Apr-2014	Option 3a Option 4a			100 100	Prepared by Checked by		S Hampshir V Tonks
Scaling factor (e	an Cm Ck C)	Apr-2014 £	Option 5a			100	Checked date		41822
Discount rate	.g. 211, 21, 27	3.5%	Орионоц			100	Oriconco dato		41022
						Expec	ted value of asset I	osses £	
					Do-nothing	Do-nothing	Capital	Capital Works	
			Year when			until failure	Maintenance and	- typical	
			the asset is			event and	patch repair		
Ref	Asset	Risk free market value	expected to be lost	Prob of		emergency			
31	.0.1 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	5	0.1	5,793.02	works			
i1	.0,1 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	10	0.8	39,020.57				
1	,0,1 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	15	0.1	4,106.78				
9	,8, ,OSTEND ROAD,WALCOTT	63,069	5	0.1	5,310.27				
9	.8, OSTEND ROAD, WALCOTT	63,069	10	0.8	35,768.86				
9	8, OSTEND ROAD, WALCOTT ,0,1 THE MOORLANDS, COAST ROAD, WALCOTT	63,069 103,204	15 5	0.1 0.1	3,764.55 8,689.54				
0	,0,1 THE MOORLANDS,COAST ROAD,WALCOTT	103,204	10	0.8	58.530.86			<u> </u>	
0	,0,1 THE MOORLANDS,COAST ROAD,WALCOTT	103,204	15	0.1	6,160.18				
1	,0,2 THE MOORLANDS,COAST ROAD,WALCOTT	103,204	5	0.1	8,689.54				
1	.0.2 THE MOORLANDS, COAST ROAD, WALCOTT	103,204	10	0.8	58,530.86				
3	,0,2 THE MOORLANDS,COAST ROAD,WALCOTT ,31, ,SEA VIEW ESTATE,BACTON	103,204 29,815	15 5	0.1	6,160.18 2,510.31				
3	31, SEA VIEW ESTATE, BACTON	29,815	10	0.8	16,908.91				
'3	,31, ,SEA VIEW ESTATE,BACTON	29,815	15	0.1	1,779.61				
5	.0.SEAGOATS,THE CRESCENT,WALCOTT	149,073	5	0.1	12,551.55				
5	,0,SEAGOATS,THE CRESCENT,WALCOTT	149,073	10	0.8	84.544.57				
75 94	,0,SEAGOATS,THE CRESCENT,WALCOTT ,1, ,HORIZON VIEWS,WALCOTT	149,073 97,471	15	0.1	8,898.03 8,206.78				
14 14	.1. HORZON VIEWS WALCOTT	97,471	5 10	0.8	55.279.14		1		
4	.1. HORZON VIEWS, WALCOTT	97,471	20	0.1	4,898.55			1	
8	,0,GAP END,ST. HELENS ROAD,WALCOTT	97,471	5	0.1	8,206.78				
8	,0,GAP END,ST. HELENS ROAD,WALCOTT	97,471	10	0.8	55,279.14				
8	,0,GAP END,ST. HELENS ROAD,WALCOTT	97,471	15	0.1	5,817.94				
05	7, OSTEND PLACE WALCOTT	137,606	5	0.1	11,586.05				
05 05	.7. OSTEND PLACE WALCOTT .7. OSTEND PLACE WALCOTT	137,606 137,606	10 15	0.8 0.1	78.041.14 8.213.57				
06	,0,6 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	5	0.1	8,213.57 5,793.02				
06	,0,6 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	10	0.8	39,020.57				
06	.0.6 SPINDRIFT, SEAVIEW CRESCENT, WALCOTT	68,803	15	0.1	4,106.78			ļ	
07	.0.JANTON,OSTEND GAP,WALCOTT	149,073	5	0.1	12,551.55				
07 07	,0,JANTON,OSTEND GAP,WALCOTT ,0,JANTON,OSTEND GAP,WALCOTT	149,073 149,073	10 15	0.8 0.1	84,544.57 8,898.03				
108	,9, ,THE CRESCENT,WALCOTT	80,270	5	0.1	6,758.53				
08	,9, ,THE CRESCENT,WALCOTT	80,270	10	0.8	45,524.00				
08	.9. THE CRESCENT, WALCOTT	80,270	15	0.1	4,791.25				
09	.5, .OSTEND PLACE,WALCOTT	137,606	55	0.1	11,586.05				
09	,5, ,OSTEND PLACE,WALCOTT 5, OSTEND PLACE,WALCOTT	137,606 137,606	10 15	0.8	78,041.14 8,213.57				
10	4, OSTEND PLACE, WALCOTT	63,069	5	0.1	5,310.27				
10	.4, .OSTEND ROAD,WALCOTT	63,069	10	0.8	35,768.86				
10	.4OSTEND ROAD.WALCOTT	63,069	15	0.1	3,764.55				
11	,0,1 MARYLAND,ARCHIBALD ROAD,WALCOTT	103,204	5	0.1	8,689.54				
11	,0,1 MARYLAND,ARCHIBALD ROAD,WALCOTT ,0,1 MARYLAND,ARCHIBALD ROAD,WALCOTT	103,204	10 15	0.8	58,530.86			ļ	
11 12	.0.HEYHOE,ARCHIBALD ROAD,WALCOTT	103,204 68,803	5	0.1 0.1	6,160.18 5,793.02				
12	,0,HEYHOE,ARCHIBALD ROAD,WALCOTT	68,803	10	0.8	39,020.57				
12	,0,HEYHOE,ARCHIBALD ROAD,WALCOTT	68,803	15	0.1	4,106.78				
15	,1, ,BEAUCOURT PLACE,WALCOTT	74,537	5	0.1	6,275.78				
15	.1, BEAUCOURT PLACE, WALCOTT .1, BEAUCOURT PLACE, WALCOTT	74,537	10	0.8	42,272.28 4,449.02				
15 16	.1, BEAUCOURT PLACE WALCOTT .4, OSTEND PLACE WALCOTT	74,537 137,606	15 5	0.1	4,449.02 11.586.05				
16	.4, .OSTEND PLACE,WALCOTT		10	0.8	78.041.14				
16	,4, ,OSTEND PLACE,WALCOTT	137,606 137,606	15	0.1	8,213.57				
18	,0,SUMMERHOLME,COAST ROAD,WALCOTT	91,737	5	0.1	7,724.03				
18	.0.SUMMERHOLME.COAST ROAD.WALCOTT	91,737	10	0.8	52,027.43		-		
18 19	0.SUMMERHOLME.COAST ROAD,WALCOTT POST OFFICE,0, ,COAST ROAD,WALCOTT	91,737 223,610	15 5	0.1	5,475.71 18,827.33				
19	POST OFFICE,0, COAST ROAD,WALCOTT	223,610	10	0.8	126,816.85				
19	POST OFFICE,0, ,COAST ROAD,WALCOTT	223,610	15	0.1	13,347.05				
22	,0,MYARD,WALCOTT ROAD,BACTON	74,537	5	0.1	6,275.78				
22	,0,MYARD,WALCOTT ROAD,BACTON	74,537	10	0.8	42,272.28				
22	,0,MYARD,WALCOTT ROAD,BACTON ,26, ,OSTEND PLACE,WALCOTT	74,537 126,139	15	0.1 0.1	4,449.02 10,620.55				
23 23	,26, ,OSTEND PLACE,WALCOTT	126,139	5 10	0.8	71,537.71				
23	,26, ,OSTEND PLACE,WALCOTT	126,139	15	0.1	7,529.10			1	
25	.6. OSTEND ROAD WALCOTT	63,069	5	0.1	5,310.27				
25	.6, .OSTEND ROAD,WALCOTT	63,069	10 15	0.8	35,768.86 3,764.55				
25	,6, ,OSTEND ROAD,WALCOTT	63,069		0.1	3,764.55				
26	,0,GENESIS,OSTEND GAP,WALCOTT	97,471	5	0.1	8,206.78 55.279.14				
26 26	.0.GENESIS.OSTEND GAP.WALCOTT .0.GENESIS.OSTEND GAP.WALCOTT	97,471 97,471	10 15	0.8 0.1	55,279.14 5,817.94				
27	.0.SEACLOSE.COAST ROAD.WALCOTT	68,803	5	0.1	5,793.02				
27	,0,SEACLOSE,COAST ROAD,WALCOTT	68,803	10	0.8	39,020.57				
27	,0,SEACLOSE,COAST ROAD,WALCOTT	68,803	15	0.1	4,106.78				
28	.0,2 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	5 10	0.1 0.8	5,793.02				

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128	,0,2 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803 15	0.1	4,106.78	
129 129	,0,SEA SPRAY,THE CRESCENT,WALCOTT ,0.SEA SPRAY,THE CRESCENT,WALCOTT	183,475 5 183,475 10	0.1 0.8	15,448.07 104,054.85	
129	.0,SEA SPRAY,THE CRESCENT,WALCOTT	183,475 15	0.1	10,951.42	
130 130	.0.SEA VIEW,COAST ROAD,WALCOTT	172,007 5	0.1	14.482.56	
130	,0,SEA VIEW,COAST ROAD,WALCOTT ,0,SEA VIEW,COAST ROAD,WALCOTT	172,007 10 172,007 15	0.8	97,551.43 10,266.96	
131	.3. ,OSTEND PLACE,WALCOTT	137,606 5	0.1	11.586.05	
131 131	.3. OSTEND PLACE, WALCOTT .3. OSTEND PLACE, WALCOTT	137,606 10 137,606 15	0.8 0.1	78,041.14 8,213.57	
132	,8, ,THE CRESCENT,WALCOTT	86,004 5	0.1	7,241.28	
132 132	,8, ,THE CRESCENT,WALCOTT .8, ,THE CRESCENT,WALCOTT	86,004 10 86,004 15	0.8 0.1	48,775.71 5,133.48	
133	,0,4 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803 5	0.1	5,793.02	
133	.0.4 SPINDRIFT.SEAVIEW CRESCENT.WALCOTT	68.803 10	0.8	39.020.57	
133 134	,0,4 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,0,THE RETREAT,ARCHIBALD ROAD,WALCOTT	68,803 15 63,069 5	0.1	4,106.78 5,310.27	
134	,0,THE RETREAT,ARCHIBALD ROAD,WALCOTT	63,069 10	0.8	35.768.86	
134 135	.0.THE RETREAT, ARCHIBALD ROAD, WALCOTT .0.SUNDIAL COTTAGE, WATCH HOUSE LANE, BACTON	63,069 15 86,004 5	0.1 0.1	3,764.55 7,241.28	
135	,0,SUNDIAL COTTAGE,WATCH HOUSE LANE,BACTON	86,004 10	0.8	48,775.71	
135 136	,0,SUNDIAL COTTAGE,WATCH HOUSE LANE,BACTON ,6, ANNE STANNARD WAY,BACTON	86,004 15 149,073 5	0.1 0.1	5,133.48 12,551.55	
136	6, ANNE STANNARD WAY,BACTON	149,073 10	0.8	84,544.57	
136	.6. ANNE STANNARD WAY,BACTON .7. ANNE STANNARD WAY,BACTON	149,073 15 149,073 5	0.1 0.1	8,898.03 12,551.55	
137	,7, ,ANNE STANNARD WAY,BACTON	149,073 10	0.8	84,544.57	
137 138	7. ANNE STANNARD WAY BACTON	149.073 15	0.1	8.898.03	
138	.8, ANNE STANNARD WAY,BACTON .8, ANNE STANNARD WAY,BACTON	149,073 5 149,073 10	0.1	12,551.55 84,544.57	 ***************************************
138	,8, ANNE STANNARD WAY,BACTON	149,073 15	0.1	8,898.03	
139 139	,9, ANNE STANNARD WAY,BACTON ,9, ANNE STANNARD WAY,BACTON	149,073 5 149,073 10	0.1 0.8	12,551.55 84,544.57	
139	,9, ANNE STANNARD WAY,BACTON	149,073 15	0.1	8,898.03	
140 140	.10, ANNE STANNARD WAY,BACTON .10, ANNE STANNARD WAY,BACTON	149,073 5 149,073 10	0.1 0.8	12,551.55 84,544.57	
140	,10, ,ANNE STANNARD WAY,BACTON	149,073 15	0.1	8,898.03	
141	,0.2 MARYLAND,ARCHIBALD ROAD,WALCOTT .0.2 MARYLAND,ARCHIBALD ROAD,WALCOTT	103,204 5 103,204 10	0.1 0.8	8,689.54 58,530.86	 ***************************************
141	.0.2 MARYLAND,ARCHIBALD ROAD,WALCOTT	103,204 15	0.1	6,160.18	
145 145	,7, ,OSTEND ROAD,WALCOTT ,7, ,OSTEND ROAD,WALCOTT	63,069 5 63,069 10	0.1	5,310.27 35,768.86	
145	.7, ,OSTEND ROAD,WALCOTT	63,069 15	0.8	3,764.55	
146	,0,MORNING MIST,THE CRESCENT,WALCOTT	74,537 5	0.1	6,275.78	
146 146	.0.MORNING MIST,THE CRESCENT,WALCOTT .0.MORNING MIST,THE CRESCENT,WALCOTT	74,537 10 74,537 15	0.8 0.1	42,272.28 4,449.02	
147	,0,GOLDEN SANDS,OSTEND ROAD,WALCOTT	74,537 5	0.1	6,275.78 42,272.28	
147 147	.0.GOLDEN SANDS,OSTEND ROAD,WALCOTT .0.GOLDEN SANDS,OSTEND ROAD,WALCOTT	74,537 10 74,537 15	0.8	4,449.02	
148	KINGFISHER CAFE,0, COAST ROAD,WALCOTT	223,610 5	0.1	18,827.33	
148 148	KNGFISHER CAFE,0, COAST ROAD,WALCOTT KNGFISHER CAFE,0, COAST ROAD,WALCOTT	223,610 10 223,610 15	0.8 0.1	126,816.85 13,347.05	
149	,34, ,SEA VIEW ESTATE,BACTON	29,815 5	0.1	2,510.31	
149 149	.34, .SEA VIEW ESTATE,BACTON .34, .SEA VIEW ESTATE,BACTON	29,815 10 29,815 15	0.8 0.1	16,908.91 1,779.61	
150	,5, ,OSTEND ROAD,WALCOTT	63,069 5	0.1	5,310.27	
150 150	.5, OSTEND ROAD,WALCOTT .5, OSTEND ROAD,WALCOTT	63,069 10 63,069 15	0.8 0.1	35,768.86 3,764.55	
151	2, OSTEND PLACE WALCOTT	137,606 5	0.1	11.586.05	
151	2. OSTEND PLACE, WALCOTT 2. OSTEND PLACE, WALCOTT	137,606 10	0.8	78,041.14	
151 152	,0,CALM SEAS,OSTEND ROAD,WALCOTT	137,606 15 80,270 5	0.1 0.1	8,213.57 6,758.53	
152 152	,0,CALM SEAS,OSTEND ROAD,WALCOTT 0,CALM SEAS,OSTEND ROAD,WALCOTT	80,270 10 80,270 15	0.8	45,524.00	_
153	.33, SEA VEW ESTATE BACTON	29.815 5	0.1	4,791.25 2,510.31	 ***************************************
153	.33, .SEA VIEW ESTATE.BACTON	29.815 10	0.8	16,908.91	
153 154	,33, SEA VIEW ESTATE, BACTON ,0,FISHERMANS COTTAGE, COAST ROAD, WALCOTT	29,815 15 34,401 5	0.1 0.1	1,779.61 2,896.51	
154	,0,FISHERMANS COTTAGE,COAST ROAD,WALCOTT	34,401 10	0.8	19,510.29	
154 155	0.FISHERMANS COTTAGE, COAST ROAD, WALCOTT 0.41 WALCOTT CARAVAN PARK, COAST ROAD, WALCOTT	34,401 15 114,672 5	0.1 0.1	2,053.39 9,655.04	
155	,0,41 WALCOTT CARAVAN PARK,COAST ROAD,WALCOTT	114,672 10	8.0	65,034.28	
155 156	,0,41 WALCOTT CARAVAN PARK,COAST ROAD,WALCOTT ,1, OSTEND PLACE,WALCOTT	114,672 15 137,606 5	0.1	6,844.64 11.586.05	
156	,1,,OSTEND PLACE,WALCOTT	137,606 10	0.8	78,041.14	
156 157	,1, OSTEND PLACE, WALCOTT ,0,TIGH-NA-MARA, WATCH HOUSE LANE, BACTON	137,606 15 160,540 5	0.1 0.1	8,213.57 13,517.06	
157	,0,TIGH-NA-MARA,WATCH HOUSE LANE,BACTON	160,540 10	0.8	91,048.00	
157	.0.TIGH-NA-MARA,WATCH HOUSE LANE BACTON	160,540 15	0.1	9.582.50	
158 158	,0,WYNDHAM,ARCHIBALD ROAD,WALCOTT ,0,WYNDHAM,ARCHIBALD ROAD,WALCOTT	80,270 5 80,270 10	0.1 0.8	6,758.53 45,524.00	-
158	,0,WYNDHAM,ARCHIBALD ROAD,WALCOTT ,0,CLIFF VIEW,ARCHIBALD ROAD,WALCOTT	80,270 15	0.1	4,791.25	
159 159	.0,CLIFF VIEW,ARCHIBALD ROAD,WALCOTT	91,737 5 91,737 10	0.1 0.8	7,724.03 52,027.43	
159	0.CLIFF VIEW, ARCHIBALD ROAD, WALCOTT	91,737 15	0.1	5,475.71	
160 160	.6, SEA VIEW ESTATE BACTON .6, SEA VIEW ESTATE BACTON	172,007 5 172,007 10	0.1 0.8	14,482.56 97,551.43	
160	,6, ,SEA VIEW ESTATE,BACTON	172,007 15	0.1	10,266.96	
161 161	.4. BEAUCOURT PLACE WALCOTT 4. BEAUCOURT PLACE WALCOTT	91,737 5 91,737 10	0.1 0.8	7,724.03 52.027.43	
161	.4. BEAUCOURT PLACE WALCOTT	91,737 15	0.1	5,475.71	
162 162	,6, ,BEAUCOURT PLACE,WALCOTT ,6, ,BEAUCOURT PLACE,WALCOTT	91,737 5 91,737 10	0.1 0.8	7,724.03 52,027.43	
162	.6. ,BEAUCOURT PLACE,WALCOTT	91,737 15	0.1	5,475.71	
163 163	.2. BEAUCOURT PLACE WALCOTT .2. BEAUCOURT PLACE WALCOTT	91,737 5 91,737 10	0.1 0.8	7,724.03 52,027.43	
163	,2, ,BEAUCOURT PLACE,WALCOTT	91,737 15	0.1	5,475.71	
164 164	.3, BEAUCOURT PLACE, WALCOTT .3, BEAUCOURT PLACE WALCOTT	91,737 5 91,737 10	0.1 0.8	7,724.03 52,027.43	
164	.3. BEAUCOURT PLACE, WALCOTT	91,737 15	0.1	5,475.71	
165 165	.5. BEAUCOURT PLACE WALCOTT ,5. BEAUCOURT PLACE WALCOTT	91,737 5 91,737 10	0.1 0.8	7,724.03	
165	,5, ,BEAUCOURT PLACE,WALCOTT	91,737 10	0.8	52,027.43 5,475.71	
166	,16, ,HORIZON VIEWS,WALCOTT	86,004 5	0.1	7,241.28	
166 166	.16, HORIZON VIEWS, WALCOTT .16, HORIZON VIEWS, WALCOTT	86,004 10 86,004 15	0.8 0.1	48,775.71 5,133.48	
167	,15, ,HORIZON VIEWS,WALCOTT	86,004 5	0.1	7,241.28	
167 167	,15, HORIZON VIEWS, WALCOTT ,15, HORIZON VIEWS, WALCOTT	86,004 10 86,004 15	0.8 0.1	48,775.71 5,133.48	
168	.13. HORIZON VIEWS WALCOTT	126,139 5	0.1	10,620.55	
168 168	.13, HORIZON VIEWS, WALCOTT .13, HORIZON VIEWS, WALCOTT	126,139 10 126,139 15	0.8 0.1	71.537.71 7,529.10	
169	,14, ,HORIZON VIEWS,WALCOTT	126,139 5	0.1	10,620.55	
169 169	,14, HORZON VIEWS WALCOTT	126,139 10 126,139 15	0.8	71,537.71 7,529.10	
170	.14. HORIZON VIEWS, WALCOTT .0.SPINDRIFT, THE CRESCENT, WALCOTT	74,537 5	0.1 0.1	6,275.78	
170 170	.0.SPINDRIFT,THE CRESCENT,WALCOTT .0.SPINDRIFT,THE CRESCENT,WALCOTT	74,537 10 74,537 15	0.8 0.1	42,272.28 4,449.02	
171	,0,5PINDRIFT,THE CHESCENT,WALCOTT ,0,THE FLINT HOUSE,OSTEND PLACE,WALCOTT	74,537 15 326,814 5	0.1	4,449.02 27,516.87	
171	,0,THE FLINT HOUSE,OSTEND PLACE,WALCOTT	326,814 10	0.8	185,347.71	
171 172	.0.THE FLINT HOUSE OSTEND PLACE WALCOTT .6. OSTEND PLACE WALCOTT	326,814 15 143,340 5	0.1 0.1	19.507.22 12,068.80	
172	,6, ,OSTEND PLACE,WALCOTT	143,340 10	0.8	81,292.85	
172 173	,6, ,OSTEND PLACE,WALCOTT .0,BEACONS GLEAM,COAST ROAD,WALCOTT	143,340 15 74,537 5	0.1 0.1	8,555.80 6,275.78	
173	.0,BEACONS GLEAM,COAST ROAD,WALCOTT	74,537 10	8.0	42,272.28	
173	.0,BEACONS GLEAM,COAST ROAD,WALCOTT .0,LITTLE HOUSE,COAST ROAD,WALCOTT	74,537 15 57,336 5	0.1 0.1	4,449.02 4,827.52	
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174	,0,LITTLE HOUSE,COAST ROAD,WALCOTT	57,336	10	0.8	32,517.14			
174	,0,LITTLE HOUSE,COAST ROAD,WALCOTT	57,336	15	0.1	3,422.32			
175	,7, ,SEA VIEW ESTATE,BACTON	86,004	5	0.1	7,241.28			
175	,7, ,SEA VIEW ESTATE,BACTON	86,004	10	0.8	48,775.71			
175	,7, ,SEA VIEW ESTATE,BACTON	86,004	15	0.1	5,133.48			
176	.0.3 SPINDRIFT.SEAVIEW CRESCENT.WALCOTT	68.803	5	0.1	5.793.02			
176	,0,3 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	10	0.8	39,020.57			
176	,0,3 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	15	0.1	4,106.78			
178	,0,5 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	5	0.1	5,793.02			
178	,0,5 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	10	0.8	39,020.57			
178	,0,5 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68,803	15	0.1	4,106.78			
179	,0,LOTHLORIEN,COAST ROAD,WALCOTT	108,938	5	0.1	9,172.29			
179	,0,LOTHLORIEN,COAST ROAD,WALCOTT	108,938	10	0.8	61,782.57		1	
179	,0,LOTHLORIEN,COAST ROAD,WALCOTT	108,938	15	0.1	6,502.41			
180	,0,STONE GABLES,COAST ROAD,WALCOTT	108,938	5	0.1	9,172.29			
180	.0.STONE GABLES.COAST ROAD,WALCOTT	108,938	10	0.8	61,782.57		1	
180	,0,STONE GABLES,COAST ROAD,WALCOTT	108,938	15	0.1	6,502.41			
181	,8, ,SEA VIEW ESTATE,BACTON	74,537	5	0.1	6,275.78			
181	,8, ,SEA VIEW ESTATE,BACTON	74,537	10	0.8	42,272.28		i .	
181	.8, .SEA VIEW ESTATE,BACTON	74,537	15	0.1	4,449.02		1	1
182	,32, ,SEA VIEW ESTATE,BACTON	29,815	5	0.1	2,510.31			
182	,32, ,SEA VIEW ESTATE,BACTON	29,815	10	0.8	16,908.91			
182	,32, ,SEA VIEW ESTATE,BACTON	29,815	15	0.1	1,779.61			
183	,0.STONE GABLES,COAST ROAD,WALCOTT	108,938	5	0.1	9,172.29			
183	,0.STONE GABLES,COAST ROAD,WALCOTT	108,938	10	0.8	61,782.57			
183	,0.STONE GABLES,COAST ROAD,WALCOTT	108,938	15	0.1	6,502.41			
201	Erosion of B1159	1,232,830	5	0.1	103,800.98		1	
201	Erosion of B1159	1,232,830	10	0.8	699,181.10			
201	Erosion of B1159	1.232.830	15	0.1	73.586.47		1	

											Present Value Cos	ts for all o	ptions												
Client/Aut North Norfe	thority folk District Council																								
Project na	Bacton, Walcott and Os	and Coastal M	Management S	Study															Results £						
Project ref	ference		340,681	olddy								Opt	ion 1					Option 2			Option 3		Option 4		Option
Scaling fac	for estimates (year 0) ctor (e.g. £m, £k, £)		pr-2014 £							PV total costs			othing 0				-nothing until failu	re event 582,376	and emergency wo⊢Cap	ital Main	tenance and patch re 997,762	oair Car	oital Works - typic 1,205,442	al	Capital Works 381380
Initial disco		on 1 Do-n	3.5%		IT	OTALS: PV	PV	PV P\	,	Option 2	o-nothing until failure event a	nd emergency	worl TOTALS:	F	PV	PV	PV PV	- 10	Option 3 Ca	oital Mair	ntenance and patch rep	air TOTALS:	PV	PV PV	PV
	Car			Negat ther costs	tive	Cash Capital			egative ests	Capital	Maint. Other	Negative costs		,	Capital	Maint	Nega Other costs	tive	Capital Mair		Negative Other costs		Capital	Maint Other	Negative costs
	cash sum	0	0	0	0			.00 0.00	0.00) 0	93			31,500		maiiit -	582376.29	0.00		8284.44		0 1,348,284		997,762	0.00 0.00
vear	Discount Factor																								
0	1.000 0.966					0.00		.00 0.00	0.00		0	315		9,315	0.00		9000.00	0.00		449,428		449,428	-	0.00 434230.09	0.00 0.00 0.00 0.00
2	0.934					0.00	0.00	.00 0.00	0.00		9,	315		9,315	0.00		8695.65	0.00		+43,420		445,420	-	0.00	0.00 0.00
3 4	0.902 0.871							.00 0.00	0.00)		315 315		9,315	0.00		8401.60 8117.48	0.00				-	-	0.00	0.00 0.00 0.00 0.00
5	0.842 0.814					0.00	0.00	.00 0.00	0.00		18,	630 630		18,630 18,630	0.00		15685.96 15155.52	0.00				-	-	0.00	0.00 0.00 0.00 0.00
7	0.786					0.00	0.00	.00 0.00	0.00		18,	630		18,630	0.00		14643.01	0.00				-	-	0.00	0.00 0.00
8	0.759 0.734							.00 0.00	0.00)		575 575		46,575 46,575	0.00		35369.59 34173.52	0.00		449,428		449,428	-	0.00 329759.35	0.00 0.00
10	0.709 0.685							.00 0.00	0.00			575 575		46,575 46,575	0.00		33017.89 31901.35	0.00					-	0.00	0.00 0.00 0.00 0.00
12	0.662					0.00	0.00	.00 0.00	0.00		46.	575		46,575	0.00	-	30822.56	0.00				-	-	0.00	0.00 0.00
13	0.639 0.618					0.00	0.00	.00 0.00	0.00)	46,	575 575		46,575 46,575	0.00		29780.25 28773.19	0.00					+	0.00	0.00 0.00 0.00 0.00
15 16	0.597 0.577							.00 0.00	0.00)		575 150		46,575 93,150	0.00	-	27800.18 53720.16	0.00				-	-	0.00	0.00
17	0.557					0.00	0.00	.00 0.00	0.00		93,	150		93,150	0.00		51903.53	0.00					-	0.00	0.00 0.00
19	0.538 0.520					0.00	0.00	.00 0.00 .00 0.00	0.00		93, 93,	150		93,150 93,150	0.00	-	50148.34 48452.50	0.00 0.00 0.00		449,428		449,428	-	0.00 233772.61	0.00 0.00 0.00 0.00 0.00 0.00
20	0.503 0.486							.00 0.00	0.00)	93,	150		93,150	0.00	-	46814.01 0.00					-	-	0.00	0.00 0.00 0.00 0.00
22	0.469 0.453					0.00	0.00	.00 0.00 .00 0.00 .00 0.00	0.00					-	0.00	-	0.00	0.00 0.00 0.00				-	-	0.00	0.00 0.00 0.00 0.00 0.00 0.00
24	0.438					0.00	0.00	.00 0.00	0.00						0.00	-	0.00	0.00				-		0.00	0.00 0.00
25 26 27	0.423 0.409							.00 0.00	0.00					-	0.00	-	0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
27	0.395 0.382							.00 0.00	0.00						0.00		0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
28 29	0.369					0.00	0.00	.00 0.00	0.00					-	0.00	-	0.00	0.00					-	0.00	0.00 0.00
30 31	0.356 0.346							.00 0.00	0.00)				-	0.00		0.00	0.00				-		0.00	0.00 0.00 0.00 0.00
32 33 34	0.336 0.326							.00 0.00	0.00						0.00	-	0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
34	0.317					0.00	0.00	.00 0.00	0.00)				-	0.00	-	0.00	0.00				-	-	0.00	0.00
35 36	0.307 0.298					0.00	0.00	.00 0.00	0.00)				-	0.00		0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
37 38	0.290 0.281							.00 0.00	0.00					-	0.00	-	0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
39	0.273 0.265					0.00	0.00	.00 0.00	0.00					- 1	0.00		0.00	0.00 0.00 0.00				-	-	0.00	0.00 0.00 0.00 0.00
41	0.257					0.00	0.00	.00 0.00	0.00						0.00		0.00	0.00				-	-	0.00	0.00 0.00
42 43	0.250 0.243							.00 0.00	0.00)					0.00	-	0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
44	0.236 0.229					0.00	0.00	.00 0.00 .00 0.00	0.00						0.00		0.00	0.00					-	0.00	0.00 0.00 0.00 0.00 0.00 0.00
46	0.222					0.00	0.00	.00 0.00	0.00						0.00		0.00	0.00				-		0.00	0.00 0.00
47 48	0.216 0.209							.00 0.00	0.00)					0.00		0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00 0.00 0.00
49 50	0.203 0.197							.00 0.00	0.00						0.00	-	0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
51	0.192					0.00	0.00	.00 0.00	0.00					- 1	0.00		0.00	0.00				-	-	0.00	0.00
52	0.186 0.181						0.00	.00 0.00	0.00)				-	0.00		0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
54 55	0.175 0.170							.00 0.00	0.00)					0.00		0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
56	0.165					0.00	0.00	.00 0.00	0.00						0.00	-	0.00	0.00				-	-	0.00	0.00 0.00
58	0.160 0.156					0.00	0.00	.00 0.00	0.00)					0.00		0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
59 60	0.151 0.147							.00 0.00	0.00)	-	-			0.00	-	0.00	0.00				-	 	0.00	0.00 0.00 0.00 0.00
61	0.143 0.138						0.00	.00 0.00	0.00						0.00	-	0.00	0.00				-		0.00	0.00 0.00 0.00 0.00
63	0.134					0.00 C	0.00	.00 0.00	0.00)				- 1	0.00	-	0.00	0.00 0.00 0.00				-	-	0.00	0.00
65	0.130 0.127					0.00	0.00	.00 0.00 .00 0.00	0.00)				-	0.00	-		0.00				-	-	0.00 0.00	0.00 0.00 0.00 0.00
66 67	0.123 0.119					0.00 C 0.00 C 0.00 C	0.00 0.00 0.00	.00 0.00 .00 0.00 .00 0.00	0.00 0.00 0.00	1				-	0.00	-	0.00	0.00 0.00 0.00				-	-	0.00 0.00 0.00	0.00 0.00
62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 80 81 82 83 84 85 88 89 90 91 91 92 93 94 95 96 97 97 98	0.116 0.112					0.00 0	0.00 0.00 0.00	.00 0.00 .00 0.00 .00 0.00	0.00 0.00 0.00					1	0.00		0.00 0.00 0.00	0.00 0.00 0.00					-	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
70	0.109					0.00	0.00	.00 0.00	0.00)				-	0.00	-	0.00	0.00				-	-	0.00	0.00 0.00
71 72	0.106 0.103 0.100				_	0.00 C	0.00 0.00 0.00	.00 0.00 .00 0.00 .00 0.00	0.00 0.00 0.00					-	0.00		0.001	0.00 0.00 0.00 0.00 0.00				-	-	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
73 74	0.100 0.097					0.00	0.00	.00 0.00	0.00)				-	0.00	=	0.00	0.00				-	-	0.00	0.00 0.00
75	0.094					0.00	0.00	.00.0	0.00)				-	0.00	-	0.00	0.00				-	-	0.00	0.00 0.00
76	0.092 0.090					0.00 0	0.00 0.00 0.00	.00 0.00 .00 0.00 .00 0.00	0.00 0.00 0.00)				-	0.00	-	0.00 0.00 0.00	0.00				-		0.00	0.00 0.00 0.00 0.00
78 79	0.087					0.00 C	0.00	.00 0.00	0.00					-	0.00	-	0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00				-	-	0.00	0.00 0.00 0.00 0.00
80	0.085 0.083 0.081					0.00 C	0.00 0.00 0.00	.00 0.00 .00 0.00 .00 0.00	0.00 0.00 0.00					-	0.00		0.00 0.00 0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00 0.00 0.00
82	0.079					0.00	0.00	.00 0.00 .00 0.00	0.00					-	0.00	-	0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
83 84	0.077 0.075					0.00	0.00	.00 0.00	0.00					-	0.00	-	0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
85 86	0.074 0.072					0.00	0.00	.00 0.00	0.00					-	0.00	-	0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00
87	0.070					0.00	0.00	.00 0.00 .00 0.00	0.00)				-	0.00	-	0.00	0.00				-		0.00	0.00 0.00
89	0.068 0.067					0.00 C	0.00 0.00 0.00	.00 0.00	0.00 0.00 0.00)				-	0.00	-	0.00	0.00 0.00 0.00				-		0.00	0.00 0.00 0.00 0.00 0.00 0.00
90 91	0.065 0.063					0.00	0.00 0.00 0.00	.00 0.00 .00 0.00 .00 0.00	0.00 0.00 0.00)				-	0.00 0.00 0.00	-	0.00 0.00 0.00	0.00 0.00 0.00				-	-	0.00 0.00 0.00	0.00 0.00
92	0.065 0.063 0.062 0.060 0.059					0.00	0.00	.00 0.00	0.00						0.00	- - - - - -	0.00	0.00				-	-	0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
94	0.059					0.00 0	0.00	.00 0.00 .00 0.00 .00 0.00	0.00						0.00	-	0.00	0.00					-	0.00	0.00 0.00
95 96	0.057 0.056					0.00 C	0.00	.00	0.00)				-	0.00		0.00	0.00 0.00 0.00				-	-	0.00	0.00 0.00
97	0.055 0.053					0.00	0.00	.00 0.00	0.00						0.00	-		0.00				-	-	0.00	0.00 0.00 0.00 0.00
99	0.052					0.00	0.00	.00 0.00 .00 0.00	0.00						0.00	-	0.00	0.00						0.00	0.00 0.00 0.00 0.00

	Sheet Nr.	10																					
5 - Intense	Prepared (da Printed Prepared by Checked by Checked dat			22/05/2014 11/07/2014 L Wiggins S Hampshire 41,822	-																		
Option 4		ital Works - ty	Negative	TOTALS: P\			PV	PV Negative	Option 5a		l Works - Intense Negativ		PV	PV	PV	PV Negative			Negative	TOTALS:		PV PV	Negative
1,247,632		Other 0	costs 0	1,247,632			Other 0.0	costs 00 0.00	3,947,287	Maint.	Other costs	Cash 0 3,947,287	Capital 3,813,804	Maint 0.0	Other 0.0	costs 00	Capital 0.00	Maint.	costs 0	Cash -	Capital -	Maint Oth	0.00 0.00
1,247,632				1,247,632	1,205,442	0.00			3,947,287			3,947,287	3,813,804	0.0			0.00		 	-	-	0.00	0.00 0.00 0.00 0.00
1,247,032				1,247,632	1,205,442	0.00	0.0	0.00	3,947,267			3,947,287	3,613,604	0.0			0.00			-	-	0.00	0.00 0.00 0.00 0.00 0.00 0.00
				-		0.00 0.00	0.0	0.00				-	-	0.0	0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
						0.00 0.00 0.00	0.0	0.00				-	-	0.0	0.0	00	0.00 0.00 0.00			-		0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
				-	-	0.00 0.00	0.0	0.00				-	-	0.0	0.0	00	0.00			-	-	0.00 0.00	0.00 0.00 0.00 0.00
						0.00	0.0	0.00					-	0.0	0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
						0.00 0.00 0.00	0.0	0.00						0.00	0.0	00	0.00 0.00 0.00			- - -		0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
					-	0.00 0.00	0.0	0.00				-	-	0.00	0 0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
						0.00 0.00 0.00	0.0	0.00				-	-	0.00 0.00	0.0	00	0.00 0.00 0.00			-		0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
				-	-	0.00	0.0	0.00				-	-	0.0	0 0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
					- - -	0.00 0.00 0.00	0.0	0.00					-	0.00 0.00	0.0	00	0.00 0.00 0.00				-	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
					-	0.00	0.0	0.00				-	-	0.0	0.0	00	0.00			-		0.00	0.00 0.00
				-	-	0.00	0.0	0.00				-	-	0.0	0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00 0.00 0.00
				-		0.00 0.00 0.00	0.0	0.00				-	-	0.0	0.0	00	0.00 0.00 0.00			-	-	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
				-	-	0.00 0.00	0.0	0.00				-	-	0.0	0 0.0	00	0.00			-	-	0.00 0.00	0.00 0.00 0.00 0.00
						0.00 0.00 0.00	0.0	0.00				-	-	0.00	0.0	00	0.00 0.00 0.00			-		0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
						0.00	0.0	0.00					-	0.0	0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
				-	-	0.00	0.0	0.00				-	-	0.0	0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
					- - -	0.00 0.00 0.00	0.0	0.00				-	-	0.0 0.0 0.0	0.0	00	0.00 0.00 0.00			-		0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
				-	-	0.00 0.00	0.0	0.00				-	-	0.0	0 0.0	00	0.00 0.00 0.00			-	-	0.00	0.00 0.00 0.00 0.00
						0.00 0.00 0.00	0.0	0.00				-		0.00	0.0	00	0.00 0.00 0.00					0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
				-	-	0.00 0.00	0.0	0.00				-	-	0.0	0.0	00	0.00			-		0.00 0.00	0.00 0.00 0.00 0.00
					-	0.00	0.0	0.00					-	0.0	0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
					- - -	0.00 0.00 0.00	0.0	0.00				-		0.00	0.0	00	0.00 0.00 0.00					0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
					-	0.00 0.00	0.0	0.00				-	-	0.0	0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
					- - -	0.00 0.00 0.00	0.0	0.00				-	-	0.00 0.00	0.0	00	0.00 0.00 0.00				-	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
				-	-	0.00 0.00	0.0	0.00				-		0.0	0 0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
				-	-	0.00	0.0	0.00				-	-	0.0	0.0		0.00 0.00 0.00			-	-	0.00	0.00 0.00 0.00 0.00 0.00 0.00
					- - -	0.00 0.00 0.00	0.0	0.00						0.00 0.00 0.00	0 0.0	00	0.00 0.00 0.00			-	-	0.00 0.00 0.00	0.00 0.00 0.00 0.00
				-		0.00 0.00	0.0	0.00				-	-	0.0	0.0	00	0.00				-	0.00	0.00 0.00 0.00 0.00
						0.00 0.00 0.00	0.0	0.00				-		0.00 0.00 0.00	0.0	00	0.00 0.00 0.00			- - -	-	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
					-	0.00 0.00	0.0	0.00					-	0.0	0 0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
						0.00 0.00 0.00	0.0	0.00				-		0.00 0.00 0.00	0.0	00	0.00 0.00 0.00					0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
						0.00	0.0	0.00				-	-	0.0	0.0	00	0.00		 	-	-	0.00	0.00 0.00 0.00 0.00
				-		0.00 0.00	0.0	0.00				-	-	0.0	0 0.0	00).00).00			-		0.00	0.00 0.00 0.00 0.00
					- - -	0.00 0.00 0.00	0.0	0.00				-	-	0.00	0.0	00	0.00 0.00 0.00			-		0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
				-	-	0.00 0.00	0.0	0.00				-	-	0.0	0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
				-	-	0.00	0.0	0.00				-	-	0.0	0 0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
				- - -	- - -	0.00 0.00 0.00	0.0	0.00				= = = = = =		0.00 0.00 0.00	0.0	00	0.00 0.00 0.00					0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
						0.00 0.00	0.0	0.00					-	0.0	0 0.0	00	0.00			-	-	0.00	0.00 0.00 0.00 0.00
					- - -	0.00 0.00 0.00	0.0	0.00				-	-	0.00	0.0	00	0.00 0.00 0.00			-		0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
						0.00	0.0	0.00				-	-	0.0	0.0	00	0.00		 	-		0.00	0.00 0.00 0.00 0.00

Flood Damages

				Flood Damages		Da Nari				
						Do Noth				
					Val	ue of		mages with		
	DISCOUNTING	G		Notes	Dai	mages	RP		Dis	counted
J	0	1.000	0		£	85,000	£	113,050	£	113,050
	1	0.966	1		£	85,000	£	113,050	£	109,227
ı	2	0.934	2		£	85,000	£	113,050	£	105,533
J	3	0.902	3		£	85,000	£	113,050	£	101,965
J	4	0.871	4		£	85,000	£	113,050	£	98,517
ı	5	0.842	5		£	85,000	£	113,050	£	95,185
ı	6	0.814	6		£	85,000	£	113,050	£	91,966
ı	7	0.786	7		£	85,000	£	113,050	£	88,856
ı	8	0.759	8		£	85,000	£	113,050	£	85,851
ı	9	0.734	9	Sea Wall Fails	£	1,130,000	£	1,502,900	£1	,102,724
ı	10	0.709	10		£	1,130,000	£	1,502,900	£1	,065,434
ı	11	0.685	11		£	1,130,000	£	1,502,900	£1	,029,405
J	12	0.662	12		£	1,130,000	£	1,502,900	£	994,594
J	13	0.639	13	Properties Eroded						
	14	0.618	14							
J	15	0.597	15							
J	16	0.577	16							
J	17	0.557	17							
J	18	0.538	18							
ı	19	0.520	19							
	20	0.503	20							
	21	0.486	21							
J	22	0.469	22							
	23	0.453	23							
	24	0.438	24							
J	25	0.423	25							
J	26	0.409	26							
J	27	0.395	27							
J	28	0.382	28							
	29	0.369	29							
	30	0.356	30							
J	31	0.346	31							
J	32	0.336	32							
J	33	0.326	33							
J	34	0.317	34							
J	35	0.307	35							
J	36	0.298	36							
	37	0.290	37							
	38	0.281	38							
	39	0.273	39							
	40	0.265	40							
	41	0.257	41							
	42	0.250	42							
J	43	0.243	43							
J	44	0.236	44							
J	45	0.229	45							
J	46	0.222	46							
J	47	0.216	47							
	48	0.209	48							
	49	0.203	49							
J	50	0.197	50							
J	51	0.192	51							
J	52	0.186	52							
	53	0.181	53							
-1										

ΕΛ	0.175	E4		
54	0.175	54		
55	0.170	55		
56	0.165	56		
57	0.160	57		
58	0.156	58		
59	0.151	59		
60	0.147	60		
61	0.143	61		
62	0.138	62		
63	0.134	63		
64	0.130	64		
65	0.127	65		
66	0.123	66		
67	0.119	67		
68	0.116	68		
69	0.112	69		
70	0.109	70		
71	0.106	71		
72	0.103	72		
73	0.100	73		
74	0.097	74		
75	0.094	75		
76	0.092	76		
77	0.090	77		
78	0.087	78		
79	0.085	79		
80	0.083	80		
81	0.081	81		
82	0.079	82		
83	0.077	83		
84	0.075	84		
85	0.074	85		
86	0.072	86		
87	0.072	87		
88	0.068	88		
89	0.067	89	1	
90	0.067	90		
90	0.063	91		
92	0.062	92		
93	0.062	93		
93		93		
	0.059 0.057	95		
95				
96	0.056	96		
97	0.055	97		
98	0.053	98		
99	0.052	99		
100	0.051	100		
		TOTAL	1	E 000 000
		TOTAL		5,082,308

Option Costs						Cash costs	
	Design life	Cost		unit	Bacton	Walcott- Ostend	Full Length (sum of both)
Length of coastline				m	1190	2430	3620
Refurbishment (timber groynes, revetment, concrete)	10)					
Concrete Gang (5m an hour repairs)		£	99	hrs	£23,493	£47,973	£71,466
Cement Grout assume 10% structure est 10m of concrete from prom		£	135	t	£115,617	£236,091	£351,708
timber 3-5m 300x100 (est 25 groynes 90m each, 2m high, 7 planks per bay, 10%)		£	63	m	£35,551	£59,252	£102,703
m20 bolts 150mm long est 4 per plank		£	5		£2,468	£4,113	£7,129
timber 5-8m 300x100 (rev, 3.5m high, 10%)		£	59		£18,867	£27,671	£34,589
Rev - m20 bolts 150mm long est 4 per plank		£	5	nr	£1,110	£1,628	£2,035
Timber Piles (greenheart 300x300 10m length		£	800	nr	£9,600	£14,080	£17,600
Total					£206,705	£390,807	£587,228
Recharge							
Material (Clacton) 2.5m high at 1:9	5 Need to repeat	t		cu.m	£535,500	£1,093,500	£1,629,000
Preparation of filled surface (beach reprofiling)			£3	sq.m	£70,852	£144,680	£215,532
mobilisation (lorry) as assumed at hartlepool					£100,000	£200,000	£300,000
Total					£706,352	£1,438,180	£2,144,532
Buried Gabions							
Buried Gabions 1x1 (assume x1) single layer deep 3 high	15	5		cu.m	£462,494	£944,420	£1,406,913
Excavation of beach material (General 0.5-1m) assumed 1m deep			£3	cu.m	£10,234	£20,898	£31,132
Replace Beach Material (double handling earth 300m)			£6	cu.m	£18,743		£57,015
Total					£491,470	£1,003,590	£1,495,060
Open Stone Asphalt	15	£	240		£285,600		£868,800
Material (Clacton) + selected fill to embankment (SPONS)		£	18	cu.m	£68,239		£207,585
Geotextile (Clacton)		£		sq.m	£31,434		£95,623
Excavation of beach material (General 0.5-1m) assumed toe only		£		cu.m	£4,094		£12,453
Replace Beach Material (double handling earth 300m)		£	6	cu.m	£7,497		£22,806
Mobilisation (lorry) as assumed at hartlepool					£100,000	£200,000	£300,000
Total					£496,864	£1,010,403	£1,507,267
Repairs for Failure Scenario			,	per150m	£396,667	£810,000	£1,206,667
	Above based on Sherri	ngham,	North	Norfolk			

FCRM spreadsheets (20-100 years for Bacton)

FCDPAG3 Summary

Project Summary Shee	et - Long tern	n adaptation	(0-100 vear	s)	
Client/Authority				Prepared (date)	22/05/2014
North Norfolk District Council				Printed	11/07/2014
Project name Bacton, Walcott and Ostend Coastal Management Study				Prepared by Checked by	L Wiggins S Hampshire
Project reference				Checked date	02/07/2014
Base date for estimates (year 0)		Apr-2014			
Scaling factor (e.g. £m, £k, £) Year		£	(used for all costs 30	, losses and benefi 75	ts)
Discount Rate		3.5%	3.00%	2.50%	
Optimism bias adjustment factor		60%			
Costs and benefits of options	1				
Option number	Option 1	Option 2	benefits £ Option 3	Option 4	Option 5
			Option 7	Ontine O. D.	
	Do-nothing	Option 6	Demolition,	Option 8 - Buy and Demolish of	Option 9 - buy,
		Purchase and	relocation and	all properties	lease and
Ordina nama		lease of all	rebuild all of		demolish of all
Option name		properties)	properties		properties
AEP or SoP (where relevant)					
COSTS:	0	1 470 070	0.001.070	1 411 007	1 540 407
PV capital costs PV operation and maintenance costs	0	1,479,276	2,681,070		1,546,407 0
PV other	0	0			0
Optimism bias adjustment	0	887,566	1,608,642	847,156	927,844
PV negative costs (e.g. sales) PV contributions	0	902,850	0	0	902,850
Total PV Costs £ excluding contributions	0	1,463,992	4,289,712	2,259,083	1,571,400
Total PV Costs £ taking contributions into account	0	1,463,992	4,289,712	2,259,083	1,571,400
BENEFITS: PV monetised flood damages	0	0	0	0	
PV monetised flood damages avoided	0	0			
PV monetised erosion damages	1,698,512				
PV monetised erosion damages avoided (protected) Total monetised PV damages £	1,698,512	1,698,512	1,698,512	1,698,512	1,698,512
Total monetised PV damages £	1,090,512	1,698,512	1,698,512	1,698,512	1,698,512
PV damages (from tourism)		,,-	,,-	,,-	, , .
Total PV damages £	1,698,512	0	0	0	
Total PV benefits £		1,698,512	1,698,512	1,698,512	1,698,512
DECISION-MAKING CRITERIA: excluding contributions					
Based on total PV benefits (includes benefits from scoring and	weighting and ec	osystem services	s)		
Net Present Value NPV		234,520	-2,591,200		127,111
Average benefit/cost ratio BCR		1.2	0.4	0.8	1.1 0.0
Incremental benefit/cost ratio IBCR		Highest bcr	0.0	0.0	0.0
Based on monetised PV benefits (excludes benefits from scorii Net Present Value NPV	ng and weighting	and ecosystem s 234,520	<i>ervices)</i> -2,591,200	-560,571	127,111
Average benefit/cost ratio BCR		1.2	-2,591,200	-360,371	1.1
Incremental benefit/cost ratio IBCR			0.0		0.0
		Highest bcr			
including contributions					
Taking account of contributions (in cludes benefits from scoring	g and weighting a				
Net Present Value NPV		234,520	-2,591,200 0.4		127,111 1.1
Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR		1.2	0.4	0.0	0.0
		Highest bcr			
Based on monetised PV benefits (excludes benefits from scori	ing and waighting	and acceptate	earvices)		
Net Present Value NPV	ng and weighting	234,520	-2,591,200	-560,571	127,111
Average benefit/cost ratio BCR		1.2	0.4	0.8	1.1
Incremental benefit/cost ratio IBCR			-	-	-
		Highest bcr			
Best practicable environmental option (WFD)					
Brief description of options: Option 1	Do-nothing				
Option 2	Option 6 Purchase	and lease of all p	roperties)		
Option 3	Option 7 Demolitic			rties	
Option 4 Option 5	Option 8 - Buy and Option 9 - buy, lea				
	_pao.ro buy, ied	and demonstra	a p. oportios		
0					
Comments and assumptions:					

FCDPAG3 Erosion- Do nothing

Client/Au		sion Loss Cald	ulation Sheet	with delay option	<u>15</u>		Sheet Nr.		
	rfolk District Council								
Project r			Option:			Delay (yrs)	Prepared (date Printed	e)	20/05/2014
Bacton, V	Valcott and Ostend Coastal Management Study	-	Option 2 Option 3			100 100	Printed Prepared by		12/05/2014 SH
	te for estimates (year 0)	41,730.00	Option 4			100	Checked by		VT
Scaling f Discount	actor (e.g. £m, £k, £)	£ 0.04	Option 5			100	Checked date		0
Discoun	rate	0.04			1		-		
		Risk free market	Year when the asset is expected						
Ref	Asset	value	to be lost	Prob of		E	Expected value	of asset losse	s £
143	,0,ASH COTTAGE,BEACH ROAD,BACTON	120,405.18		0.1	-				
177	,0,CABLE COTTAGE,BEACH ROAD,BACTON	97,470.86		0.1	10,137.79				
121 117	,0,CRANKS CASTLE,MILL LANE,BACTON ,0,HERMITAGE,BEACH ROAD,BACTON	45,868.64		0.1 0.1	8,206.78				
144	,0,MORSE HOUSE,BEACH ROAD,BACTON	252,277.52		0.1	3,862.02 21,241.09				
184	.0.SEA EDGE.BEACH ROAD.BACTON	126,138.76		0.1	10,620.55				
142	,0,SEABRINK,BEACH ROAD,BACTON	200,675.30		0.1	16,896.32				
57	,0,ST. OLAFS,BEACH ROAD,BACTON	149,073.08 120,405.18		0.1	12,551.55				
72	,0,THE LEAS,MILL LANE,BACTON	74,536.54		0.1	10,137.79				
113	,6, ,NEWLANDS ESTATE,BACTON	80,270.12		0.1	6,275.78				
114	,7, ,NEWLANDS ESTATE,BACTON	74,536.54		0.1	6,758.53				
124	,76, ,NEWLANDS ESTATE,BACTON	80,270.12		0.1	6,275.78				
81	,77, ,NEWLANDS ESTATE,BACTON	80,270.12		0.1	6,758.53				
66	,78, ,NEWLANDS ESTATE,BACTON	80,270.12		0.1	6,758.53				
77	,79, ,NEWLANDS ESTATE,BACTON	80,270.12	5	0.1	6,758.53				
120	THE LEAS BEACH PARK,0, ,MILL LANE,BACTON	143,339.50		0.1	6,758.53				
143	,0,ASH COTTAGE,BEACH ROAD,BACTON	120,406.19		0.8	81,292.85				
177 121	,0,CABLE COTTAGE,BEACH ROAD,BACTON ,0,CRANKS CASTLE,MILL LANE,BACTON	97,470.86 45,868,64	10	0.8 0.8	68,286.57 55,279.14				
117	,0,HERMITAGE,BEACH ROAD,BACTON	45,868.64 252,277.52		0.8	26,013.71				
144	,0,MORSE HOUSE,BEACH ROAD,BACTON	126,138.76		0.8	143,075.42				
184	,0,SEA EDGE,BEACH ROAD,BACTON	200,675.30		0.8	71,537.71				
142	,0,SEABRINK,BEACH ROAD,BACTON	149,073.08	10	0.8	113,810.00				
57	,0,ST. OLAFS,BEACH ROAD,BACTON	120,405.18		0.8	84,544.57				
72	,0,THE LEAS,MILL LANE,BACTON	74,536.54		0.8	68,286.00				
113 114	,6, ,NEWLANDS ESTATE,BACTON ,7, ,NEWLANDS ESTATE,BACTON	80,270.12	10	0.8	42,272.28 45,524.00				
124	,76, ,NEWLANDS ESTATE,BACTON	74,536.54 80,270.12		0.8	42,272.28				
120	THE LEAS BEACH PARK,0, ,MILL LANE,BACTON	143,339.50		0.8	45,524.00				
143	,0,ASH COTTAGE,BEACH ROAD,BACTON	120,405.18		0.1	8,555.80				
177	,0,CABLE COTTAGE,BEACH ROAD,BACTON	97,470.86	15	0.1	7,186.87				
121	,0,CRANKS CASTLE,MILL LANE,BACTON	45,868.64		0.1	5,817.94				
117	,0,HERMITAGE,BEACH ROAD,BACTON	252,277.52		0.1	2,737.86				
144	,0,MORSE HOUSE,BEACH ROAD,BACTON ,0,SEA EDGE,BEACH ROAD,BACTON	126,138.76	15 15	0.1 0.1	15,058.21 7,529.10				
184 142	,0,SEA EDGE,BEACH ROAD,BACTON	200,675.30 149,073.08		0.1	11,978.12				
57	,0,ST. OLAFS,BEACH ROAD,BACTON	120,405.18		0.1	8,898.03				
72	,0,THE LEAS,MILL LANE,BACTON	74,536.54		0.1	7,186.87				
113	,6, ,NEWLANDS ESTATE,BACTON	80,270.12	15	0.1	4,449.02				
114	,7, ,NEWLANDS ESTATE,BACTON	74,536.54		0.1	4,791.25				
124	,76, ,NEWLANDS ESTATE,BACTON	80,270.12		0.1	4,449.02				
81 66	,77, ,NEWLANDS ESTATE,BACTON .78, .NEWLANDS ESTATE,BACTON	80,270.12		0.8 0.8	38,329.99 38,329.99				
77	.79NEWLANDS ESTATE,BACTON	80,270.12 80,270.12		0.8	38,329.99				
120	THE LEAS BEACH PARK,0, ,MILL LANE,BACTON	143,339.50		0.1	4,791.25				
81	,77, ,NEWLANDS ESTATE,BACTON	80,270.12		0.1	7,203.75				
66	,78, ,NEWLANDS ESTATE,BACTON	80,270.12	20	0.1	4,034.10				
77	,79, ,NEWLANDS ESTATE,BACTON	80,270.12		0.1	4,034.10				
86	,0,CREST-O-GLIFF,MILL LANE,BACTON	57,335.80		0.1	2,859.85				
102	,0,MIDSHALLOWS,BEACH ROAD,BACTON	97,470.86		0.1	2,042.75				
12 63	,0,THE WARREN,MILL LANE,BACTON ,0,THE WARREN,MILL LANE,BACTON	103,204.44 103,204.44	30	0.1 0.1	3,472.68 3,676.95				
67	,0,THE WARREN,MILL LANE,BACTON	103,204.44		0.1	3,676.95				
84	,8, ,NEWLANDS ESTATE,BACTON	74,536.54		0.1	3,676.95				
54	,81, ,NEWLANDS ESTATE,BACTON	137,605.92	30	0.1	2,655.58				
82	,9, ,NEWLANDS ESTATE,BACTON	74,536.54	30	0.1	4,902.60				
189	REDHOUSE CHALET, PASTON ROAD, BACTON	149,073.08		0.1	2,655.58				
86 102	,0,CREST-O-GLIFF,MILL LANE,BACTON	57,335.80	35 35	0.8 0.8	36,651.57				
102 12	,0,MIDSHALLOWS,BEACH ROAD,BACTON ,0,THE WARREN,MILL LANE,BACTON	97,470.86		0.8	14,096.76 23,964.49				
63	,0,THE WARREN,MILL LANE,BACTON	108,938.02 103,204.44		0.8	26,783.84				
67	,0,THE WARREN,MILL LANE,BACTON	103,204.44		0.8	25,374.16				
84	,8, ,NEWLANDS ESTATE,BACTON	74,536.54		0.8	25,374.16				
54	,81, ,NEWLANDS ESTATE,BACTON	137,605.92	35	0.8	18,325.79				
82	,9, ,NEWLANDS ESTATE,BACTON	74,536.54		0.8	33,832.22				
189	REDHOUSE CHALET, PASTON ROAD, BACTON	149,073.08		0.8	18,325.79				
86 102	,0,CREST-O-GLIFF,MILL LANE,BACTON ,0,MIDSHALLOWS,BEACH ROAD,BACTON	57,335.80	40	0.1 0.1	3,952.00 1,520.00				
102	,0,THE WARREN,MILL LANE,BACTON	97,470.86 114,671.60		0.1	2,584.00				
63	,0,THE WARREN,MILL LANE,BACTON	114,671.60		0.1	3,040.00				
67	,0,THE WARREN,MILL LANE,BACTON	114,671.60		0.1	3,040.00				
84	,8, ,NEWLANDS ESTATE,BACTON	74,536.54	40	0.1	3,040.00				
54	,81, ,NEWLANDS ESTATE,BACTON	137,605.92		0.1	1,976.00				
82	,9, ,NEWLANDS ESTATE,BACTON	74,536.54		0.1	3,648.00				
189	REDHOUSE CHALET, PASTON ROAD, BACTON	149,073.08		0.1	1,976.00				
47 48	,0,1 SOUTHHAVEN,BEACH ROAD,BACTON .0,2 SOUTHHAVEN,BEACH ROAD,BACTON	120,405.18		0.1 0.1	1,628.17 1,315.06				
28	,0,EASTWARD HO,PASTON ROAD,BACTON	114,671.60 401,350.60		0.1	1,252.44				
19	,0,THE WARREN,MILL LANE,BACTON	108,938.02		0.1	4,383.53				
11	,0,VICTORIA,BEACH ROAD,BACTON	103,204.44		0.1	1,189.82				
	,10, ,NEWLANDS ESTATE,BACTON	63,069.38		0.1	1,127.19				1

FCDPAG3 Erosion- Do nothing

33	,11, ,NEWLANDS ESTATE,BACTON		70	0.1	688.84		
56	.44NEWLANDS ESTATE.BACTON	63,069.38	70	0.1	688.84		
15	,46, ,NEWLANDS ESTATE,BACTON	. 126,138.76 80.270.12	70	0.1	1,377.68		 -
53	.70NEWLANDS ESTATE,BACTON	80,270.12	70	0.1	876.71		
17	,71, ,NEWLANDS ESTATE,BACTON	86,003.70	70	0.1	876.71		
8	.72NEWLANDS ESTATE.BACTON	97,470.86	70	0.1	939.33		
44	,73, ,NEWLANDS ESTATE,BACTON	131,872.34	70	0.1	1,064.57		 -
50	,80, ,NEWLANDS ESTATE,BACTON	. 131,672.34 80,270.12	70	0.1	1,440.30		
35	,83, ,NEWLANDS ESTATE,BACTON	143,339.50	70	0.1	876.71		
47	,0,1 SOUTHHAVEN,BEACH ROAD,BACTON	120,405.18	75	0.8	10,803.64		
48	.0.2 SOUTHHAVEN.BEACH ROAD.BACTON	114,671.60	75	0.8	9,075,06		l
28	,0,EASTWARD HO,PASTON ROAD,BACTON	401,350.60	75	0.8	8,642.92		
19	,0,THE WARREN,MILL LANE,BACTON	103,204.44	75	0.8	30,250.20		
11	,0,VICTORIA,BEACH ROAD,BACTON	103,204.44	75	0.8	7,778.62		
34	,10, ,NEWLANDS ESTATE,BACTON	63,069.38	75	0.8	7,778.62		
33	,11, ,NEWLANDS ESTATE,BACTON	63,069.38	75	0.8	4,753.60		
56	,44, ,NEWLANDS ESTATE,BACTON	126,138.76	75	0.8	4,753.60		
15	,46, ,NEWLANDS ESTATE,BACTON	80,270.12	75	0.8	9,507.21		
53	,70, ,NEWLANDS ESTATE,BACTON	80,270.12	75	0.8	6,050.04		
17	,71, ,NEWLANDS ESTATE,BACTON	86,003.70	75	0.8	6,050.04		
8	,72, ,NEWLANDS ESTATE,BACTON	97,470.86	75	0.8	6,482.19		
44	,73, ,NEWLANDS ESTATE,BACTON	131,872.34	75	0.8	7,346.48		
50	,80, ,NEWLANDS ESTATE,BACTON	80,270.12	75	0.8	9,939.35		
35	,83, ,NEWLANDS ESTATE,BACTON	143,339.50	75	0.8	6,050.04		
47	,0,1 SOUTHHAVEN,BEACH ROAD,BACTON	120,405.18	80	0.1	1,193.61		
48	,0,2 SOUTHHAVEN,BEACH ROAD,BACTON	114,671.60	80	0.1	1,002.63		
28	,0,EASTWARD HO,PASTON ROAD,BACTON	401,350.60	80	0.1	954.88		
19	,0,THE WARREN,MILL LANE,BACTON	108,938.02	80	0.1	3,342.10		
11	,0,VICTORIA,BEACH ROAD,BACTON	103,204.44	80	0.1	907.14		
34	,10, ,NEWLANDS ESTATE,BACTON	63,069.38	80	0.1	859.40		
33	,11, ,NEWLANDS ESTATE,BACTON	63,069.38	80	0.1	525.19		
56	,44, ,NEWLANDS ESTATE,BACTON	126,138.76	80	0.1	525.19		
15	,46, ,NEWLANDS ESTATE,BACTON	80,270.12	80	0.1	1,050.37		
53	,70, ,NEWLANDS ESTATE,BACTON	80,270.12	80	0.1	668.42		
17	,71, ,NEWLANDS ESTATE,BACTON	86,003.70	80	0.1	668.42		
8	,72, ,NEWLANDS ESTATE,BACTON	97,470.86	80	0.1	716.16		
44	,73, ,NEWLANDS ESTATE,BACTON	131,872.34	80	0.1	811.65		
50	,80, ,NEWLANDS ESTATE,BACTON	80,270.12	80	0.1	1,098.12		
35	,83, ,NEWLANDS ESTATE,BACTON	143,339.50	80	0.1	668.42		
Totals		13,410,844.63			1,698,512	-	 -

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 proballity 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

Client/A	uthority rfolk District C									Present Valu	e Costs	for all option	<u>s</u>											Sheet Nr.	10				
Project r	name	ouncil	01/04/2014 £ 0													Res	1ts £							Prepared ((date)	22/05/2014			
Project a	Walcott and O reference	stend Coastal M	anagement Study									Option 1 Do-nothing			ption 6 Pure	Option 2	se of all propertiesmolition, re 2,382,126	Option 3 location and rebuild all o 2,681,070	on 8 - Buy	Option 4	nan Q - huy I	Option	5	Printed Prepared b	oy	L Wiggins S Hampshire 41,822			
Scaling f	actor (e.g. £m	, £k, £)	2							PV total costs		Do-nothing			phonorus	nuse uno reu.	2,382,126				7	susc uno oci	2,449,257	Checked d	iate				
		Option 1	Do-nothing			TOTAL F	PV PV	PV	PV	Option 2 Option 6 Po	urchase and I	lease of all propert	TOTALS:	PV PV	PV	PV	Option 3 Option 7 De	emolition, relocation and re	TOTALS:	PV PV	PV	PV	Option 4	Option 8 - I	Buy and Demo	TOTALS:	PV	PV	PV
		Canital	Maint.	Other	Negative costs	Cash (Capit Maint	Other	Negative costs	Capital Maint.	Other	Negative costs	Cash	Capital Maint	Other	Negative costs	Capital Maint.	Negative Other costs	Cash	Capital Maint	Other	Negative costs	Capital	Maint.	Negative Other costs	Cash	Capital	Maint	Other
	cash sum Discount Factor							1		4,969,221 -		4,002,600	8,971,821	1,479,276 -		902,850	8,779,837 -		8,779,837	2,681,070			4,739,473			4,739,473	1,411,927		· ·
year	1.00							_			_	1								1 -1 -				1					
1 2	0.97 0.93					-	: :		: :						-	-:			-		-						-		-
3 4	0.90 0.87				-			_			-		- :			- :			-					-		- :	- :	- :	- :
6	0.84 0.81 0.79						: :								-						-					-			
8	0.76					-			: :		<u> </u>			- :	- :	- :			-	1 1				ļ		-	- :		
10	0.73 0.71 0.68										-				-	- :					-	-		-		-	- :	-	
12	0.66 0.64														-														
14 15	0.62 0.60					-							- :		-	-			- :	1 1	-	-				-	- :	-	-
16 17	0.58				-	-:-																		-		-			
18 19	0.54 0.52						: :									- :					1					-			
20 21	0.50 0.49					-	: :			1,986,039		142,800	1,986,039 142,800	998,115		69,340	3,690,420		3,690,420	1,854,679			1,895,490			1,895,490	952,609		
22 23	0.47 0.45								-			142,800 142,800	142,800 142,800			66,995 64,729				1 1						-		-	
24 25	0.44 0.42								: :			142,800 142,800	142,800 142,800 142,800	: :		62,540 60,425					-	-				- :	-	-	-
27 28	0.41 0.40 0.38				 							142,800 142,800 142,800	142,800 142,800 142,800			58,382 56,408 54,500													
29 30	0.37 0.36											142,800	142,800			52,657										-			
31 32	0.35 0.34					-									-				-		-							- :	-
33 34	0.33					-										-:			- :		-			-		- :	- :	-	-
35 36	0.31				ļ	-					-		-	- : :	-				-	- : - :	-	-					-	-	-
37 38	0.29 0.28					-			: :						-	:										:	- :		-
39 40	0.27 0.27					-				996,496		65,400	996,496	264,176		16,833	1,735,424		1,735,424	460,069		-	953,906			953,906	252,885		-
41 42	0.26 0.25											65,400 65,400	65,400 65,400 65,400		- 1	16,833 16,343 15,867			-:		- 1	-					- :	- 1	-
43 44 45	0.24 0.24 0.23											65,400 65,400 65,400 65,400 65,400 65,400 65,400	65,400 65,400 65,400			15,404 14,956 14,520													
46	0.22											65,400	65,400 65,400			14,520													
48 49	0.22 0.21 0.20					-					-	65,400 65,400	65,400 65,400 65,400		- :	14,097 13,687 13,288			-		- :	-		-			- :	- :	-
50 51	0.20 0.20 0.19							-	: :		-	65,400 65,400 65,400	65,400 65,400 65,400		-	13,288 12,901 12,525			-		-					-			-
52 53	0.19 0.18					-						65,400 65,400 65,400	65,400 65,400			12,160 11,806					-	-				-	- :		
54 55	0.18 0.17 0.17					-	: :		: :			65,400	65,400	- :	- :	11,462			-		- :	-				- :	- :	-	-
56 57	0.17 0.16 0.16														- 1	- :			-:		- 1	-					- :	- 1	-
59	0.15 0.15						: :							- :	-					1 1	-	-				- :			
61	0.14																												
63 64	0.13 0.13				-																			1					
65 66	0.13 0.12											ļ							-		-								
67 68	0.12 0.12					-																				- :			
70 70	0.11									1,986,685		128,700	1,986,685	216,985		13,647	3,353,992		3,353,992	966,322			1,890,078			1,890,078	206,434		
71 72	0.11 0.10 0.10				 		1 1					128,700 128,700 128,700	128,700 128,700 128,700	1 1		13,647 13,250 12,864			-		-					-			- 1
74 75	0.10											128,700 128,700 128,700	128,700 128,700			12,864 12,489 12,125													
76 77	0.09				 							128,700 128,700 128,700 128,700 128,700 128,700 128,700 128,700 128,700 128,700 128,700	128,700 128,700 128,700 128,700			11.000													
78 79	0.09				-	-:-						128,700 128,700	128,700 128,700			11,541 11,260 10,985 10,717							ļ	-		-		-	
80 81	0.08											128,700 128,700	128,700 128,700 128,700 128,700 128,700 128,700 128,700													-			
82 83	0.08 0.08					-						128,700 128,700	128,700 128,700			10,436 10,201 9,952 9,709				1 1						- :			
84 85	0.08 0.07					-	1 1					128,700	128,700			9,709			- :	- : :									
86 87	0.07 0.07 0.07																		- :	1 1						-			-
89	0.07 0.07 0.07																												
91	0.06				ļ							_																	
93	0.06				ļ											- :								-					
95 96	0.06					-									-	- :										-			
97 98	0.05 0.05														- :	:				1 1						-			
99	0.05																									-	-	-	T

Buy and rent back - buy all properties (capital cost) depending on the erosion band in which they sit and then rent them back

N	Original v		Year of	
,0,ASH COTTAGE,BEACH ROAD,BACTON	(from Stra	itegy)	loss	type
,0,ASH COTTAGE,BEACH ROAD,BACTON	£ 12	20,406	10	detached
,0,CABLE COTTAGE,BEACH ROAD,BACTON		7.471	10	detached
,0,CRANKS CASTLE,MILL LANE,BACTON		5,280	10	detached
,0,HERMITAGE,BEACH ROAD,BACTON		2,278	10	detached
,0,MORSE HOUSE,BEACH ROAD,BACTON		6,139	10	detached
,0,SEA EDGE,BEACH ROAD,BACTON		0,675	10	terraced
,0,SEABRINK,BEACH ROAD,BACTON		9,073	10	detached
,0,ST. OLAFS,BEACH ROAD,BACTON		20,405	10	semi-detached
,0,THE LEAS,MILL LANE,BACTON		4,537	10	detached
,6, ,NEWLANDS ESTATE,BACTON		30.270	10	detached
,7, ,NEWLANDS ESTATE,BACTON	-	4.537	10	detached
,76, ,NEWLANDS ESTATE,BACTON		30,270	10	detached
THE LEAS BEACH PARK,0, ,MILL LANE,BACTON	-	3,340	10	commercial
,77, ,NEWLANDS ESTATE,BACTON		30,270	15	detached
.78NEWLANDS ESTATE.BACTON		0.270	15	terraced
.79. NEWLANDS ESTATE BACTON	-	0,270	15	detached
,0,CREST-O-GLIFF,MILL LANE,BACTON		7,336	35	detached
,0,MIDSHALLOWS,BEACH ROAD,BACTON		7,471	35	detached
.0.THE WARREN.MILL LANE.BACTON		3.204	35	flat
,0,THE WARREN,MILL LANE,BACTON	£ 10	8,938	35	flat
,0,THE WARREN,MILL LANE,BACTON			35	
	£ 10	3,204		flat
,8, ,NEWLANDS ESTATE,BACTON		4,537	35	detached
,81, ,NEWLANDS ESTATE,BACTON		7,606	35	detached
,9, ,NEWLANDS ESTATE,BACTON		4,537	35	detached
REDHOUSE CHALET, PASTON ROAD, BACTON		9,073	35	commercial
,0,1 SOUTHHAVEN,BEACH ROAD,BACTON	£ 12	20,405	75	semi-detached
,0,2 SOUTHHAVEN,BEACH ROAD,BACTON	£ 11	4,672	75	semi-detached
,0,EASTWARD HO,PASTON ROAD,BACTON	£ 40	1,351	75	commercial
,0,THE WARREN,MILL LANE,BACTON	£ 11	4,672	75	flat
,0,VICTORIA,BEACH ROAD,BACTON	£ 10	3,204	75	detached
,10, ,NEWLANDS ESTATE,BACTON		3,069	75	detached
,11, ,NEWLANDS ESTATE,BACTON	£ 6	3,069	75	terraced
,44, ,NEWLANDS ESTATE,BACTON		6,139	75	detached
,46, ,NEWLANDS ESTATE,BACTON		30,270	75	detached
,70, ,NEWLANDS ESTATE,BACTON		0,270	75	detached
,71, ,NEWLANDS ESTATE,BACTON		6,004	75	detached
,72, ,NEWLANDS ESTATE,BACTON		7,471	75	detached
,73, ,NEWLANDS ESTATE,BACTON	_	1,872	75	detached
,80, ,NEWLANDS ESTATE,BACTON		30,270	75	detached
,83, ,NEWLANDS ESTATE,BACTON	£ 14	3,340	75	detached

Number of properties						
	Total number of		semi			
Year	properties	Detached	detached	terrace	flat	Commercial
0-20	15	12	1	2	0	1
21-50	8	5	0	0	3	1
51-100	14	10	2	1	1	1
	40	27	3	3	4	3

not included

Income from rent for NNDC					
Year	Detached	semi detached	terrace	flat	Total
0-20	£122,400	£7,800	£12,600	£0	£142,800
21-50	£51,000	03	£0	£14,400	£65,400
51-100	£102,000	£15,600	£6,300	£4,800	£128,700

It is assumed that the property cannot be rented the year that it is suppposed to erode

RENT VALUE	£/year
Detached (assumed 4 bed)	10,200
Semi-detached (assumed 3 bed)	7,800
Terrace (assumed 2 bed)	6,300
Flat (assumed 1 bed)	4,800

http://homes.findthebest.co.uk/l/648377/Vanguard-St-Helens-Road-Norwich-Norfolk-NR12-0LU

Property Values	Cost to	•		Ided to account intainence
Total Value	£	4,517,473	£	4,969,221
Value 0-20	£	1,805,490	£	1,986,039
Value 20-50	£	905,906	£	996,496
Value 50-100	£	1,806,078	£	1,986,685

Demolish, relocate and rebuild all properties	ties depending on	the erosion band in which they s	it.			
Year	Total number of properties	Detached	semi detached	terrace	flat Comm	ereiel iemene
0-20	15	12	1	2	0	ercial-ignore 1
21-50 51-100	8	5 10	0 2	0		1
Total		27	3	3	4	3
0-100 years						
Rebuild costs Average rebuild cost (m2)	Average house (m2)	3 bed houses Average semi detached house (m2)	Average terrace	2 bed flat Average Flat (m2)	Commercial	_
£2,000.00 Number of properties		105	96 3	70 4		
Cost per type of house	£6,480,000	£630,000		£560,000	£0.00	£8,246,000
Demolition costs		2 floors houses		1 floor flat		
Average demolition cost (per house from NNDC) £6,000.00	Average house (m3)	Average semi detached house (m3)	Average terrace	Average Flat (m3)	Commercial	
Number of properties	27	3	3	4	0	
Cost per type of house	£162,000.00	£18,000.00	£18,000.00	£24,000.00	£0.00	£222,000.00
Relocation costs Land purchase	Replacement (m2)	Type of land	Cost per m2	Cost	1	
Replacement of 333m2 per residential properties	333	Agricultural	£25.31	£311,837		
750 m2 per commercial properties	0			£0.00 £311,836.99		_
			TOTAL for 0-100 years	£8,779,837	1	
0.00				20,7 : 0,507		
0-20 years only Rebuild costs		3 bed houses		2 bed flat		
Average rebuild cost (m2) £2,000.00		Average semi detached house (m2) 105	Average terrace 96	Average Flat (m2) 70		
Number of properties	12	1	2	03	0	02 474 000
Cost per type of house	£2,880,000	£210,000	£384,000	£0	£0.00	£3,474,000
Demolition costs		2 floors houses		1 floor flat		
Average demolition cost (per house from NNDC) £6,000.00	Average house (m3)		Average terrace	Average Flat (m3)	Commercial	
Number of properties	12	1	2	0		
Cost per type of house	£72,000.00	£6,000.00	£12,000.00	20.00	£0.00	290,000.00
Relocation costs Land purchase	Replacement (m2)	Type of land	Cost per m2	Cost	1	_
Replacement of 333m2 per residential properties	333	Agricultural	£25.31	£126,420		_
750 m2 per commercial properties	0			£126,420.40		_
			TOTAL for 0-20 years	£3,690,420		_
20.50			TOTAL IOI O-LO YCUIS	20,030,420		
20-50 years only Rebuild costs		3 bed houses		2 bed flat		
Average rebuild cost (m2) £2,000.00		Average semi detached house (m2) 105	Average terrace 96	Average Flat (m2) 70		
Number of properties	£1,200,000	0	0	£420,000	00.03	£1,620,000
Cost per type of house	£1,200,000	2.0	20	£420,000	₹0.00	11,020,000
Demolition costs		2 floors houses		1 floor flat		
Average demolition cost (per house from NNDC) £6,000.00		Average semi detached house (m3)	Average terrace	Average Flat (m3)	Commercial	
Number of properties	5	0			0	
Cost per type of house	£30,000.00	£0.00	£0.00	£18,000.00	£0.00	£48,000.00
Relocation costs Land purchase	Replacement (m2)	Type of land	Cost per m2	Cost	1	
Replacement of 333m2 per residential properties	333	Agricultural	£25.31	£67,424]	
750 m2 per commercial properties	0			£67,424.21]	
			TOTAL for 20-50 years	£1,735,424	1	
50-100 years only						
Rebuild costs		3 bed houses		2 bed flat		
Average rebuild cost (m2) £2,000.00	Average house (m2) 120	Average semi detached house (m2) 105	Average terrace 96	Average Flat (m2) 70		
Number of properties Cost per type of house	£2,400,000	£420,000	£192,000	£140,000	00.03	£3,152,000
	22,700,000	2-120,000	2102,000	2170,000	20.00	20,.02,000
Demolition costs		2 floors houses		1 floor flat		
Average demolition cost (per house from NNDC) £6,000.00	Average house (m3)	Average semi detached house (m3)	Average terrace	Average Flat (m3)	Commercial	
Number of properties	10	2	1	1	0	004 000 00
Cost per type of house	£60,000.00	£12,000.00	£6,000.00	£6,000.00	20.00	£84,000.00
Relocation costs Land purchase	Replacement (m2)	Type of land	Cost per m2	Cost	1	
Replacement of 333m2 per residential properties		Agricultural	£25.31	£117,992	1	
750 m2 per commercial properties	U			£117,992.37	j	
			TOTAL for 50-100 years	£3,353,992	1	
			, , , , , , , , , , , , , , , , , , , ,			

FCRM spreadsheets (20-100 years for Walcott and Ostend)

FCDPAG3 Summary

North Nortic Destrict Council Project name Printed Project name Project nam	Project Summ	ary Sheet - Long te	rm adaptation	on (0-100 ye	ars)	
Propert analog				ī		22/05/2014
Section Avaication and Octored Coastal Management Study Section Sect				I .		11/07/2014 L Wiggins
Finglet reference Same date for estimate (year of) Scaling factor (e.g. fm. Ex. 8) Collement bias adjustment factor Costs and benefits of options Option number Option number Option file options Option number Option number Option file options Option fi		v		Ī		S Hampshire
Scaling lactor (e.g. Cm, Sk. E)	ence				Checked date	03/07/2014
Variable				(Ch-)
Discount Rate	(e.g. £m, £k, £)					rtits)
Option number						
Option number	s adjustment factor		60%			
Option number	nefits of options					
Do-nothing	er .	Ontion 1			0	0
Do-nothing	"	Option 1	Option 25	Option 20	Ŭ	Ü
Do-nothing				0 7		
Option name		De methina	Option 6			
Description name		Do-notning				Option 9 - buy, lease
AEP or SoP (where relevant) COSTS: PV capital costs PV copration and maintenance costs PV copration and maintenance costs PV copration and maintenance costs PV operation and maintenance costs PV contributions Total PV Costs texcluding contributions Total PV Costs texcluding contributions Total PV Costs textileng contributions into account O 6.072.343 21.260.788 10.100,375 BENEFITS: PV monelesed resided lood damages PV monelesed resided position damages avoided protected) PV monelesed resided position damages avoided protected) PV monelesed resided position damages PV monelesed resided pv benefits s DV damages (from tourism) Total monetised PV benefits s DV damages (from tourism) Total pV damages S Total pV benefits (from scoring and weighting and ecosystem services) Not Present Value NPV Average benefiticost ratio BCR DECISION-MAKING CRITERIA: **Recideng contributions** **Total pv benefits (excludes benefits from scoring and weighting and ecosystem services) Not Present Value NPV Average benefiticost ratio BCR Decident positions of the protection of the					un properties	and demolish of all
COSTS: PV capital costs			properties	properties		properties
PV capital costs 0 6,587,004 13,287,938 6,312,735 PV coperation and maintenance costs 0 0 0 0 0 0 0 0 0	where relevant)					
PV operation and maintenance costs	-1-		0.507.004	40.007.000	0.040.705	0.044.550
PV other						6,911,553
PV negative costs (e.g. sales) PV contributions Total PV Costs £ excluding contributions Total PV Costs £ excluding contributions 0 6.072,343 21,260,788 10,100,375 Total PV Costs £ ckind contributions into account 0 6.072,343 21,260,788 10,100,375 BENETTS: PV monetised flood damages worked PV monetised flood damages avoided PV monetised erosion damages 8.727,997 0 0 0 0 0 PV monetised erosion damages avoided PV monetised erosion damages avoided (protected) 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						
PV contributions			-,,	, ,	3,787,641	
Total PV Costs £ excluding contributions O		0	4,466,863	0	0	4,466,863
Total PV Costs £ taking contributions into account 0 6,072,343 21,280,788 10,100,375		0	6 072 3/2	21 260 799	10 100 375	6,591,622
BENETTS:			-,- ,			6,591,622
PV monetised rosin damages avoided S,729,975 S,579,075 S,5			, ,	, ,	, ,	
PV monetised erosino damages avoided (protected) 8,727,997 8,727,997 8,727,997 0 0 0 0 0 0 0 0 0		5,579,075				
Note 14,307,072 14,307,07		9 727 007	5,579,075	5,579,075	5,579,075	5,579,075
Total monetised PV damages £ 14,307,072 0 0 0 0 Total monetised PV benefits £ 14,307,072 14,307,072 14,307,072 1 PV damages (from tourism) Total PV damages £ 14,307,072 0 0 0 0 0 Total PV benefits £ 14,307,072 10 0 0 0 0 DECISION-MAKING CRITERIA: excluding contributions Based on total PV benefits (includes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Average benefit/cost ratio BCR Incremental benefit/cost ratio BCR Average benefit/cost ratio BCR Average benefit/cost ratio BCR Average benefit/cost ratio BCR Average benefit/cost ratio BCR Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Average benefit/cost ratio BCR Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Average benefit/cost ratio BCR Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Average benefit/cost ratio BCR Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value MPV Based on total P		0,727,597	8.727.997	8.727.997	8.727.997	8,727,997
Total PV damages £ Total PV benefits £ 14,307,072 0 0 0 0 0 Total PV benefits £ 14,307,072 14,307,072 14,307,072 14,307,072 1 DECISION-MAKING CRITERIA: excluding contributions Based on total PV benefits (includes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on total BCR Highest bor Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on total benefit/cost ratio BCR Incremental benefit/cost ratio BCR Average benefit cost ratio BCR Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services)	sed PV damages £	14,307,072	,	0	0	
Total PV damages £ Total PV benefits £ DECISION-MAKING CRITERIA: excluding contributions Based on total PV benefits (includes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio BCR Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Highest bcr Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Highest bcr Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Highest bcr Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Highest bcr Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Highest bcr Based on monetised PV benefits (excludes benefits from s			14,307,072	14,307,072	14,307,072	14,307,072
Total PV benefits £ DECISION-MAKING CRITERIA: excluding contributions Based on total PV benefits (includes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio BCR Average benefit/cost ratio BCR Incremental benefit/cost ratio BCR Incremental benefit/cost ratio BCR Average benefit/cost ratio BCR Incremental benefit/cost rati	(from tourism)					
Total PV benefits £ DECISION-MAKING CRITERIA: excluding contributions Based on total PV benefits (includes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio BCR Average benefit/cost ratio BCR Incremental benefit/cost ratio BCR Incremental benefit/cost ratio BCR Average benefit/cost ratio BCR Incremental benefit/cost rati						
DECISION-MAKING CRITERIA: excluding contributions		14,307,072				
Excluding contributions Based on total PV benefits (includes benefits from scoring and weighting and ecosystem services)			14,307,072	14,307,072	14,307,072	14,307,072
Based on total PV benefits (includes benefits from scoring and weighting and ecosystem services) Net Present Value NPV						
Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/s (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio BCR Including contributions Taking account of contributions (includes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Including contributions Taking account of contributions (includes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Average benefit/cost ratio IBCR Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Base		scoring and weighting and	ecosvstem servid	ces)		
Incremental benefit/cost ratio IBCR Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV 8,234,729 -6,953,717 4,206,696 Netrage benefit/cost ratio IBCR Including contributions Taking account of contributions (in cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV 8,234,729 -6,953,717 4,206,696 Average benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring an					4,206,696	7,715,450
Highest bcr Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Average benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Average benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 2 Option 2 Option 3 (Demolition, relocation and rebuild all of properties at year 15)			2.4			
Based on monetised PV benefits (excludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Including contributions Taking account of contributions (in cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio IBCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)	enefit/cost ratio IBCR		l limboot box		0.0	0.0
Net Present Value NPV Average benefit/cost ratio BCR Including contributions Taking account of contributions (in cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio BCR Incremental benefit/cost ratio BCR Incremental benefit/cost ratio BCR Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Highest bcr Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)			Highest but			
Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Including contributions Taking account of contributions (in cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)	onetised PV benefits (excludes benefits	from scoring and weightin	g and ecosystem	services)		
Incremental benefit/cost ratio IBCR Highest bcr Including contributions Taking account of contributions (in cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio IBCR Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)						
Highest bcr Including contributions Taking account of contributions (in cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Highest bcr Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Highest bcr Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)			2.4			
Including contributions Taking account of contributions (in cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 2 Option 2 Option 2 Option 3 (Demolition, relocation and rebuild all of properties at year 15)	enerit/cost ratio IBCR		Highest hor		0.0	0.0
Taking account of contributions (in cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV			r lightest bor			
Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Highest bcr Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c 8,234,729 -6,953,717 4,206,696						
Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)		from scoring and weighting			4 000 000	7.745.450
Incremental benefit/cost ratio IBCR Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)						7,715,450 2.2
Highest bcr Based on monetised PV benefits (ex cludes benefits from scoring and weighting and ecosystem services) Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c Highest bcr Do-nothing Option 2 (Purchase and lease of all properties after year 20) Option 3 (Demolition, relocation and rebuild all of properties at year 15)			2.4			0.0
Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)			Highest bcr			
Net Present Value NPV Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)						
Average benefit/cost ratio BCR Incremental benefit/cost ratio IBCR Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)		s from scoring and weighting			4 206 606	7,715,450
Incremental benefit/cost ratio IBCR Highest bcr Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2c Option 2 (Purchase and lease of all properties after year 20) Option 3 (Demolition, relocation and rebuild all of properties at year 15)						7,715,450
Best practicable environmental option (WFD) Brief description of options: Option 1 Option 2b Option 2 (Purchase and lease of all properties after year 20) Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)			2.4	-	1.4	-
Brief description of options: Option 1 Option 2b Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)			Highest bcr			
Brief description of options: Option 1 Option 2b Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)	ole environmental option (WED)				l	
Option 1 Option 2b Option 2c Option 2 (Purchase and lease of all properties after year 20) Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)	no onvironmental option (WFD)					<u> </u>
Option 1 Option 2b Option 2c Option 2 (Purchase and lease of all properties after year 20) Option 2 (Demolition, relocation and rebuild all of properties at year 15)	tion of options:					
Option 2c Option 3 (Demolition, relocation and rebuild all of properties at year 15)						
Comments and assumptions:		Option 3 (Demolit	ion, relocation and	rebuild all of prop	erties at year 15)	
Comments and assumptions:						
Comments and assumptions:						
Comments and assumptions:						
	nd assumptions:					

FCDPAG3 Erosion- Do nothing

Client/Au	uthority	Loss Calc	ulation Shee	t with delay	options		Sheet Nr.	2	
	rfolk District Council		Option:			Delay (yrs)	Prepared (da	te)	22/05/2014
Bacton, V	Walcott and Ostend Coastal Management Study		Option 2			100	Printed	ie)	12/05/2014
	reference te for estimates (year 0)	340681 year 0	Option 3 Option 4			100 100	Prepared by Checked by		L Wiggins S Hampshire
Scaling f	factor (e.g. £m, £k, £)	£	Option 5			100	Checked date	e	03/07/2014
Discount	t rate	3.5%							
			Year when the asset is		Do-nothing	Ex	pected value	of asset losse	s £
Ref	Asset	Risk free market value	expected to be lost	Prob of					
61 69	,0,1 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,8, ,OSTEND ROAD,WALCOTT	68802.96 63069.38	5	0.1	5,793.02 5,310.27				
70	,0,1 THE MOORLANDS, COAST ROAD, WALCOTT	103204.44	5	0.1	8,689.54				
71	,0,2 THE MOORLANDS,COAST ROAD,WALCOTT	103204.44	5	0.1	8,689.54				
73 75	,31, ,SEA VIEW ESTATE,BACTON ,0,SEAGOATS,THE CRESCENT,WALCOTT	29814.616 149073.08	5	0.1	2,510.31 12,551.55				
94	,1, ,HORIZON VIEWS,WALCOTT	97470.86	5	0.1	8,206.78				
98	,0,GAP END,ST. HELENS ROAD,WALCOTT .7OSTEND PLACE.WALCOTT	97470.86 137605.92	5	0.1	8,206.78				
105 106	,7, ,OSTEND PLACE,WALCOTT ,0,6 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	137605.92	5	0.1	11,586.05 5,793.02				
107	,0,JANTON,OSTEND GAP,WALCOTT	149073.08	5	0.1	12,551.55				-
108	,9, ,THE CRESCENT,WALCOTT	80270.12	5	0.1	6,758.53				
109 110	,5, ,OSTEND PLACE,WALCOTT ,4, ,OSTEND ROAD,WALCOTT	137605.92 63069.38	5	0.1	11,586.05 5,310.27				ļ
111	,0,1 MARYLAND,ARCHIBALD ROAD,WALCOTT	103204.44	5	0.1	8,689.54				
112 115	,0,HEYHOE,ARCHIBALD ROAD,WALCOTT ,1, ,BEAUCOURT PLACE,WALCOTT	68802.96 80270.12	5	0.1	5,793.02 6,758.53				
116	,4, ,OSTEND PLACE,WALCOTT	74536.54	5	0.1	6,275.78				
118 119	,0,SUMMERHOLME,COAST ROAD,WALCOTT POST OFFICE,0, ,COAST ROAD,WALCOTT	91737.28 223609.62	5 5	0.1	7,724.03 18,827.33				
122	,0,MYARD,WALCOTT ROAD,BACTON	74536.54	5	0.1	6,275.78				
123 125	,26, ,OSTEND PLACE,WALCOTT ,6, ,OSTEND ROAD,WALCOTT	126138.76 63069.38	5 5	0.1 0.1	10,620.55 5,310.27				
126	,0,GENESIS,OSTEND GAP,WALCOTT	97470.86	5	0.1	8,206.78				
127	,0,SEACLOSE,COAST ROAD,WALCOTT	68802.96	5	0.1	5,793.02				
128 129	,0,2 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,0,SEA SPRAY,THE CRESCENT,WALCOTT	68802.96 183474.56	5	0.1	5,793.02 15,448.07				
130	,0,SEA VIEW,COAST ROAD,WALCOTT	172007.4	5	0.1	14,482.56				
131	,3, ,OSTEND PLACE,WALCOTT .8THE CRESCENT,WALCOTT	137605.92 86003.7	5	0.1	11,586.05 7,241.28				
133	,0,4 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68802.96	5	0.1	5,793.02				
134 135	,0,THE RETREAT,ARCHIBALD ROAD,WALCOTT ,0,SUNDIAL COTTAGE,WATCH HOUSE LANE,BACTON	63069.38 86003.7	5 5	0.1	5,310.27 7,241.28				
136	,6, ,ANNE STANNARD WAY,BACTON	149073.08	5	0.1	12,551.55				
137	,7, ,ANNE STANNARD WAY,BACTON	149073.08	5	0.1	12,551.55				
138 139	,8, ,ANNE STANNARD WAY,BACTON ,9, ,ANNE STANNARD WAY,BACTON	149073.08 149073.08	5	0.1	12,551.55 12,551.55				
140	,10, ,ANNE STANNARD WAY,BACTON	149073.08	5	0.1	12,551.55				
141	,0,2 MARYLAND,ARCHIBALD ROAD,WALCOTT ,7, ,OSTEND ROAD,WALCOTT	103204.44	5	0.1	8,689.54 5.310.27				-
146	,0,MORNING MIST,THE CRESCENT,WALCOTT	74536.54	5	0.1	6,275.78				
147 148	,0,GOLDEN SANDS,OSTEND ROAD,WALCOTT KINGFISHER CAFE,0, ,COAST ROAD,WALCOTT	74536.54 223609.62	5	0.1	6,275.78 18,827.33				
149	,34, ,SEA VIEW ESTATE,BACTON	29814.616	5	0.1	2,510.31				
150 151	,5, ,OSTEND ROAD,WALCOTT ,2, ,OSTEND PLACE,WALCOTT	63069.38 137605.92	5	0.1	5,310.27 11,586.05				
152	,0,CALM SEAS,OSTEND ROAD,WALCOTT	80270.12	5	0.1	6,758.53				-
153 154	,33, ,SEA VIEW ESTATE,BACTON ,0,FISHERMANS COTTAGE,COAST ROAD,WALCOTT	29814.616	5	0.1	2,510.31				
155	,0,41 WALCOTT CARAVAN PARK,COAST	34401.48 114671.6	5	0.1	2,896.51 9,655.04				
156	,1, ,OSTEND PLACE,WALCOTT	137605.92	5	0.1	11,586.05				
157 158	,0,TIGH-NA-MARA,WATCH HOUSE LANE,BACTON ,0,WYNDHAM,ARCHIBALD ROAD,WALCOTT	160540.24 80270.12	5	0.1	13,517.06 6,758.53				
159	,0,CLIFF VIEW,ARCHIBALD ROAD,WALCOTT	91737.28	5	0.1	7,724.03				
160 161	,6, ,SEA VIEW ESTATE,BACTON ,4, ,BEAUCOURT PLACE,WALCOTT	172007.4 91737.28	5	0.1	14,482.56 7,724.03				
162	,6, ,BEAUCOURT PLACE,WALCOTT	91737.28	5	0.1	7,724.03				
163 164	,2, ,BEAUCOURT PLACE,WALCOTT ,3, ,BEAUCOURT PLACE,WALCOTT	91737.28 91737.28	5	0.1	7,724.03 7,724.03				
165	,5, ,BEAUCOURT PLACE,WALCOTT	91737.28	5	0.1	7,724.03				
166 167	,16, ,HORIZON VIEWS,WALCOTT	86003.7	5	0.1	7,241.28				
168	,15, ,HORIZON VIEWS,WALCOTT ,13, ,HORIZON VIEWS,WALCOTT	86003.7 126138.76	5	0.1	7,241.28 10,620.55				
169	,14, ,HORIZON VIEWS,WALCOTT	126138.76	5	0.1	10,620.55				
170 171	,0,SPINDRIFT,THE CRESCENT,WALCOTT ,0,THE FLINT HOUSE,OSTEND PLACE,WALCOTT	74536.54 326814.06	5	0.1	6,275.78 27,516.87			-	
172	,6, ,OSTEND PLACE,WALCOTT	143339.5	5	0.1	12,068.80				
173 174	,0,BEACONS GLEAM,COAST ROAD,WALCOTT ,0,LITTLE HOUSE,COAST ROAD,WALCOTT	74536.54 57335.8	5	0.1	6,275.78 4,827.52				
175	,7, ,SEA VIEW ESTATE,BACTON	86003.7	5	0.1	7,241.28				
176 178	,0,3 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,0,5 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68802.96 68802.96	5	0.1	5,793.02 5,793.02				
179	,0,LOTHLORIEN,COAST ROAD,WALCOTT	108938.02	5	0.1	9,172.29				
180 181	,0,STONE GABLES,COAST ROAD,WALCOTT ,8, ,SEA VIEW ESTATE,BACTON	108938.02 74536.54	5	0.1	9,172.29 6,275.78				
181	,32, ,SEA VIEW ESTATE,BACTON	74536.54 29814.616	5	0.1	6,275.78 2,510.31				
183	,0,STONE GABLES,COAST ROAD,WALCOTT	108938.02	5	0.1	9,172.29				
201 61	erosion of B1159 ,0,1 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	1248856.79 68802.96	5 10	0.1	105,150.39 39,020.57				
69	,8, ,OSTEND ROAD,WALCOTT	63069.38	10	0.8	35,768.86				
70 71	,0,1 THE MOORLANDS,COAST ROAD,WALCOTT ,0,2 THE MOORLANDS,COAST ROAD,WALCOTT	103204.44 103204.44	10	0.8	58,530.86 58,530.86				
73	,31, ,SEA VIEW ESTATE,BACTON	29814.616	10	0.8	16,908.91				
75 94	,0,SEAGOATS,THE CRESCENT,WALCOTT	149073.08	10	0.8	84,544.57				
98	,1, ,HORIZON VIEWS,WALCOTT ,0,GAP END,ST. HELENS ROAD,WALCOTT	97470.86 97470.86	10	0.8	55,279.14 55,279.14				
105	,7, ,OSTEND PLACE,WALCOTT	137605.92	10	0.8	78,041.14				
106 107	,0,6 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,0,JANTON,OSTEND GAP,WALCOTT	68802.96 149073.08	10	0.8	39,020.57 84,544.57				
108	,9, ,THE CRESCENT,WALCOTT	80270.12	10	0.8	45,524.00				
109 110	,5, ,OSTEND PLACE,WALCOTT ,4, ,OSTEND ROAD,WALCOTT	137605.92 63069.38	10	0.8	78,041.14 35,768.86				
111	,0,1 MARYLAND,ARCHIBALD ROAD,WALCOTT	103204.44	10	0.8	58,530.86				
112	,0,HEYHOE,ARCHIBALD ROAD,WALCOTT	68802.96	10	0.8	39,020.57				
115	,1, ,BEAUCOURT PLACE,WALCOTT	80270.12	10	0.8	45,524.00				
116	,4, ,OSTEND PLACE,WALCOTT	74536.54	10	0.8	42,272.28				
118	,0,SUMMERHOLME,COAST ROAD,WALCOTT	91737.28	10	0.8	52,027.43				
118	,0,SUMMERHOLME,COAST HOAD,WALCOTT POST OFFICE,0, ,COAST ROAD,WALCOTT	91737.28 223609.62	10	0.8	52,027.43 126,816.85				
119	,0,MYARD,WALCOTT ROAD,BACTON	223609.62 74536.54	10	0.8	126,816.85 42,272.28				
144	, U, WITAND, WALOUTT HUND, BAUTUN	74030.04	10	0.8	71,537.71				

			Pres	ent Value Costs for all options										Sheet Nr.	10		
Client/Authorit North Norfolk Dis Project name	y strict Ca							Results £						Prepared (da	te)	14/05/2014	
Project name Bacton, Walcott Project referens Base date for es Scaling factor (e. Initial discount ra	and Ost ce	,		Option 1 Do-nothing			Option 2		Option 3 7 - Demolition, relocation and re	build all ad assessment	P	Option 4 ry and Demolish Buy, R 6,312,735	Option 5 nt and Demolish 11,378	Printed Prepared by Checked by Checked date		L Wiggins S Hampshire 41,823	
Scaling factor (e. Initial discount ra	ampear g.£i£ de	J	PV total costs								Ви	6,312,735 Buy, H					
	O Do	N TIPIPIPI	Option 2 Option (6 - Purchase and lease of all properties	TOTALS: PV	PV	PV PV	Option 3 Option 7 -	Demolition, relocation and rebuild a	Il of properties	TOTALS:		Option 4	Buy and Dem		TOTALS:	PV PV PV
	C: M	0 G C M 0 9	Capital Maint.	Other Negative costs	Cash Capital 6 587 004	Maint	Negative Other costs	Capital Maint.	Other	Negative costs	Cash 20 021 620	Capital Maint Other cos	ative Capital	Maint.	Other costs	Cash	Capital Maint Other
Discount			20,351,228	- 17,508,000	37,859,228 6,587,004		- 4,466,863	38,921,628 -			38,921,628	13,287,993	19,449	,116 - 1		19,449,116	6,312,735
pear Factor # 1.000 1 0.966		+ +++				- :			-			1 1 1					- : : :
2 0.934 3 0.902 4 0.871 5 0.842 6 0.814	2					- :										:	- : : :
5 0.842 6 0.914																	
7 0.786 8 0.759 9 0.734	5					- :											
9 0.734 10 0.709						- :											
12 0.662	2					- :											
13 0.639 14 0.618 15 0.597	3																
15 0.597 16 0.577 17 0.557	7																
18 0.538 19 0.520			8,689,699			- :	- : :	18,822,958				9,459,777	8,361	707		8,361,727	4,202,318
20 0.503 21 0.486 22 0.469	3		8,689,699	723,600 723,600	8,689,699 4,367,146 723,600 -		351,359 339,477	18,822,958			18,822,958	9,939,///	8,361	,141		8,361,727	9,602,318
23 0.453 24 0.438 25 0.423 26 0.409				723,600	723,600 - 723,600 -	- :	327,997										
25 0.423 26 0.409 27 0.395				723,600 723,600 723,600 723,600	723,600 - 723,600 - 723,600 -	- :	- 306,189 - 295,835 - 285,831										- : - : - :
27 0.395 28 0.382 29 0.369	2			723,600 723,600 723,600	723,600 - 723,600 - 723,600 -		- 285,831 - 276,165 - 266,826										
30 0.356 31 0.346 32 0.336	5					- :	-:-					- : : :					- : - : - :
32 0.336 33 0.326 34 0.317	5					- :											
											:					<u> </u>	
37 0.290 38 0.281										 		1 1 1					
39 0.273 40 0.265	3		6,069,797		6,069,797 1,609,131	- :		10,475,977			10,475,977	2,777,230	5,769	,997		5,769,997	1,529,653
40 0.265 41 0.257 42 0.250				411,600 411,600 411,600 411,600	411,600 - 411,600 -	- :	- 105,939 - 102,853					1 1					- : : :
43 0.243 44 0.236 45 0.225				411.600	411,600	- 1	99,858 99,949 94,125 91,384 88,722 86,138 83,629										
46 0.222	1 1			411,600	411,600	- :	91,384 88,722					: : :					
48 0.209 49 0.203 50 0.197				411,600 411,600	411,600 - 411,600 - 411,600 -	- :	- 86,138 - 83,629					1 1 1					- : : :
51 0.192 52 0.186				411,600 411,600 411,600 411,600	411,600 - 411,600 -		- 81,193 - 78,828 - 76,533										
53 0.181 54 0.175	5			411,600 411,600	411,600 - 411,600 -	:	- 74,303 - 72,139					1 1 1	-				
55 0.170						- :						1 1 1					
58 0.156 59 0.151													-				
60 0.147 61 0.143						- :						<u> </u>		_			- : - : - :
66 0.123 67 0.115 68 0.116																	
69 0.112 70 0.109			5,591,731		5,591,731 610,727	- :		9,622,693			9,622,693	1,050,987	5,317	,392		5,317,392	580,763
72 0.103	3			373,800 373,800 373,800	373,800 - 373,800 - 373,800 -		- 39,637 - 38,483 - 37,362										
				373,800 373,800 373,800 373,800 373,800 373,800	373,800 -		- 37,362 - 36,274 - 35,217										
77 0.092	+			373,800 373,800	373,800 - 373,800 - 373,800 -	- :	- 35,217 - 34,358 - 33,520										
78 0.087 79 0.085 80 0.083	++	++++		373,800 373,800 373,800	373,800 - 373,800 - 373,800 -		- 32,703 - 31,905 - 31,127				-						
81 0.081 82 0.075 83 0.077				373,800 373,800	373,800 - 373,800 -		- 30,368 - 29,627			ļ			-:				
84 0.075				373,800 373,800	373,800 - 373,800 -	- :	- 28,904 - 28,199						-:-				
85 0.074 86 0.072 87 0.070						- :											
88 0.068 89 0.067																	
90 0.065 91 0.063 92 0.062	5					- :											
92 0.062 93 0.060 94 0.059																	
95 0.057																	
96 0.055 97 0.055 98 0.053 99 0.052																	
99 0.052	2																

Ref	nt back - buy all properties (capital cost) depending on the	Risk free market value	asset is expected to be lost	Prob of erosion	Zoopla typ
111 61	,0,1 MARYLAND,ARCHIBALD ROAD,WALCOTT ,0,1 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	103204.44 68802.96	5 5	0.1	semi detached
70 141	,0,1 THE MOORLANDS,COAST ROAD,WALCOTT ,0,2 MARYLAND,ARCHIBALD ROAD,WALCOTT	103204.44 103204.44	5 5	0.1	semi semi
128 71	,0,2 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,0,2 THE MOORLANDS,COAST ROAD,WALCOTT	68802.96 103204.44	5 5	0.1	detached semi
176 133 155	,0,3 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,0,4 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,0,41 WALCOTT CARAVAN PARK,COAST ROAD,WALCOTT	68802.96 68802.96 114671.6	5 5	0.1 0.1 0.1	detached terraced
178 106	.0,5 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT .0,6 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68802.96 68802.96	5	0.1	semi terraced detached
173	.0,BEACONS GLEAM,COAST ROAD,WALCOTT .0,CALM SEAS,OSTEND ROAD,WALCOTT	74536.54 80270.12	5	0.1	detached
159	,0,CLIFF VIEW,ARCHIBALD ROAD,WALCOTT	91737.28	5	0.1	semi detached
154 98	,0,FISHERMANS COTTAGE,COAST ROAD,WALCOTT ,0,GAP END,ST. HELENS ROAD,WALCOTT	34401.48 97470.86	5	0.1	detached
126 147	,0,GENESIS,OSTEND GAP,WALCOTT ,0,GOLDEN SANDS,OSTEND ROAD,WALCOTT	97470.86 74536.54	5	0.1	detached
112	,0,HEYHOE,ARCHIBALD ROAD,WALCOTT ,0,JANTON,OSTEND GAP,WALCOTT ,0,LITTLE HOUSE,COAST ROAD,WALCOTT	68802.96 149073.08	5	0.1	detached
174 179 146	.0,L0THLE HOUSE,COAST ROAD,WALCOTT .0,L0THLORIEN,COAST ROAD,WALCOTT .0,MORNING MIST,THE CRESCENT,WALCOTT	57335.8 108938.02 74536.54	5 5	0.1 0.1 0.1	detached semi detached
122	,0,MYARD,WALCOTT ROAD,BACTON	74536.54	5	0.1	detacried
129	,0,SEA SPRAY,THE CRESCENT,WALCOTT	183474.56	5	0.1	detached detached
130 127 75	,0,SEA VIEW,COAST ROAD,WALCOTT ,0,SEACLOSE,COAST ROAD,WALCOTT ,0,SEAGOATS,THE CRESCENT,WALCOTT	172007.4 68802.96 149073.08	5	0.1 0.1 0.1	detached
170	,0,SPINDRIFT,THE CRESCENT,WALCOTT	74536.54	5 5	0.1 0.1	detached
180 183	,0,STONE GABLES,COAST ROAD,WALCOTT ,0,STONE GABLES,COAST ROAD,WALCOTT	108938.02 108938.02	5	0.1	detached detached
118	,0,SUMMERHOLME,COAST ROAD,WALCOTT ,0,SUNDIAL COTTAGE,WATCH HOUSE LANE,BACTON	74536.54 86003.7	5	0.1	detached semi
171 134	,0,THE FLINT HOUSE,OSTEND PLACE,WALCOTT ,0,THE RETREAT,ARCHIBALD ROAD,WALCOTT	326814.06 63069.38	5 5	0.1 0.1	detached detached
157 158	,0,TIGH-NA-MARA,WATCH HOUSE LANE,BACTON ,0,WYNDHAM,ARCHIBALD ROAD,WALCOTT	160540.24 80270.12	5 5	0.1 0.1	detached detached
15	,1, BEAUCOURT PLACE, WALCOTT ,1, HORIZON VIEWS, WALCOTT	80270.12 97470.86	5	0.1	detached semi
56 40	,1, ,OSTEND PLACE,WALCOTT ,10, ,ANNE STANNARD WAY,BACTON	137605.92 149073.08	5	0.1	detached
168 169	,13, ,HORIZON VIEWS,WALCOTT ,14, ,HORIZON VIEWS,WALCOTT	126138.76 126138.76	5 5	0.1 0.1	semi semi
67 66	,15, ,HORIZON VIEWS,WALCOTT ,16, ,HORIZON VIEWS,WALCOTT	86003.7 86003.7	5 5	0.1 0.1	semi semi
63 51	,2, ,BEAUCOURT PLACE,WALCOTT ,2, ,OSTEND PLACE,WALCOTT	91737.28 137605.92	5 5	0.1 0.1	detached detached
123 164	,26, ,OSTEND PLACE,WALCOTT ,3, ,BEAUCOURT PLACE,WALCOTT	126138.76 91737.28	5 5	0.1 0.1	detached detached
131 73	,3, ,OSTEND PLACE,WALCOTT ,31, ,SEA VIEW ESTATE,BACTON	137605.92 29814.616	5 5	0.1 0.1	detached detached
82 53	,32, ,SEA VIEW ESTATE,BACTON ,33, ,SEA VIEW ESTATE,BACTON	29814.616 29814.616	5	0.1	detached detached
49 61	,34, ,SEA VIEW ESTATE,BACTON ,4, ,BEAUCOURT PLACE,WALCOTT	29814.616 91737.28	5 5	0.1 0.1	detached semi
116 110	.4, ,OSTEND PLACE,WALCOTT .4, ,OSTEND ROAD,WALCOTT	74536.54 63069.38	5 5	0.1 0.1	detached terraced
65 09	.5, BEAUCOURT PLACE, WALCOTT .5, OSTEND PLACE, WALCOTT	91737.28 137605.92	5	0.1	semi detached
50 36	,5, ,OSTEND ROAD,WALCOTT ,6, ,ANNE STANNARD WAY,BACTON	63069.38 149073.08	5	0.1	terraced detached
62	.6., BEAUCOURT PLACE, WALCOTT .6., OSTEND PLACE, WALCOTT	91737.28	5	0.1	detached
25	.6., OSTEND ROAD,WALCOTT .6., SEA VIEW ESTATE,BACTON	63069.38 172007.4	5	0.1	terraced detached
37	.7. "ANNE STANNARD WAY,BACTON ,7. "OSTEND PLACE,WALCOTT	149073.08 137605.92	5	0.1	detached
145 175	.7., OSTEND POAD, WALCOTT .7., OSTEND ROAD, WALCOTT .7., SEA VIEW ESTATE, BACTON	63069.38 86003.7	5	0.1	terraced detached
138	,8, ,ANNE STANNARD WAY,BACTON	149073.08 63069.38	5	0.1	detached
181	,8, ,SEA VIEW ESTATE,BACTON	74536.54	5	0.1	detached
132	,8, ,THE CRESCENT,WALCOTT ,9, ,ANNE STANNARD WAY,BACTON	86003.7 149073.08	5	0.1	detached
148	,9, ,THE CRESCENT,WALCOTT KINGFISHER CAFE,0, ,COAST ROAD,WALCOTT POST OFFICE 0, COAST ROAD WALCOTT	80270.12 223609.62	5	0.1	detached detached detached
119	,0,1 MARYLAND,ARCHIBALD ROAD,WALCOTT	223609.62 103204.44	5 10	0.1	semi
61 70	.0,1 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT .0,1 THE MOORLANDS,COAST ROAD,WALCOTT	68802.96 103204.44 103204.44	10	0.8	detached semi semi
141	,0,2 MARYLAND,ARCHIBALD ROAD,WALCOTT ,0,2 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68802.96	10	0.8	detached
71 176	,0,2 THE MOORLANDS,COAST ROAD,WALCOTT ,0,3 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	103204.44 68802.96	10 10	0.8	semi detached
155	.0.4 SPINDRIFT, SEAVIEW CRESCENT, WALCOTT .0.41 WALCOTT CARAVAN PARK, COAST ROAD, WALCOTT .0.5 SPINDRIFT SEAVIEW CRESCENT WALCOTT	68802.96 114671.6	10	0.8	terraced semi
178 106	,0,6 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68802.96 68802.96	10	0.8	detached
173 152	,0,BEACONS GLEAM,COAST ROAD,WALCOTT ,0,CALM SEAS,OSTEND ROAD,WALCOTT	74536.54 80270.12	10	0.8	detached semi
159 154	,0,CLIFF VIEW,ARCHIBALD ROAD,WALCOTT ,0,FISHERMANS COTTAGE,COAST ROAD,WALCOTT	91737.28 34401.48	10 10	0.8	detached detached
98 126	,0,GAP END,ST. HELENS ROAD,WALCOTT ,0,GENESIS,OSTEND GAP,WALCOTT	97470.86 97470.86	10 10	0.8	detached detached
47 12	,0,GOLDEN SANDS,OSTEND ROAD,WALCOTT ,0,HEYHOE,ARCHIBALD ROAD,WALCOTT	74536.54 68802.96	10 10	0.8	detached detached
174	,0,JANTON,OSTEND GAP,WALCOTT ,0,LITTLE HOUSE,COAST ROAD,WALCOTT	149073.08 57335.8	10	0.8	detached detached
79 46	,0,LOTHLORIEN,COAST ROAD,WALCOTT ,0,MORNING MIST,THE CRESCENT,WALCOTT	108938.02 74536.54	10 10	0.8	semi detached
22 29	,0,MYARD,WALCOTT ROAD,BACTON ,0,SEA SPRAY,THE CRESCENT,WALCOTT	74536.54 183474.56	10 10	0.8	detached detached
30 27	,0,SEA VIEW,COAST ROAD,WALCOTT ,0,SEACLOSE,COAST ROAD,WALCOTT	172007.4 68802.96	10 10	0.8	detached detached
75 170	,0,SEAGOATS,THE CRESCENT,WALCOTT ,0,SPINDRIFT,THE CRESCENT,WALCOTT	149073.08 74536.54	10 10	0.8	detached detached
80 83	,0,STONE GABLES,COAST ROAD,WALCOTT ,0,STONE GABLES,COAST ROAD,WALCOTT	108938.02 108938.02	10 10	0.8	detached detached
18 35	,0,SUMMERHOLME,COAST ROAD,WALCOTT ,0,SUNDIAL COTTAGE,WATCH HOUSE LANE,BACTON	74536.54 86003.7	10 10	0.8	detached semi
71 34	,0,THE FLINT HOUSE, OSTEND PLACE, WALCOTT ,0,THE RETREAT, ARCHIBALD ROAD, WALCOTT	326814.06 63069.38	10 10	0.8	detached detached
57 58	,0,TIGH-NA-MARA,WATCH HOUSE LANE,BACTON ,0,WYNDHAM,ARCHIBALD ROAD,WALCOTT	160540.24 80270.12	10 10	0.8	detached detached
15 4	,1, ,BEAUCOURT PLACE,WALCOTT ,1, ,HORIZON VIEWS,WALCOTT	80270.12 97470.86	10 10	0.8	detached semi
56 40	,1, ,OSTEND PLACE,WALCOTT ,10, ,ANNE STANNARD WAY,BACTON	137605.92 149073.08	10	0.8	detached detached
68	,13, ,HORIZON VIEWS,WALCOTT ,14, ,HORIZON VIEWS,WALCOTT	126138.76 126138.76	10	0.8	semi semi
67	,15, HORIZON VIEWS,WALCOTT ,16, HORIZON VIEWS,WALCOTT	86003.7 86003.7	10	0.8	semi semi
63 51	,2, BEAUCOURT PLACE, WALCOTT ,2, OSTEND PLACE, WALCOTT	91737.28 137605.92	10	0.8	detached detached
23	,26, ,OSTEND PLACE,WALCOTT ,3, ,BEAUCOURT PLACE,WALCOTT	126138.76 91737.28	10	0.8	detached detached
31	.3. OSTEND PLACE,WALCOTT .31, SEA VIEW ESTATE,BACTON	137605.92 29814.616	10	0.8	detached
82 53	.31, .SEA VIEW ESTATE,BACTON .33, .SEA VIEW ESTATE,BACTON	29814.616 29814.616	10	0.8	detached detached
49	,35, ,3EA VIEW ESTATE,BACTON ,34, ,SEA VIEW ESTATE,BACTON ,4, ,BEAUCOURT PLACE,WALCOTT	29814.616 91737.28	10	0.8	detached
16	,4, ,OSTEND PLACE,WALCOTT	74536.54	10 10 10	0.8	detached
65	,5, ,BEAUCOURT PLACE,WALCOTT	63069.38 91737.28	10	0.8	terraced semi
50	,5, OSTEND PLACE,WALCOTT ,5, OSTEND ROAD,WALCOTT	137605.92 63069.38	10	0.8	detached terraced
36 62	,6, ,ANNE STANNARD WAY,BACTON ,6, ,BEAUCOURT PLACE,WALCOTT	149073.08 91737.28	10	0.8	detached detached
72 25	,6, ,OSTEND PLACE,WALCOTT ,6, ,OSTEND ROAD,WALCOTT	143339.5 63069.38	10	0.8	detached terraced
60 37	,6, ,SEA VIEW ESTATE,BACTON ,7, ,ANNE STANNARD WAY,BACTON	172007.4 149073.08	10 10	0.8	detached detached
05 45	,7, ,OSTEND PLACE,WALCOTT ,7, ,OSTEND ROAD,WALCOTT	137605.92 63069.38	10 10	0.8	detached terraced
75	.7, SEA VIEW ESTATE,BACTON .8, ANNE STANNARD WAY,BACTON	86003.7 149073.08	10	0.8	detached
	,8, ,OSTEND ROAD,WALCOTT	63069.38	10	0.8	semi

Number of properties						
Year	Total number of properties		semi detached	terrace	flat	Commercial
0-20	77	55	16	6	0	
21-50	42	35	7	0	0	
51-100	39	29	10	0	0	
Total	158	119	33	6	0	1

Income from rent for NNDC					
Year	Detached	semi detached	terrace	flat	Total
0-20	£561,000	£124,800	£37,800	93	£723,600
21-50	£357,000	£54,600	£0	£0	£411,600
51-100	£295,800	£78,000	60	£0	£373,800

| 51-100 | £295,800 | £78,000 | It is assumed that the property cannot be rented the year that it is suppposed to erode

RENT VALUE	£/year
Detached (assumed 4 bed)	10,200
Semi-detached (assumed 3 bed)	7,800
Terrace (assumed 2 bed)	6,300
Flat (assumed 1 bed)	4,800

http://homes.findthebest.co.uk/l/648377/Vanguard-St-Helens-Road-Norwich-Norfolk-NR12-0LL

Property Values	purchase all	10% added to account for maintainence
Totla Value	18,501,116	20,351,228
Tola 0-20	7,899,727	8,689,699
Total 20-50	5,517,997	6,069,797
Total 50-100	5,083,392	5,591,731

32 39	,8, ,THE CRESCENT,WALCOTT ,9, ,ANNE STANNARD WAY,BACTON	86003.7 149073.08	10 10	0.8	detached detached
08 48	,9, ,THE CRESCENT,WALCOTT KINGFISHER CAFE,0, ,COAST ROAD,WALCOTT	80270.12 223609.62	10 10	0.8	detached detached
19 11	POST OFFICE.0, .COAST ROAD,WALCOTT ,0,1 MARYLAND,ARCHIBALD ROAD,WALCOTT	223609.62 103204.44	10	0.8	detached
1	.0,1 SPINDRIFT, SEAVIEW CRESCENT, WALCOTT	68802.96	15	0.1	semi detached
11	,0,1 THE MOORLANDS,COAST ROAD,WALCOTT ,0,2 MARYLAND,ARCHIBALD ROAD,WALCOTT	103204.44 103204.44	15 15	0.1 0.1	semi semi
28	,0,2 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,0,2 THE MOORLANDS,COAST ROAD,WALCOTT	68802.96 103204.44	15 15	0.1	detached semi
76 33	,0,3 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,0,4 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68802.96 68802.96	15 15	0.1	detached terraced
55	,0,41 WALCOTT CARAVAN PARK,COAST ROAD,WALCOTT	114671.6	15	0.1	semi
78 06	,0,5 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT ,0,6 SPINDRIFT,SEAVIEW CRESCENT,WALCOTT	68802.96 68802.96	15 15	0.1	terraced detached
73	,0,BEACONS GLEAM,COAST ROAD,WALCOTT ,0,CALM SEAS,OSTEND ROAD,WALCOTT	74536.54 80270.12	15 15	0.1	detached semi
59	,0,CLIFF VIEW,ARCHIBALD ROAD,WALCOTT	91737.28	15	0.1	detached
3	,0,FISHERMANS COTTAGE,COAST ROAD,WALCOTT ,0,GAP END,ST. HELENS ROAD,WALCOTT	34401.48 97470.86	15 15	0.1	detached detached
26 17	,0,GENESIS,OSTEND GAP,WALCOTT	97470.86 74536.54	15 15	0.1	detached detached
12	,0,HEYHOE,ARCHIBALD ROAD,WALCOTT	68802.96	15 15	0.1	detached
4	,0,JANTON,OSTEND GAP,WALCOTT ,0,LITTLE HOUSE,COAST ROAD,WALCOTT	149073.08 57335.8	15	0.1	detached
79 16	,0,LOTHLORIEN,COAST ROAD,WALCOTT ,0,MORNING MIST,THE CRESCENT,WALCOTT	108938.02 74536.54	15 15	0.1	semi detached
22	,0,MYARD,WALCOTT ROAD,BACTON ,0,SEA SPRAY,THE CRESCENT,WALCOTT	74536.54 183474.56	15 15	0.1 0.1	detached detached
30	,0,SEA VIEW,COAST ROAD,WALCOTT	172007.4	15	0.1	detached
27 5	,0,SEACLOSE,COAST ROAD,WALCOTT ,0,SEAGOATS,THE CRESCENT,WALCOTT	68802.96 149073.08	15 15	0.1	detached detached
70 30	,0,SPINDRIFT,THE CRESCENT,WALCOTT ,0,STONE GABLES,COAST ROAD,WALCOTT	74536.54 108938.02	15 15	0.1	detached detached
33	,0,STONE GABLES,COAST ROAD,WALCOTT	108938.02 74536.54	15 15	0.1	detached
18 35	,0,SUMMERHOLME,COAST ROAD,WALCOTT ,0,SUNDIAL COTTAGE,WATCH HOUSE LANE,BACTON	86003.7	15	0.1	detached semi
71 34	,0,THE FLINT HOUSE,OSTEND PLACE,WALCOTT ,0,THE RETREAT,ARCHIBALD ROAD,WALCOTT	326814.06 63069.38	15 15	0.1	detached
57	,0,TIGH-NA-MARA,WATCH HOUSE LANE,BACTON	160540.24	15	0.1	detached
5	,0,WYNDHAM,ARCHIBALD ROAD,WALCOTT ,1, ,BEAUCOURT PLACE,WALCOTT	80270.12 80270.12	15 15	0.1	detached detached
i6	,1, ,OSTEND PLACE,WALCOTT ,10, ,ANNE STANNARD WAY,BACTON	137605.92 149073.08	15 15	0.1 0.1	detached detached
8	,13, ,HORIZON VIEWS,WALCOTT	126138.76	15	0.1	semi
i9 i7	,14, ,HORIZON VIEWS,WALCOTT ,15, ,HORIZON VIEWS,WALCOTT	126138.76 86003.7	15 15	0.1	semi semi
i6 i3	.16, HORIZON VIEWS,WALCOTT .2, BEAUCOURT PLACE,WALCOTT	86003.7 91737.28	15 15	0.1	semi detached
1	,2, ,OSTEND PLACE,WALCOTT	137605.92	15	0.1	detached
:3 :4	,26, ,OSTEND PLACE,WALCOTT ,3, ,BEAUCOURT PLACE,WALCOTT	126138.76 91737.28	15 15	0.1	detached detached
1	,3, ,OSTEND PLACE,WALCOTT	137605.92 29814.616	15 15	0.1	detached
2	,32, ,SEA VIEW ESTATE,BACTON	29814.616	15	0.1	detached
i3 I9	,33, ,SEA VIEW ESTATE,BACTON ,34, ,SEA VIEW ESTATE,BACTON	29814.616 29814.616	15 15	0.1	detached detached
1	,4, ,BEAUCOURT PLACE,WALCOTT	91737.28	15	0.1	semi detached
16 10	,4, ,OSTEND PLACE,WALCOTT ,4, ,OSTEND ROAD,WALCOTT	74536.54 63069.38	15	0.1	terraced
55 19	,5, ,BEAUCOURT PLACE,WALCOTT ,5, ,OSTEND PLACE,WALCOTT	91737.28 137605.92	15 15	0.1	semi detached
50 86	,5, ,OSTEND ROAD,WALCOTT ,6, ,ANNE STANNARD WAY,BACTON	63069.38 149073.08	15 15	0.1	terraced detached
2	,6, ,BEAUCOURT PLACE,WALCOTT	91737.28	15	0.1	detached
'2 !5	,6, ,OSTEND PLACE,WALCOTT ,6, ,OSTEND ROAD,WALCOTT	143339.5 63069.38	15 15	0.1	detached terraced
i0	,6, ,SEA VIEW ESTATE,BACTON ,7, ,ANNE STANNARD WAY,BACTON	172007.4 149073.08	15 15	0.1 0.1	detached detached
37 05	,7, ,OSTEND PLACE,WALCOTT	137605.92	15	0.1	detached
15 75	,7, ,OSTEND ROAD,WALCOTT ,7, ,SEA VIEW ESTATE,BACTON	63069.38 86003.7	15 15	0.1	terraced detached
88	.8, ANNE STANNARD WAY, BACTON .8, OSTEND ROAD, WALCOTT	149073.08 63069.38	15 15	0.1	detached semi
31	,8, ,SEA VIEW ESTATE,BACTON	74536.54	15	0.1	detached
32 39	,8, ,THE CRESCENT,WALCOTT ,9, ,ANNE STANNARD WAY,BACTON	86003.7 149073.08	15 15	0.1	detached detached
18 18	,9, ,THE CRESCENT,WALCOTT KINGFISHER CAFE,0, ,COAST ROAD,WALCOTT	80270.12 223609.62	15 15	0.1	detached detached
19	POST OFFICE,0, ,COAST ROAD,WALCOTT	223609.62 97470.86	15	0.1	detached
2	,0,1 LIFEBOAT COTTAGES,KESWICK ROAD,BACTON	91737.28	20 30	0.1	semi semi
1	,0,2 LIFEBOAT COTTAGES,KESWICK ROAD,BACTON ,0,38 WALCOTT CARAVAN PARK,COAST ROAD,WALCOTT	91737.28 57335.8	30	0.1	semi commercia
9	,0,ANCHORAGE,KESWICK ROAD,BACTON ,0,ARFRADA,KESWICK ROAD,BACTON	97470.86 0	30 30	0.1	detached detached
)	,0,BARN COTTAGE,WATCH HOUSE LANE,BACTON	309613.32	30	0.1	detached
3	,0,BRELIN,ARCHIBALD ROAD,WALCOTT ,0,CLIFF BUNGALOW,KESWICK ROAD,BACTON	108938.02 91737.28	30	0.1	semi detached
?	,0,COAST BUNGALOW,KESWICK ROAD,BACTON	120405.18 108938.02	30 30	0.1	detached
i	,0,EVENING SUN,THE CRESCENT,WALCOTT	74536.54	30	0.1	detached
)	,0,EVENTIDE,THE CRESCENT,WALCOTT ,0,FALAIG M HARA,WATCH HOUSE LANE,BACTON	149073.08 97470.86	30 30	0.1	detached detached
2	,0,NAGOR,KESWICK ROAD,BACTON ,0,PIED-A-TERRE,KESWICK ROAD,BACTON	172007.4 126138.76	30 30	0.1 0.1	detached detached
7	.0,POACHERS POCKET,WALCOTT ROAD,BACTON	344014.8	30	0.1	detached
)3)4	,0,POPPYDEW,ARCHIBALD ROAD,WALCOTT ,0,SANDIACRE,WALCOTT ROAD,BACTON	137605.92 74536.54	30 30	0.1	detached detached
	,0,THE FOLLY,OSTEND GAP,WALCOTT ,0,THE HAVEN,OSTEND GAP,WALCOTT	120405.18 120405.18	30 30	0.1	detached detached
3	,0,TIDEWAYS,COAST ROAD,WALCOTT	91737.28	30	0.1	detached
00 3	,10, ,HORIZON VIEWS,WALCOTT ,11, ,ANNE STANNARD WAY,BACTON	172007.4 149073.08	30 30	0.1 0.1	detached detached
1	,11, HORIZON VIEWS,WALCOTT ,12, ANNE STANNARD WAY,BACTON	172007.4 149073.08	30 30	0.1	detached detached
3	,12, ,HORIZON VIEWS,WALCOTT	172007.4	30	0.1	detached
)	,17, ,ANNE STANNARD WAY,BACTON ,18, ,ANNE STANNARD WAY,BACTON	149073.08 149073.08	30 30	0.1 0.1	detached detached
i ;	,2, ,ANNE STANNARD WAY,BACTON ,2, ,HORIZON VIEWS,WALCOTT	86003.7 97470.86	30 30	0.1 0.1	detached semi
i	,27, ,OSTEND PLACE,WALCOTT	120405.18	30	0.1	detached
1	,3, ,ANNE STANNARD WAY,BACTON ,3, ,HORIZON VIEWS,WALCOTT	74536.54 97470.86	30 30	0.1 0.1	semi
 	,30, ,SEA VIEW ESTATE,BACTON ,7, ,THE CRESCENT,WALCOTT	29814.616 126138.76	30 30	0.1	detached semi
)	.8, OSTEND PLACE, WALCOTT .9, ,HORIZON VIEWS, WALCOTT	154806.66 172007.4	30 30	0.1	detached
i	,9, ,SEA VIEW ESTATE,BACTON	29814.616	30	0.1	detached
15 16	13 ANNE STANDARD WAY, BACTON 14 ANNE STANDARD WAY, BACTON	200675.3 149073.08	30 30	0.1	detached detached
37 38	15 ANNE STANDARD WAY, BACTON 16 ANNE STANDARD WAY, BACTON	149073.08 149073.08	30 30	0.1	detached detached
1	EASTWAYS RESIDENTIAL HOME,0, ,WALCOTT	183474.56	30	0.1	
!	ROAD,BACTON ,0,1 LIFEBOAT COTTAGES,KESWICK ROAD,BACTON	91737.28	35	0.8	detached semi
	,0,2 LIFEBOAT COTTAGES, KESWICK ROAD, BACTON ,0,38 WALCOTT CARAVAN PARK, COAST ROAD, WALCOTT	91737.28 57335.8	35 35	0.8	semi commercia
	,0,ANCHORAGE,KESWICK ROAD,BACTON	97470.86	35	0.8	detached
)	,0,ARFRADA,KESWICK ROAD,BACTON ,0,BARN COTTAGE,WATCH HOUSE LANE,BACTON	0 309613.32	35 35	0.8	detached detached
	,0,BRELIN,ARCHIBALD ROAD,WALCOTT ,0,CLIFF BUNGALOW,KESWICK ROAD,BACTON	108938.02 91737.28	35 35	0.8	semi detached
	,0,COAST BUNGALOW,KESWICK ROAD,BACTON	120405.18	35	0.8	detached
	,0,DANWAY,ARCHIBALD ROAD,WALCOTT ,0,EVENING SUN,THE CRESCENT,WALCOTT	108938.02 74536.54	35 35	0.8	semi detached
	,0,EVENTIDE,THE CRESCENT,WALCOTT ,0,FALAIG M HARA,WATCH HOUSE LANE,BACTON	149073.08 97470.86	35 35	0.8	detached detached
	,0,NAGOR,KESWICK ROAD,BACTON	172007.4	35	0.8	detached
?	,0,PIED-A-TERRE,KESWICK ROAD,BACTON ,0,POACHERS POCKET,WALCOTT ROAD,BACTON	126138.76 344014.8	35 35	0.8	detached detached
03	,0,POPPYDEW,ARCHIBALD ROAD,WALCOTT	137605.92	35	0.8	detached
)4	,0,SANDIACRE,WALCOTT ROAD,BACTON ,0,THE FOLLY,OSTEND GAP,WALCOTT	74536.54 120405.18	35 35	0.8	detached detached
3	,0,THE HAVEN,OSTEND GAP,WALCOTT ,0,TIDEWAYS,COAST ROAD,WALCOTT	120405.18 91737.28	35 35	0.8	detached detached
	,10, HORIZON VIEWS,WALCOTT ,11, ANNE STANNARD WAY,BACTON	172007.4	35	0.8	detached
	LL ANNE STANNARD WAY BACTON	149073.08	35	0.8	detached detached
)1	,11, ,HORIZON VIEWS,WALCOTT	172007.4	35	0.8	
5)1	,11, ,HORIZON VIEWS,WALCOTT ,12, ,ANNE STANNARD WAY,BACTON	149073.08	35	0.8	detached
00 5 01 5 3 7	,11, ,HORIZON VIEWS,WALCOTT				detached detached detached detached

65 90	,27, ,OSTEND PLACE,WALCOTT ,3, ,ANNE STANNARD WAY,BACTON	120405.18 74536.54	35 35	0.8	detached
96 89	,3, ,HORIZON VIEWS,WALCOTT ,30, ,SEA VIEW ESTATE,BACTON	97470.86 29814.616	35 35	0.8	semi detached
97	,7, ,THE CRESCENT,WALCOTT ,8, ,OSTEND PLACE,WALCOTT	126138.76 154806.66	35 35	0.8	semi detached
19	.9, .HORIZON VIEWS,WALCOTT .9, .SEA VIEW ESTATE,BACTON	172007.4 29814.616	35 35	0.8	detached
85	13 ANNE STANDARD WAY, BACTON	200675.3	35	0.8	detached
186 187	14 ANNE STANDARD WAY, BACTON 15 ANNE STANDARD WAY, BACTON	149073.08 149073.08	35 35	0.8	detached detached
188 38	16 ANNE STANDARD WAY, BACTON EASTWAYS RESIDENTIAL HOME,0, ,WALCOTT	149073.08 183474.56	35 35	0.8	detached
62	ROAD,BACTON .0.1 LIFEBOAT COTTAGES.KESWICK ROAD,BACTON	91737.28	40	0.1	detached semi
B3	,0,2 LIFEBOAT COTTAGES,KESWICK ROAD,BACTON	91737.28	40	0.1	semi
41 60	,0,38 WALCOTT CARAVAN PARK,COAST ROAD,WALCOTT ,0,ANCHORAGE,KESWICK ROAD,BACTON	57335.8 97470.86	40 40	0.1	detached
59 29	,0,ARFRADA,KESWICK ROAD,BACTON ,0,BARN COTTAGE,WATCH HOUSE LANE,BACTON	0 309613.32	40	0.1	detached detached
64 58	,0,BRELIN,ARCHIBALD ROAD,WALCOTT ,0,CLIFF BUNGALOW,KESWICK ROAD,BACTON	108938.02 91737.28	40 40	0.1	semi detached
92	.0,COAST BUNGALOW,KESWICK ROAD,BACTON .0.DANWAY,ARCHIBALD ROAD,WALCOTT	120405.18	40	0.1	detached
4 76	,0,EVENING SUN,THE CRESCENT,WALCOTT	108938.02 74536.54	40 40	0.1	semi detached
16 30	,0,EVENTIDE,THE CRESCENT,WALCOTT ,0,FALAIG M HARA,WATCH HOUSE LANE,BACTON	149073.08 97470.86	40 40	0.1	detached detached
74	,0,NAGOR,KESWICK ROAD,BACTON	172007.4	40	0.1	detached detached
52 87	,0,PIED-A-TERRE,KESWICK ROAD,BACTON ,0,POACHERS POCKET,WALCOTT ROAD,BACTON	126138.76 344014.8	40	0.1 0.1	detached
103 104	,0,POPPYDEW,ARCHIBALD ROAD,WALCOTT ,0,SANDIACRE,WALCOTT ROAD,BACTON	137605.92 74536.54	40 40	0.1	detached detached
79 78	,0,THE FOLLY,OSTEND GAP,WALCOTT .0,THE HAVEN,OSTEND GAP,WALCOTT	120405.18 120405.18	40	0.1	detached detached
68 100	,0,TIDEWAYS,COAST ROAD,WALCOTT ,10, ,HORIZON VIEWS,WALCOTT	91737.28 172007.4	40	0.1	detached
26	,11, ,ANNE STANNARD WAY,BACTON	149073.08	40	0.1	detached detached
101 25	,11, ,HORIZON VIEWS,WALCOTT ,12, ,ANNE STANNARD WAY,BACTON	172007.4 149073.08	40 40	0.1	detached detached
93 27	,12, ,HORIZON VIEWS,WALCOTT ,17, ,ANNE STANNARD WAY,BACTON	172007.4 149073.08	40 40	0.1 0.1	detached detached
80	,18, ,ANNE STANNARD WAY,BACTON	149073.08	40	0.1	detached
24 95	,2, ,ANNE STANNARD WAY,BACTON ,2, ,HORIZON VIEWS,WALCOTT	86003.7 97470.86	40 40	0.1	detached semi
65 90	,27, ,OSTEND PLACE,WALCOTT ,3, ,ANNE STANNARD WAY,BACTON	120405.18 74536.54	40 40	0.1 0.1	detached detached
96 89	,3, ,HORIZON VIEWS,WALCOTT ,30, .SEA VIEW ESTATE.BACTON	97470.86 29814.616	40 40	0.1	semi detached
97	,7, ,THE CRESCENT,WALCOTT	126138.76	40	0.1	semi
91 99	,8, ,OSTEND PLACE,WALCOTT ,9, ,HORIZON VIEWS,WALCOTT	154806.66 172007.4	40 40	0.1	detached detached
85 185	.9, .SEA VIEW ESTATE,BACTON 13 ANNE STANDARD WAY, BACTON	29814.616 200675.3	40 40	0.1	detached
186	14 ANNE STANDARD WAY, BACTON 15 ANNE STANDARD WAY, BACTON	149073.08 149073.08	40 40	0.1	detached
187	16 ANNE STANDARD WAY, BACTON	149073.08	40	0.1	detached detached
88	EASTWAYS RESIDENTIAL HOME,0, ,WALCOTT ROAD,BACTON	183474.56	40	0.1	detached
23 42	,0,BAKERSFIELD,ANNE STANNARD WAY,BACTON ,0,COAST VIEW,OSTEND GAP,WALCOTT	172007.4 91737.28	70 70	0.1 0.1	detached
46	,0,IVY COTTAGE,ST. HELENS ROAD,WALCOTT	0 137605.92	70 70 70	0.1	semi
40 13	,0,MONREPOSE,KESWICK ROAD,BACTON ,0,REST-A-WHILE,THE CRESCENT,WALCOTT	143339.5	70	0.1	detached detached
7	,0,RIVENDELL,COAST ROAD,WALCOTT ,0,SELINA,ARCHIBALD ROAD,WALCOTT	97470.86 34401.48	70 70	0.1	detached semi
49 1	,0,SPRINGTIDE COTTAGE,HELENA ROAD,WALCOTT ,0,SPRINGTIME COTTAGE,COAST ROAD,WALCOTT	114671.6 137605.92	70 70	0.1	detached
32	,0,WINDBRACE,THE CRESCENT,WALCOTT	97470.86	70	0.1	detached
37 22	,1, ,OSTEND ROAD,WALCOTT ,10, ,OSTEND PLACE,WALCOTT	80270.12 126138.76	70 70	0.1	semi detached
2 18	,10, ,SEA VIEW ESTATE,BACTON ,11, ,OSTEND PLACE,WALCOTT	29814.616 126138.76	70 70	0.1 0.1	detached detached
14	,12, ,OSTEND PLACE,WALCOTT	126138.76	70	0.1	detached
5 43	,13, ,OSTEND PLACE,WALCOTT ,14, ,OSTEND PLACE,WALCOTT	126138.76 126138.76	70 70	0.1	detached detached
31 38	,15, ,OSTEND PLACE,WALCOTT ,2, ,OSTEND ROAD,WALCOTT	126138.76 91737.28	70 70	0.1	detached semi
21	,22, ,OSTEND ROAD,WALCOTT	63069.38	70 70	0.1	detached
20 51	,28, ,OSTEND PLACE,WALCOTT	131872.34 120405.18	70	0.1 0.1	detached
10 45	,29, ,SEA VIEW ESTATE,BACTON .4HORIZON VIEWS.WALCOTT	29814.616	70 70	0.1	detached semi
6 55	,6, ,THE CRESCENT,WALCOTT ,8, ,HORIZON VIEWS,WALCOTT	131872.34 97470.86	70 70	0.1	semi semi
39	,9, ,OSTEND PLACE,WALCOTT	126138.76	70	0.1	detached
36 190	,9, ,OSTEND ROAD,WALCOTT 1,ANNE STANDARD WAY, BACTON	63069.38 149073.08	70 70	0.1	semi detached
197 199	5,SEA VIEW ESTATE,BACTON FOUR WINDS,WALCOTT RD,BACTON	29814.616 91737.28	70 70	0.1	detached detached
194 192	L AMOURETTE, COAST RD, BACTON LA SIESTA, ARCHIBALD RD, WALCOTT	149073.08 177740.98	70 70	0.1	detached semi
9	RED HOUSE CHALET & CARAVAN PARK,0, ,PASTON	630693.8	70	0.1	
191	ROAD,BACTON SALAMAT, ARCHIBALD RD, WALCOTT	57335.8	70	0.1	commercia semi
196 195	SAMPHIRE, OSTEND GAP, WALCOTT SEACROFT, MILL LANE, BACTON	172007.4 516022.2	70 70	0.1	detached
193	SHIP INN, COAST RD, BACTON WYNNGATE.THE CRESCENT.WALCOTT	263744.68	70	0.1	detached
198 23	,0,BAKERSFIELD,ANNE STANNARD WAY,BACTON	97470.86 172007.4	70 75	0.1	detached detached
42 46	,0,COAST VIEW,OSTEND GAP,WALCOTT .0.IVY COTTAGE.ST. HELENS ROAD,WALCOTT	91737.28	75 75	0.8	detached semi
40	,0,MONREPOSE,KESWICK ROAD,BACTON	137605.92	75 75	0.8	detached
13 7	,0,REST-A-WHILE,THE CRESCENT,WALCOTT ,0,RIVENDELL,COAST ROAD,WALCOTT	143339.5 97470.86	75	0.8	detached
3 49	,0,SELINA,ARCHIBALD ROAD,WALCOTT ,0,SPRINGTIDE COTTAGE,HELENA ROAD,WALCOTT	34401.48 114671.6	75 75	0.8	semi detached
1 32	,0,SPRINGTIME COTTAGE,COAST ROAD,WALCOTT ,0,WINDBRACE,THE CRESCENT,WALCOTT	137605.92	75 75	0.8	detached
37	,1, ,OSTEND ROAD,WALCOTT	80270.12	75	0.8	semi
22 2	,10, ,OSTEND PLACE,WALCOTT ,10, ,SEA VIEW ESTATE,BACTON	126138.76 29814.616	75 75	0.8	detached detached
18 14	,11, ,OSTEND PLACE,WALCOTT ,12, ,OSTEND PLACE,WALCOTT	126138.76 126138.76	75 75	0.8	detached detached
5 43	.13, .OSTEND PLACE, WALCOTT .14, .OSTEND PLACE, WALCOTT	126138.76 126138.76	75 75	0.8	detached
31	,15, ,OSTEND PLACE,WALCOTT	126138.76	75	0.8	detached
38 21	,2, ,OSTEND ROAD,WALCOTT ,22, ,OSTEND ROAD,WALCOTT	91737.28 63069.38	75 75	0.8	semi detached
20 51	,25, ,OSTEND PLACE,WALCOTT ,28, ,OSTEND PLACE,WALCOTT	131872.34 120405.18	75 75	0.8	detached detached
10	29, SEA VIEW ESTATE, BACTON 4. HORIZON VIEWS, WALCOTT	29814.616	75 75	0.8	detached
6	.6THE CRESCENT.WALCOTT	131872.34	75	0.8	semi
55 39	,8, ,HORIZON VIEWS,WALCOTT ,9, ,OSTEND PLACE,WALCOTT	97470.86 126138.76	75 75	0.8	semi detached
36 190	.9, OSTEND ROAD, WALCOTT 1,ANNE STANDARD WAY, BACTON	63069.38 149073.08	75 75	0.8	semi detached
197	5,SEA VIEW ESTATE,BACTON	29814.616	75	0.8	detached
199 194	FOUR WINDS, WALCOTT RD, BACTON L AMOURETTE, COAST RD, BACTON	91737.28 149073.08	75 75	0.8	detached detached
192	LA SIESTA, ARCHIBALD RD, WALCOTT RED HOUSE CHALET & CARAVAN PARK,0, ,PASTON	177740.98 630693.8	75 75	0.8	semi
	ROAD, BACTON				commercia
191 196	SALAMAT, ARCHIBALD RD, WALCOTT SAMPHIRE, OSTEND GAP, WALCOTT	57335.8 172007.4	75 75	0.8	semi detached
195 193	SEACROFT, MILL LANE, BACTON SHIP INN, COAST RD, BACTON	516022.2 263744.68	75 75	0.8	detached
198	WYNNGATE, THE CRESCENT, WALCOTT	97470.86	75	0.8	detached
23 42	,0,BAKERSFIELD,ANNE STANNARD WAY,BACTON ,0,COAST VIEW,OSTEND GAP,WALCOTT	172007.4 91737.28	80 80	0.1 0.1	detached detached
46 40	JOJIVY COTTAGE, ST. HELENS ROAD, WALCOTT JOJMONREPOSE, KESWICK ROAD, BACTON	0 137605 92	80 80	0.1	semi detached
13	,0,REST-A-WHILE,THE CRESCENT,WALCOTT	143339.5	80	0.1	detached
	,0,RIVENDELL,COAST ROAD,WALCOTT ,0,SELINA,ARCHIBALD ROAD,WALCOTT	97470.86 34401.48	80 80	0.1	detached semi
7 3	,0,SPRINGTIDE COTTAGE,HELENA ROAD,WALCOTT	114671.6	80 80	0.1	detached
7 3 49	0 SPRINGTIME COTTAGE COAST DOAD WALCOTT			U.I	
7 3 49 1 32	,0,SPRINGTIME COTTAGE,COAST ROAD,WALCOTT ,0,WINDBRACE,THE CRESCENT,WALCOTT	137605.92 97470.86	80	0.1	detached
7 3 49 1 32 37	.0.SPRINGTIME COTTAGE, COAST ROAD, WALCOTT .0.WINDBRACE, THE CRESCENT, WALCOTT .1., OSTEND ROAD, WALCOTT .10., OSTEND PLACE, WALCOTT		80 80 80	0.1 0.1 0.1	semi detached
7 3 49 1 32 37 22 2	.0.SPRINGTIME COTTAGE.COAST ROAD.WALCOTT .0.WINDBRACE.THE CRESCENT,WALCOTT .1., OSTEND ROAD.WALCOTT .10, OSTEND PLACE,WALCOTT .10, CSTEND PLACE,WALCOTT .10, LSE A VIEW ESTATE.BACTON	97470.86 80270.12 126138.76 29814.616	80 80 80	0.1 0.1 0.1	semi detached detached
7 3	.0.SPRINGTIME COTTAGE, COAST ROAD, WALCOTT .0.WINDBRACE, THE CRESCENT, WALCOTT .1., OSTEND ROAD, WALCOTT .10., OSTEND PLACE, WALCOTT	97470.86 80270.12 126138.76	80 80	0.1 0.1	semi detached

38	,2, ,OSTEND ROAD,WALCOTT	91737.28	80	0.1	semi
21	,22, ,OSTEND ROAD,WALCOTT	63069.38	80	0.1	detached
20	,25, ,OSTEND PLACE,WALCOTT	131872.34	80	0.1	detached
51	,28, ,OSTEND PLACE,WALCOTT	120405.18	80	0.1	detached
10	,29, ,SEA VIEW ESTATE,BACTON	29814.616	80	0.1	detached
45	,4, ,HORIZON VIEWS,WALCOTT	0	80	0.1	semi
6	,6, ,THE CRESCENT,WALCOTT	131872.34	80	0.1	semi
55	,8, ,HORIZON VIEWS,WALCOTT	97470.86	80	0.1	semi
39	,9, ,OSTEND PLACE,WALCOTT	126138.76	80	0.1	detached
36	,9, ,OSTEND ROAD,WALCOTT	63069.38	80	0.1	semi
190	1,ANNE STANDARD WAY, BACTON	149073.08	80	0.1	detached
197	5,SEA VIEW ESTATE,BACTON	29814.616	80	0.1	detached
199	FOUR WINDS, WALCOTT RD, BACTON	91737.28	80	0.1	detached
194	L AMOURETTE, COAST RD, BACTON	149073.08	80	0.1	detached
192	LA SIESTA, ARCHIBALD RD, WALCOTT	177740.98	80	0.1	semi
9	RED HOUSE CHALET & CARAVAN PARK,0, ,PASTON	630693.8	80	0.1	
	ROAD, BACTON				commercia
191	SALAMAT, ARCHIBALD RD, WALCOTT	57335.8	80	0.1	semi
196	SAMPHIRE, OSTEND GAP, WALCOTT	172007.4	80	0.1	detached
195	SEACROFT, MILL LANE, BACTON	516022.2	80	0.1	detached
193	SHIP INN, COAST RD, BACTON	263744.68	80	0.1	detached
198	WYNNGATE, THE CRESCENT, WALCOTT	97470.86	80	0.1	detached

Demolish, relocate and rebuild all propert	ies depending on t	he erosion band in which they si	it.			
Number of properties	Total number of					
Year 0-20	properties 77	Detached 55	semi detached 16	terrace 6		ommercial-ignore
21-50	42	35	7	0	0	0
51-100	39 158	29 119	10			1
0.100 years					_	
0-100 years Rebuild costs		3 bed houses		2 bed flat		
Average rebuild cost (m2) £2,000.00	Average house (m2) 120	Average semi detached house (m2) 105	Average terrace 96		Commercial	
Number of properties	119	33	6	0		
Cost per type of house	£28,560,000	£6,930,000	£1,152,000	03	0.00	£36,642,000
Demolition costs		2 floors houses		1 floor flat		
Average demolition cost (per house from NNDC) £6,000.00	Average house (m3)	Average semi detached house (m3)	Average terrace	Average Flat (m3)	Commercial	
Number of properties	119	33	6		00.00	2040.000.00
Cost per type of house	£714,000.00	£198,000.00	£36,000.00	£0.00	20.00	£948,000.00
Relocation costs Land purchase	Replacement (m2)	Type of land	Cost per m2	Cost	1	
Replacement of 333m2 per residential properties		Agricultural	£ 25.31	£ 1,331,628		
750 m2 per commercial properties	0		1	£0.00 £1,331,628		
]	
			TOTAL for 0-100 years	£38,921,628		_
0-20 years only		Ohadhaar		lo had flat		
Rebuild costs Average rebuild cost (m2)	Average house (m2)	3 bed houses Average semi detached house (m2)	Average terrace	2 bed flat Average Flat (m2)	Commercial	
£2,000.00	120	105	96	70		
Number of properties Cost per type of house	55 £13,200,000	16 £3,360,000		-	20.00	£17,712,000
Demolition costs		2 floors houses		1 floor flat		
Average demolition cost (per house from NNDC)	Average house (m3)	Average semi detached house (m3)	Average terrace	Average Flat (m3)	Commercial	
£6,000.00 Number of properties	<u>1</u> 55	1 16	1	1 0	1	
Cost per type of house	£330,000.00	£96,000.00	£36,000.00		£0.00	£462,000.00
Relocation costs	1					
Land purchase		Type of land	Cost per m2	Cost		
Replacement of 333m2 per residential properties 750 m2 per commercial properties	333	Agricultural	£25.31	£648,958		
p p-p				£648,958.06		
			TOTAL for 0-20 years	£18,822,958		
20-50 years only	_					
Rebuild costs		3 bed houses		2 bed flat		
Average rebuild cost (m2) £2,000.00	Average house (m2) 120	Average semi detached house (m2) 105	Average terrace 96		Commercial	
Number of properties	35 £8,400,000	7 £1,470,000	0		0.00	£9,870,000
Cost per type of house	£8,400,000	£1,470,000	20	2.0	£0.00	29,870,000
Demolition costs		2 floors houses		1 floor flat		
Average demolition cost (per house from NNDC)	Average house (m3)		Average terrace		Commercial	
£6,000.00 Number of properties	35	1 	1 0	1 0	0	
Cost per type of house	£210,000.00	£42,000.00	00.03		20.03	£252,000.00
Relocation costs					_	
Land purchase		Type of land	Cost per m2 £25.31	Cost £353,977		
Replacement of 333m2 per residential properties 750 m2 per commercial properties	0	Agricultural	1,25.31			
				£353,977	l	
			TOTAL for 20-50 years	£10,475,977		
50-100 years only						
Rebuild costs	Average haves (m0)	3 bed houses Average semi detached house (m2)	Average terress	2 bed flat	Commorais!	
Average rebuild cost (m2) £2,000.00		Average semi detached nouse (m2) 105	Average terrace 96	Average Flat (m2) 70	Commercial	
Number of properties Cost per type of house	29 £6,960,000	10 £2,100,000	0			000,000,02
Cost pol type of flouse	10,900,000	12,100,000	1.0	£U	20.00	29,000,000
Demolition costs		2 floors houses		1 floor flat		
Average demolition cost (per house from NNDC)	Average house (m3)	Average semi detached house (m3)	Average terrace	Average Flat (m3)	Commercial	
£6,000.00 Number of properties	1 29	10	1 0	1 0	1 0	
Cost per type of house	£174,000.00	260,000.00	00.03			£234,000.00
Relocation costs	<u>1</u>				_	
Land purchase Replacement of 333m2 per residential properties	Replacement (m2)	Type of land Agricultural	Cost per m2 £25.31	Cost £328,693		
750 m2 per commercial properties	0	rignoultural	1,25.31			
			<u> </u>	£328,693.04	J	
			TOTAL for 50-100 years	£9,622,693		

FCRM spreadsheets (sensitivity tests for Bacton)

8 di and Chierd Coastal Manager estimate (a.p. ca. f. c. f.	Do realing Maint.	014	Negative costs	Cash	Capits M		PV	PV Negative costs	PV total costs Option 2 Copies 4.969.221 1,986.039	Opton 6 Put Maint.		Negative costs 6,919,500 142,800	TOTALS:	PV PV PV Copital Maint 2,400,009 1 1,516,276 1 1 1,516,276 1 1 1,516,276 1 1 1,516,276 1 1 1,516,276 1 1 1,516,276 1 1 1,516,276 1 1 1,516,276 1 1 1,516,276 1 1 1,516,276 1 1 1,516,276 1 1 1 1,516,276 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Option 2 urchase and lease of 6,194,44 FV FV Negative Other 2,794,41 1,131,300 1,131,3	Option 5 Opti		MegaPive	TOTALS: PV Capital T1 507 251 2.568,876 T1 507 251	PV PJ PJ NA
Capital Cap	Do-nothing	0 ng	Negative costs	Cash	Capit: M	laint	Other	PV Negative costs	Option 2 Capital 4,369,221 1,986,039	Opton 6 Put Maint.	Other	of all properties) (42.800 (1	TOTALS: Cash 11,665,021 11,665,021 11,665,021 140,000 142,00	Copts) Main 2,490,099 1,516,279 1,516,	wrehase and lease of a 1944 (1	Capital Mail 1, 191221 1, 19		MegaPive	Cash Capital 11.907.021 2.006.906 2.076.039 2.006.906 2.076.039 2.006.936 14.000 14.000 14.2000 14.2000	Maint Other Con
Capital Cap	Do-nothing		Negative costs	Cash	Capit: M	laint	Other	PV Negative costs	Option 2 Capital 4,369,221 1,986,039	Opton 6 Put Maint.	Other	Negative costs 6,919,500 142,800	TOTALS: Cash 11,665,021 11,665,021 11,665,021 140,000 142,00	Copts) Main 2,490,099 1,516,279 1,516,	PV PV Regative costs 2.794.11 PV	Capital Mail 1, 191221 1, 19		MegaPive	Cash Capital 11.907.021 2.006.906 2.076.039 2.006.906 2.076.039 2.006.936 14.000 14.000 14.2000 14.2000	Maint Other Con
Capital Capita			Negative costs	Cash	Capit: M	laint	Other	PV Regative costs:	Copital 4,969,251	Maint	Other	Negative costs 6,919,500 142,800	Cash 11.885.021 11.885.021 11.885.021 11.885.021 11.285	Copts) Main 2,490,099 1,516,279 1,516,	Chies	Capital Main (1974) 1		MegaPive	Cash Capital 11.907.021 2.006.906 2.076.039 2.006.906 2.076.039 2.006.936 14.000 14.000 14.2000 14.2000	Maint Other Con
20	Maint.	Other	Negative costs	Cosh	Capits M		Other	Negative costs	1,986,033		Other	6,715,800 (42,800) (42,8	11,685,021 1,685,021 1,585	2,40,099	Chies	2,076,099	nt. Other	costs 6,715,800 142,800	11 507 021	Maint Other Con
20									1,986,033			6,715,800 (42,800) (42,8	11,685,021 1,685,021 1,585	2,40,099	2,794,41 133,00 133,	2,076,099		6,715,800 142,800 1	11 507 021	- 2
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Sens	sitivity te authority orfolk District C	st 2								Pre	sent Val	ue Costs	for all options	•													
Project	name													ı	Results £				-								
Racton, Project	Walcott and O: reference		fanagement Study										Option 1 Do-nothing				Орг	ion 2									
Base da Scaling f	te for estimate lactor (e.g. £m, count rate	s (year 0) .£k,£)	01/04/201 £	4						PV total costs			Do-nothing				urchase an	d lease of all 6,576,066									
HUAI US	countrate	Option 1	Do-nothin	1		TOTA	l PV	PV	PV PV	Option 2	Option 6 Pu	urchase and le	ase of all properties)	TOTALS:	PV	PV	PV	PV	Option 5	Option 9	buy, lease	a	TOTALS:	PV	PV	PV	PV
					Negative				Negative								Other	Negative				Negative	Cash		Maint	Other	Negative
E	cash sum	Capital	Maint.	Other	costs	Casn .	Capit	: Maint	Other costs	Capital 4,969,221	Maint.	Other .	Negative costs 11,000,100	Cash 15,969,321	Capital 2,811,58	Maint .		costs 3,764,483	Capital 5,191,221	Maint.	Other	costs	16,191,321	Capital 2,939,232		Otner .	3,764,483
ear	Discount Factor																										
1	0.97					Ė	Ė	-		1,986,039		ļ		1,986,039	1,918,87	18			2,076,039		İ	142 800	2,076,039	2,005,835			
3	0.93 0.90 0.87						-					-	142,800 142,800 142,800	142,800 142,800 142,800		-		128,797 124,442		-		142,800	142,800 142,800 142,800	= :	-		128,797
2 3 4 5 6 7 8	0.84						Ė						142,800	142,800 142,800				120,234				142,800	142,800 142,800		-		120,234
7	0.79						Ė		- : :				142,800 142,800	142,800 142,800				112,240				142,800 142,800	142,800 142,800				112,240
9 10 11	0.73					Ė	Ė	-			-		142,800 142,800	142,800 142,800 142,800				104,777		-	ļ	142,800	142,800 142,800 142,800				104,777
11	0.68						Ė					-	142 800	142,800 142,800				97,810 94,503				142 800	142,800				97,810
13	0.64						÷					-	142,800 142,800	142.800				91.307				142,800 142,800	142,800 142,800				94,503
15	0.62 0.60 0.58						Ė						142,800 142,800 142,800	142,800 142,800 142,800				88,219 85,236 82,354				142,800 142,800 142,800	142,800 142,800 142,800		-		85,236
17	0.56 0.54						Ė						142,800	142,800 142,800 142,800				79,569 76,878				142,800	142,800				79,569
19	0.52 0.50			1						996,496		1	142,800 142,800 208,200	142,900	500.80	15		74,278 104,634	1,044,496	-	—	142,800 142,800 208,200	142,800 142,800 1,252,696	524 928			74,278
21	0.49			+						330,430		1	208,200	1,204,696 208,200 208,200				101,096	7,044,400	-	-	208,200	208,200	JE7,J20			101,096
23	0.47 0.45 0.44			+	+						-	-	208,200 208,200 208,200	208,200				94,374 91,183	<u> </u>		-	208,200 208,200	208,200				94,374
25 26	0.44 0.42 0.41			+-	-							-	208,200 208,200 208,200	208,200 208,200 208,200				88,099 85,120	<u> </u>		1	208,200 208,200 208,200	208,200				88,099
27 28	0.40			+		1						1	208,200 208,200 208,200	208,200 208,200 208,200				82,242 79,460			1-	208,200 208,200 208,200	208,200 208,200				82,242
29	0.37 0.36 0.35			-									208,200 208,200	208,200 208,200				76,773 74,177			ļ	208,200	208,200	-			76,773
31	0.35			-								-		65,400				22,622 21,963		-			65,400				22,622
33	0.34 0.33 0.32			-									65,400 65,400 65,400	65,400 65,400				21,323			-	65,400 65,400 65,400	65,400 65,400				21,323
35 36	0.31						Ė					-	65,400 65,400	65,400 65,400				20,099				65,400 65,400	65,400 65,400	-			20,099
37	0.29			-									65,400 65,400	65,400 65,400				18,946 18,394				65,400	65,400 65,400				18,946
39	0.27												65,400	65,400				17,858		ļ	ļ	65,400	65,400				17,858
41	0.27						Ė		- : :				65,400 65,400	65,400 65,400 65,400				17,338 16,833 16,343				65,400 65,400	65,400 65,400				16,833
43	0.25 0.24 0.24			-									65,400 65,400 65,400	65,400 65,400				15,867 15,404				65,400 65,400 65,400	65,400 65,400				15,867
45 46	0.23			-								-	65,400 65,400	65,400 65,400				14,956			-	65,400 65,400	65,400 65,400	-			14,956
47 48	0.22			-									65,400 65,400	65,400 65,400				14,097 13,687		-	<u> </u>	65,400 65,400	65,400 65,400	-			14,097
49	0.20	1		-			-			1,986,685		-		65,400	391.89			13,288	2,070,685		ļ	65 400	65,400				13,288
51	0.20			-						1,300,000			194,100 194,100	2,180,785 194,100 194,100				38,289 37,173	2,070,000			194,100 194,100	2,264,785 194,100 194,100	400,403			37,173
53	0.19 0.18 0.18			-									194,100 194,100	194,100				35,040				194,100 194,100	194,100				35,040
55 56	0.17			-								-	194,100	194,100 128,700				33,028 21,262		-	-	194,100	194,100 128,700	-			33,028
57 58	0.16			-									128,700	128,700 128,700				20,643		-	!	128,700	128,700 128,700	-			20,643
59 60	0.15			-			-					-	128,700	128,700				19.458		-	ļ	128,700	128,700				19,458
61 62	0.14			+			-					+	128,700 128,700 128,700	128,700 128,700 128,700				18,891 18,341 17,806				128,700 128,700 128,700	128,700 128,700 128,700				18,341
63 64	0.13		=	+			-					1	128,700 128,700 128,700	128,700 128,700				17,288				128,700 128,700 128,700	128,700 128,700 128,700				17,288
65 66	0.13 0.12			1-		-	1	-				-	128,700	128,700 128,700				16,295 15,821			-	128,700 128,700	128,700 128,700				16,295
67 68	0.12			+-						ļ		+	128,700 128,700 128,700	128,700 128,700 128,700				15,360 14,913		-	Ι	128,700 128,700 128,700	128,700 128,700 128,700	-			15,360
69 70	0.11			1	1	- :	-	-	- :	ļ	-	1	128,700 128,700	128,700 128,700				14,478		-	-	128,700 128,700	128,700 128,700				14,478
71 72	0.11 0.11 0.10			+			-					-	128,700 128,700 128,700	128,700 128,700				14,057 13,647 13,250		-	-	128,700 128,700 128,700	128,700 128,700				13,647
73 74	0.10 0.10 0.10			+		:	-	-					128,700 128,700 128,700	128,700 128,700				12,864			-	128,700 128,700 128,700	128,700 128,700				12,864
75 76	0.09			+		-	-			ļ		-	128,700	128,700 128,700				12,125		-	-	128,700	128,700 128,700	-			12,125
77 78	0.09			1		-	-	- :	- : :	ļ			128,700	128,700 128,700	- :			11,541 11,260 10,985	ļ	-	-	128,700 128,700	128,700 128,700 128,700				11,541 11,260
79 80	0.09		-	1		-	-	- :	- : :				128,700	128,700 128,700				10.717			-	128,700	128,700 128,700				10,985
81 82	0.08			+		-	-	-					128,700 128,700 128,700	128,700			-	10,456 10,201			-	128,700 128,700 128,700	128,700 128,700				10,456
1211111516171181972122222552722273333312334556373330444444444444444555102224555575690661022245566766977777777777777808102245666758999910224456667699	0.08			+		:	-	-					128,700 128,700 128,700	128,700 128,700 128,700				9,952			-	128,700	128,700 128,700 128,700				9,952
85 86	0.07			1		- :	÷		- : :	ļ			1		- :						-	-					
87 88	0.07			-		- :	-	- :	- : :		-	-		- :	- :	-	-					-		-	-		
89 90	0.07			-		-	-	- :	- : :		-	-								-		-	- :				
91 92	0.07 0.06 0.06			+	-	-		-				-	-										- 1				
93 94	0.06 0.06 0.06			+		-		-				-	-										- 1				
95 96	0.06			+		-	-			ļ		+	ļ					=		-	-			-			= :
97 98	0.05			1		- :	-			ļ	-	1	ļ						ļ		-	-					
99	0.05	<u> </u>						1		1						1 .	1					_		-			_
	3.03				-																						

ivity te nority Ix District C	ouncil								Pre	sent var	lue Costs	for all options													
ne Inott and Ωr	stend Coastal Man	nanement Sturk												Results £											
erence or estimates or (e.g. £m,	s (year 0)	01/04/2014										Option 1 Do-nothing				Optio	n 2								
or (e.g. £m, nt rate	£k, £)	£							PV total costs							urchase and I	12,298,596								
	Option 1	Do-nothing			TOTA	AL PV	PV PV	PV	Option 2	Option 6 P	urchase and le	ase of all properties)	TOTALS:	PV	PV	PV	PV	Option 5	Option 9 - b	ouy, lease a	1	TOTALS: PV	PV	PV	PV
				Negative				Negative								1	Negative				Negative				No
cash sum	Capital	Maint.	Other .	costs	Cash	Capit	Maint Other	costs	Capital 4,969,221	Maint.	Other	Negative costs 18,354,900	Cash 23,324,121	4,801,179	Maint .	Other c	7,497,416	5,191,221	Maint.	Other .	costs	Cash Capital 23,546,121 5,015,67	Maint .	Other	- 7,
Discount Factor																									
1.00 0.97							-		4,969,221				4,969,221	4.801.179			-	5,191,221				5.191.221 5.015.67	2 .		
0.93 0.90 0.87 0.84 0.81			-			1:-					1	336,900 336,900	336,900 336,900				314,500				336,900 336,900	336,900 - 336,900 -			
0.87			1									336,900 336,900	336,900 336,900				293,589				336,900	336,900 ·			
0.84			1			-	- :					336,900	336,900	- :			274,068				336,900	336.900 -			
0.79 0.76				-	-	+:-	- :	::				336,900 336,900	336,900 336,900		_		264,800 255,846				336,900 336,900	336,900 - 336,900 -	+ -		
0.73 0.71				-	-	-	- :	: - :			-	336,900 336,900	336,900 336,900 336,900		-		247,194 238,835				336,900 336,900	336,900 - 336,900 - 336,900 -	-		
0.68						-				-			336,900	- :			230,758 222,955				336 900	336,900 -			
0.66 0.64					-	1		-				336,900 336,900	336,900 336,900	- 1			215,415				336,900 336,900	336,900 - 336,900 -			
0.62 0.60								-		<u> </u>		336,900 336,900	336,900	- :	-		208,131				336,900 336,900	336,900			
0.58 0.56 0.54			+	-	+ :-	+÷		-			+	336,900 336,900 336,900	336,900 336,900				194,292 187,722				336,900 336,900 336,900	336,900 - 336,900 -	-		-
0.54			-		-							336,900 336,900	336 900				181,374 175,240				336,900 336,900	336 900			
0.52 0.50 0.49			1		1	1						336,900 336,900 336,900	336,900 336,900 336,900				169,314 163,589				336,900 336,900 336,900	336,900 - 336,900 - 336,900 -			
0.49			1-					- :		-		336,900 336,900 336,900	336,900				158,057				336,900 336,900	336,900 - 336,900 -			
0.47 0.45 0.44 0.42			1									336,900 336,900 336,900	336,900 336,900 336,900	-			152,712				336,900 336,900 336,900	336 900			
0.41		+	+-	-	+:	-				-	-	336 900	336 900		-		142,558 137,737		\vdash		336,900	336,900 - 336,900 -			
0.40 0.38					-	-	-:-					336,900 336,900	336,900 336,900		- :		133,080 128,579				336,900 336,900	336,900 - 336,900 -			
0.37 0.36 0.35			-		-	1	- 1					336,900 336,900	336,900 336,900		-		124,231 120,030				336,900 336,900 194,100	336,900 - 336,900 -			
0.35													194,100				67,139				194,100	194,100			
0.34 0.33			+		-	+	-:-	: 			+	194,100 194,100	194,100 194,100	-			65,184 63,285				194,100 194,100	194,100 - 194,100 -	-		
0.32 0.31 0.30					-	÷						194,100	194,100 194,100	- :			61,442 59,653				194,100 194,100	194,100 -	-		
0.30			1			-						194,100 194,100	194,100		-		57,915 56,220				194,100 194,100	194,100			
0.29 0.28 0.27			-				- 1					194,100	194,100 194,100 194,100				56,228 54,591 53,001				194,100 194,100	194,100 - 194,100 - 194,100 -			
0.27 0.26			1				- :					194,100 194,100 194,100	194,100 194,100 194,100				51,457				194,100 194,100 194,100	194,100 - 194,100 -			
0.26			+	-	+	+÷-	-:-	-		!	+	194,100 194,100 194,100	194,100		_	- :	49,958 48,503				194,100 194,100	194,100 -			
0.25 0.24 0.24			-		-		-					194,100	194,100 194,100	- :	-	- :	47,090 45,719				194,100	194,100 - 194,100 -	-		
0.23			-		-	-	-:-					194,100 194,100	194,100 194,100			- : -	44,387 43,094				194,100	194,100 - 194,100 -	-		
0.22 0.21			-		Ŀ							194,100 194,100	194,100 194,100				41,839 40,620				194,100 194,100	194,100 - 194,100 -			
0.20	1									l			194,100				39,437					194,100 -			
0.20		-	+		+ :-	+	- :	: :		-		194,100 194,100	194,100 194,100		_		38,289 37,173				194,100 194,100	194,100 - 194,100 -	-		
0.19 0.18					+ :	÷	- :					194,100 194,100	194,100 194,100				36,091 35,040				194,100 194,100	194,100 - 194,100 -	-		
0.18 0.17 0.17					-	-						194,100	194,100		-	- :	34,019 33,028				194,100	194,100			
0.17					-	-						194,100 128,700 128,700	194,100 128,700	- 1			21,262				194,100 128,700 128,700	194,100 - 128,700 -			
0.16 0.16			+		-	+		-		 	+	128,700	128,700 128,700	- :	-		20,643				128,700	128,700 - 128,700 -			
0.15 0.15 0.14			+	-	+ :-	+ :-						128,700 128,700 128,700	128,700 128,700 128,700				19,458 18,891 18,341				128,700 128,700 128,700	128,700 - 128,700 -	-	-	-
0.14			-		-	-							128,700		-	- 1	17.806				128,700	128,700 - 128,700 - 128,700 -	-		
0.14 0.13 0.13		\perp	-		1	-	-			_		128,700 128,700 128,700	128,700 128,700				17,288				128,700 128,700 128,700	128,700 - 128,700 -			
0.13 0.12			-									128,700 128,700 128,700	128,700 128,700 128,700				16,295 15,821				128,700 128,700	128,700 - 128,700 -			
0.12 0.12 0.12												128,700	128,700	-			15,821 15,360 14,913				128,700 128,700 128,700	128,700 - 128,700 - 128,700 -			
0.11							-					128,700 128,700 128,700	128,700 128,700 128,700				14,478	L				128,700 -			
0.11 0.11			-		-		- :		-			128,700	128,700 128,700				14,057 13,647				128,700 128,700	128,700 - 128,700 -			
0.10					1	-	- : -					128,700 128,700	128,700 128,700	- :		- :	13,250 12,864				128,700 128,700	128,700 - 128,700 -			
0.10				1			-				_	128,700	128,700				12,489				128,700	128,700 -			
0.09			-			-				-		128,700 128,700	128,700 128,700				12,125 11,830				128,700 128,700	128,700 - 128,700 -			
0.09			\perp			+	- 1	-		<u> </u>		128,700 128,700	128,700 128,700 128,700				11,541 11,260 10,985	<u> </u>			128,700 128,700	128,700 - 128,700 -			
0.09			-		-	-	- :				-	128,700 128,700	128,700 128,700				10,985				128,700	128,700 - 128,700 -			
0.08 0.08 0.08			1		-	1				-	-	128,700 128,700 128,700	128,700				10,456				128,700 128,700	128,700 - 128,700 -			
0.08			1			1		- :		-	-	128,700 128,700 128,700	128,700 128,700 128,700				9,952 9,709				128,700 128,700 128,700	128,700 - 128,700 -			
0.08 0.07 0.07				1	Ė					<u> </u>		128,700	128,700	-			9,709				128,700	128,700			
0.07		+	+		1	1				-	_	_							\vdash						
0.07 0.07 0.07		_					-				_					- : 1									
0.07			-																						
0.06 0.06			1						L	<u> </u>		<u> </u>	- :	-							<u> </u>				
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0.05			1	1	1 :-	1:-	-:-				-						-								
0.05		_	+	_	-	-		-			_										1			_	_

FCRM spreadsheets (sensitivity tests for Walcott and Ostend)

tivity othority	test 1									Preser	nt Value Costs for all	options											
													Results !	È									
Valcott a	and Ostend Coas be imates (year 0) g. £m, £k, £) le	tal Managerr 340.681	ne I									Option 1			Option 2								
for est	imates (year 0)	year 0							PV total costs			Option 1 Do-nothing			Option 2 Purchase and lease of all 24,667,530								
ount rat	Option 1	Do-nothing)		TOTALS:		PV				Purchase and lease of all prope			PV PV	PV PV				TOTALS:				
	Option 1	Do-notning			TOTALS:	PV	PV	PV PV	Opson 2	Option 6 -	Purchase and lease or all prope	rtes	TOTALS:	PV PV		Option 5	Buy, Hent and		TOTALS:	PV	PV F	•	PV
	Capital	Maint.	Other	Negative costs	Cash	Capital	Maint	Negative Other costs	Capital	Maint.	Other	Nagative costs	Cash	Capital Maint	Negative Other costs	Capital I	Maint. Ot	Negative ther costs	Comb	Comittee	Maint C		Neg
sh sum	- Capital	mairit.	- Curer	·		- Capital	maint -	Other Coats	20,351,228	maiiit.	- Curier	Negative costs 31,256,400	51,607,628	10,615,702 Maint	Other costs - 14,051,828	21,299,228	. O	ther costs - 31,256,400	52,555,628	11,154,443	·	- Juner	14,
scount Factor																							
1.000							-		8,689,699				8,689,699	8.395.845		9,151,699			9.151.699	8,842,221			F
0.934				ļ								723,600	723,600		675,488 - 652,646			723,600	723,600				F
0.902 0.871				 		-	-				<u> </u>	723,600 723,600	723,600		- 630,576			723,600 723,600	723,600			_	t
0.842			+									723,600 723,600	723,600 723,600		- 609,252 - 588,649			723,600 723,600	723,600 723,600	-			۰
0.786				-			-					723,600	723,600		- 568,743			723,600	723,600			-	F
0.759 0.734			+			-	-					723,600	723,600 723,600		- 549,510 - 530,928			723,600 723,600	723,600 723,600				t
0.709 0.685 0.662			+			-	+					723,600 723,600 723,600 723,600	723,600 723,600		- 512,974 - 495,627			723,600 723,600	723,600 723,600				۰
0.662				-		- :	-	- : - :					723,600 723,600	-	- 478,866 - 462,673				723,600			==	F
0.639				_		-						723,600 723,600	723,600		- 462,673 - 447,027			723,600 723,600	723,600				T
0.597 0.577												723,600 723,600	723,600 723,600		- 431,910 - 417,304			723,600 723,600	723,600 723,600				t
0.557 0.538 0.520	l		+	+			-	1 1			-	723,600 723,600 723,600	723,600 723,600		- 403,193 - 389,558	— T		723,600 723,600 723,600	723,600 723,600	_		_	H
0.520												723,600	723,600 723,600 723,600		- 376,385 - 363,657			723,600	723,600 723,600				Ŧ
0.503 0.486 0.469			-					1 1				723,600 723,600	723,600 723,600 723,600		- 351,359 - 339,477			723,600 723,600	723,600 723,600				1
0.453		<u> </u>	<u> </u>			-	<u> </u>	- :		<u> </u>	+	723,600 723,600 723,600	723,600 723,600		- 339,477 - 327,997	<u> </u>		723,600 723,600 723,600	723,600 723,600				ł
0.438 0.423		-	-									723,600	723,600 723,600		- 316,906 - 306,189				723,600 723,600			==	F
0.409 0.395			1									723,600 723,600 723,600	723,600		- 295,835 - 285,831			723,600 723,600 723,600	723,600				1
0.382			-				<u> </u>					723,600 723,600 723,600	723,600 723,600 723,600		- 285,831 - 276,165			723,600 723,600 723,600	723,600 723,600 723,600				t
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0.257		-	-			- :	-					411,600 411,600	411,600 411,600		- 105,939 - 102,853			411,600 411,600	411,600 411,600				Ŧ
0.250 0.243 0.236			ļ.,		-	-	-					411,600 411,600	411,600 411,600		99,858			411,600 411,600	411,600			==	Ŧ
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0.197													411,600		- 81,193			411,600 411,600 411,600	411,600				ŧ
0.192 0.186		-	-	-			<u> </u>			-		411,600 411,600	411,600 411,600		- 78,828 - 76,533			411,600 411,600	411,600 411,600				t
0.181 0.175		-		-		- :	-					411,600 411,600	411,600 411,600	-	- 74,303 - 72,139			411,600 411,600	411,600 411,600				Ŧ
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0.103			-									373,800	373,800 373,800		- 38,483			373,800 372,900	373,800 373,800			_	F
0.100 0.097 0.094			-	_								373,800 373,800 373,800	373,800 373,800		- 37,362 - 36,274			373,800 373,800 373,800	373,800 373,800				ŧ
0.092			<u> </u>			-	<u> </u>				1	373,800 373,800 373,800	373,800		- 35,217 - 34,358 - 33,520			373,800 373,800 373,800	373,800				£
0.090 0.087			-	1								373,800 373,800 373,800	373,800 373,800		- 32,703			373,800 373,800 373,800	373,800 373,800		-:		f
0.085						-						373,800 373,800	373,800 373,800		- 31,905 - 31,127			373,800 373,800	373,800				Ŧ
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nsitivity nt/Authority h Norfok Dis	test 2									Present Value Costs for	or all options												
	and Ostend	Coastal Mana							PV total costs		Option 1 Do-nothing	Results	ε	Purchase	Option 2 and lease of all 30,997,290								
discount rat	Option 1	0 Do-nothing			TOTALS:	PV	PV PV	PV		Option 6 - Purchase and lease of a	il properties	TOTALS:	PV PV	PV	PV	Option 5	Buy, Rent	and Demolis		TOTALS: PV	PV	PV	PV
	Capital		Other	Negative costs	Cash	Capital	Maint Other	Negative costs	Capital	Maint. Other	Negative costs	Cash	Capital Maint	Other	Negative costs	Capital	Maint.	Other 4	Negative costs	Cook Cook	tal Maint	Other	Negative co
cash sum Discount Factor	i .		·			·	- Julei		20,351,228	- Other	- 48,099,600	68,450,828	12,549,358	·	18,447,932	21,299,228		·	47,688,000	Cash Capi 68,987,228 13,	168,541	·	18,377
1.000						-			8,689,699			8.689.699	8.395.845	_		9,151,699				9,151,699 8,		-	4
0.966 0.934		-					1 1	-	8,689,699		723,600	8,689,699 723,600 723,600	8,395,845		675,488	9,151,699			723,600	723,600	342,221		675
0.902 0.871						- :	- 1 - 1	-			723,600 723,600	723,600	- :	-	652,646 630,576				723,600 723,600	723,600 723,600			652
0.842 0.814 0.786						-		-			723,600 723,600 723,600	723,600 723,600 723,600	- :	_	609,252 588,649 568,743				723,600 723,600 723,600	723,600 723,600 723,600			- 605 - 588
0.759 0.734											723,600 723,600 723,600	723,600 723,600 723,600			549,510 530,928				723,600 723,600	723,600			- 549 - 530
0.709 0.685						-					723,600 723,600	723,600 723,600			512,974 495,627				723,600 723,600	723,600 723,600			· 51:
0.662						- :					723,600 723,600 723,600	723,600 723,600		-	478,866 462,673				723,600 723,600 723,600	723,600 723,600			- 47 - 46
0.639 0.618 0.597					-						723,600 723,600 723,600	723,600 723,600			447,027 431,910				723 600	723,600 723,600 723,600			- 44 - 43
0.577		-						-				723,600 723,600 723,600			431,910 417,304 403,193				723,600 723,600	723,600 723,600			- 43 - 41 - 40
0.538 0.520					- :		- : :				723,600 723,600 723,600	723,600 723,600			389,558 376,385				723,600 723,600	723,600 723,600			- 38: - 37
0.503 0.486						- :	- : :		6,069,797		723,600 1,135,200	6,793,397 1,135,200	3,050,473		363,657 551,220	6,321,797			723,600 1,135,200	7,045,397 3, 1,135,200	177,120		- 36 - 55
0.469 0.453		-					1 1				1,135,200 1,135,200 1,135,200	1,135,200 1,135,200			532,580 514,570				1,135,200 1,135,200 1,135,200	1,135,200 1,135,200			- 53 - 51
0.438 0.423								-			1.135.200	1,135,200 1,135,200		-	497,169 480,356				1.135.200	1,135,200 1,135,200	-	-	- 49 - 48
0.409 0.395 0.382		<u> </u>				- :		-			1,135,200 1,135,200	1,135,200 1,135,200			464,113 448,418				1,135,200 1,135,200	1,135,200 1,135,200			- 46 - 44
0.382 0.369 0.356						- :	- 1 - 1	-			1,135,200 1,135,200	1,135,200 1,135,200	- :	-	433,254 418,603				1,135,200 1,135,200	1,135,200		-	- 43 - 41
0.356 0.346 0.336					-	- :	- 1 - 1	-			1,135,200 411,600 411,600	1,135,200 411,600	- :		404,447 142,373 138,226				1,135,200 411,600 411,600	1,135,200 411,600		-	- 40 - 14
0.326 0.317						-	- : :	-			411,600 411,600	411,600 411,600 411,600	- :		134,200 130,291				411,600 411,600 411,600	411,600 411,600			· 13
0.307							1 1	-			411,600	411,600	- :		126,497				411,600	411,600 411,600			15
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0.281 0.273 0.265								-			411,600 411,600	411,600 411,600 411,600	- :	=	115,762 112,391				411,600 411,600 411,600	411,600		-	- 1
0.257 0.250											411,600 411,600	411,600 411,600			109,117 105,939 102,853				411,600 411,600	411,600 411,600 411,600			- 10
0.243						-					411,600 411,600 411,600	411,600 411,600			99,858				411,600 411,600	411,600 411,600			. 9
0.229		—				-					411,600	411,600 411,600			94,125				411,600	411,600 411,600			. 9
0.222 0.216 0.209					=			-			411,600 411,600 411,600	411,600			91,384 88,722 86,138				411,600 411,600 411,600	411,600			· 9
0.203								-	5,591,731		411,600 411,600 411,600	411,600 411,600 6.003,331	1 103 040	-	86,138 83,629 81,193	5,825,731			411,600 411,600 411,600	411,600 411,600 6,237,331 1.	. 149 200	-	- 8 - 8
0.192 0.186		-				- :					411,600 785,400 785,400	785,400 785,400			150,418 146,037				785,400	785,400 785,400		-	· 15
0.181 0.175		-				- :	1 1	-			785,400 785,400	785,400 785,400			141,783 137,653		-		785,400 785,400	785,400 785,400			- 14 - 13
0.170 0.165						- :	- 1 - 1	- 1			785,400	785,400 373,800			133,644 61,753				373,800	373,800 373,800			· 60
0.160					-			-			373,800 373,800 373,800 373,800	373,800			59,955 58,209 56,513				373,800 373,800 373,800 373,800	373,800			- 56 - 58
0.151 0.147					-			- 1			373,800	373,800 373,800 373,800		-	56,513 54,867				373,800 373,800	373,800 373,800 373,800		-	. 5
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0.127 0.123					:-	- :					373,800 373,800 373,800	373,800 373,800			47,329 45,950 44,612				373,800 373,800 373,800	373,800 373,800			- 41 - 45 - 44
0.119 0.116											373,800 373,800	373,800 373,800 373,800			44,612 43,313 42,051				373,800 373,800	373,800 373,800 373,800			- 4 - 4
0.112 0.109						-					373,800 373,800 373,800	373,800			40,826			\Box	373,800 373,800 373,800	373,800			- 4
0.106 0.103		<u> </u>			- :	- :	- : :	-			373,800 373,800	373,800 373,800			39,637 38,483				373,800 373,800	373,800 373,800	-		· 3
0.100 0.097 0.094					- :	- :					373,800 373,800 373,800	373,800 373,800 373,800			37,362 36,274 35,217				373,800 373,800 373,800	373,800 373,800 373,800			. 3
0.094 0.092 0.090						- :	1 1				373,800 373,800 373,800	373,800 373,800 373,800			35,217 34,358 33,520				373,800 373,800 373,800	373,800 373,800 373,800			· 3
0.090 0.087 0.085	<u> </u>										373,800 373,800 373,800	373,800 373,800 373,800			33,520 32,703 31,905				373,800 373,800 373,800	373,800 373,800 373,800			- 3
0.083											373,800	373,800 373,800 373,800			31,127 30,368	!			373,800	373,800 373,800 373,800			3
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Sensitivity	test 3										Presen	t Value Costs for al	I options					_								
Client/Authorit North Norfolk Dis Project name														Results £	<u> </u>			-								
Bacton, Walcott Project referent Base date for es Scaling factor (e. nitial discount ra	and Oster be timates (y	nd Coastal Ma 340,681 year year 0	ın										Option 1 Do-nothing			Purchase	Option 2 and lease of all	ı								
icaling factor (e. nitial discount ra	g. £m, £k, te	(2, £) £			TOTALS:	BV	PV	PV	PV	PV total costs Option 2	Onto-0 /	Purchase and lease of all prop		TOTALS:	DV DV	DV	50,366,183 PV	Ontion 5	Down Count on			TOTALS:	DV	- DIV	BV	PW.
				leastiv						Option 2	Option 6 - F	rurchase and lease of all prop	erses			PV		Option 5	Buy, Rent ar		Negative	TOTALS:	PV	PV	PV	Negative
cash sun	Capital	I Maint.	Other 9	costs	Cash .	Capital	Maint	Other	Negative costs	Capital 18,501,116	Maint.	Other	Negative costs 75,021,600	Cash 93,522,716	Capital Maint 17,875,474 -	Other	Negative costs 32,490,708	Capital 21,299,228	Maint.	Other	75,021,600	Cash 96,320,82	Capital 3 20,578,964	Maint	Other	costs
Discount par Factor																										
1 0.966 2 0.934		+				H		-	-	18,501,116			1,509,000	18,501,116 1,509,000	17,875,474		1.408.668	21,299,228			1.509.000	21,299,22	20,578,964			1 408 668
3 0.902 4 0.871		-			- :	-:	-	-	- :				1,509,000	1,509,000 1,509,000	- :		1,361,032 1,315,006				1,509,000	1,509,00				1,361,030
5 0.842 6 0.814		1			:		-:	-	-				1,509,000 1,509,000 1,509,000	1,509,000 1,509,000	- : :		1,270,538 1,227,572				1,509,000	1,509,00				1,270,538
7 0.786 8 0.755 9 0.734		1											1,509,000 1,509,000 1,509,000	1,509,000 1,509,000			1,186,060 1,145,952				1,509,000 1,509,000 1,509,000	1,509,00				1,186,060
10 0.709 11 0.685		+	-		-		-	-					1,509,000	1,509,000			1,069,758		-		1,509,000	1,509,00				1,069,758
12 0.662 13 0.639													1,509,000 1,509,000 1,509,000	1,509,000 1,509,000			998,631 964,861				1,509,000 1,509,000 1,509,000	1,509,00 1,509,00				998,631 964,861
14 0.618 15 0.597 16 0.577	<u> </u>							-					1,509,000 1,509,000 1,509,000	1,509,000 1,509,000 1,509,000			932,233 900,708 870,249				1,509,000 1,509,000 1,509,000	1,509,00				932,233 900,708 870,249
17 0.557 18 0.538	1	+	=	=				H		!	<u> </u>		1 509 000	1,509,000			840.821	_	-		1.509.000	1,509,00 1,509,00				840,821 812,387
19 0.520													1,509,000 1,509,000 1,509,000 1,509,000	1,509,000 1,509,000			812,387 784,915 758,372				1,509,000 1,509,000 1,509,000 1,509,000	1,509,00				784,915 758,372
21 0.486 22 0.469			Ш	\equiv			- :						1,509,000	1,509,000 1,509,000			732,726 707,948				1,509,000	1,509,00				732,72
23 0.453 24 0.438 25 0.423		+		_	-			-	-				1,509,000 1,509,000 1,509,000	1,509,000 1,509,000			684,008 660,877 638,529	!			1,509,000 1,509,000 1,509,000	1,509,00 1,509,00				684,008 660,877 638,525
26 0.409 27 0.395		-					H	#					1,509,000	1,509,000			616,936 596,073				1,509,000	1,509,00				616,936 596,073
28 0.382 29 0.369			=		- :		- :	-	-				1,509,000 1,509,000	1,509,000 1,509,000			575,916 556,441				1,509,000	1,509,00 1,509,00				575,916 556,441
30 0.356 31 0.346						-	-	-	-				1,509,000 785,400 785,400	1,509,000 785,400 785,400	- : :		537,624 271,671 263,758				1,509,000 785,400 785,400	1,509,00 785,40 785,40			-	537,624 271,671 263,756
32 0.336 33 0.326 34 0.317								-					785,400 785,400 785,400	785,400 785,400 785,400			263,758 256,076 248,617				785,400 785,400 785,400	785,40 785,40				263,758 256,076 248,611
35 0.307 36 0.298		-	-										785,400	785,400 785,400 785,400			241,376 234,346				785,400	785.40				241,376
37 0.290 38 0.281						-	-:	-	-				785,400 785,400 785,400 785,400	785,400 785,400			227,520 220,893 214,460				785,400 785,400 785,400 785,400	785,40 785,40 785,40				227,520
39 0.273 40 0.265								- :					785,400 785,400 785,400	785,400 785,400 785,400		-	208,213				785,400 785,400 785,400	785,40 785,40 785,40			-	214,460 208,213
41 0.257 42 0.250 43 0.243	_	+						+÷					785 400	785,400 785,400			202,149 196,261 190,545					785,40 785,40				202,149 196,261 190,545
44 0.236 45 0.229		+											785,400 785,400 785,400	785,400 785,400 785,400			184,995 179,606				785,400 785,400 785,400	785,40 785,40 785,40				184,995
46 0.222 47 0.216					- :			- :					785,400 785,400	785,400 785,400			174,375 169,296				785,400 785,400	785,40 785,40	-		1 1	174,375
48 0.209 49 0.203 50 0.197					:	- :	-:	-	- :				785,400 785,400 785,400	785,400 785,400 785,400	- :	=	164,365 159,578 154,930				785,400 785,400 785,400	785,40 785,40 785,40			: :	164,365 159,578 154,930
51 0.192 52 0.186								1					785,400 785,400 785,400	785,400 785,400 785,400			150,418 150,418				785,400 785,400 785,400	785,40 785,40 785,40				154,930 150,418 146,037
53 0.181 54 0.175	_	-			:	-:	÷	-	- :				785,400 785,400	785,400 785,400	- :		141,783 137,653				785,400 785,400	785,40 785,40			: :	141,783
55 0.170 56 0.165					:		-	-	- :				785,400 785,400 373,800	785,400 785,400 373,800			133,644 129,752 59,955				785,400 785,400 373,800	785,40 785,40 373,80				133,644
57 0.160 58 0.156 59 0.151						-	-	-	- :				373,800 373,800 373,800	373,800 373,800 373,800		-	59,955 58,209 56,513				373,800 373,800 373,800	373,80 373,80 373.80				59,950 58,200 56,513
60 0.147 61 0.143		-											373 800	373,800			54,867				373,800	373.80				54,867
62 0.138 63 0.134	_	-			-		-	+					373,800 373,800 373,800	373,800 373,800 373,800			53,269 51,718 50,211				373,800 373,800 373,800 373,800	373,80 373,80 373,80				51,718 50,211 48,749
64 0.130 65 0.127							-						373,800 373,800 373,800	373,800 373,800 373,800			50,211 48,749 47,329					373,80 373,80 373,80				47,329
66 0.123 67 0.115 68 0.116		+		_	-			-	-				373,800 373,800	373,800 373,800			45,950 44,612 43,313				373,800 373,800	373,80 373,80				45,950 44,612
69 0.112 70 0.109	<u> </u>		=	_				-					373,800 373,800 373,800	373,800 373,800 373,800			42,051 40,826	!			373,800 373,800 373,800	373,80 373,80 373,80				42,051 42,051
71 0.106 72 0.103		\pm			- :								373,800 373,800	373,800 373,800			39,637 38,483				373,800 373,800	373,80 373,80				39,637 38,483
73 0.100 74 0.097					- :	-	- :	- :	- :				373,800 373,800	373,800 373,800			37,362 36,274				373,800 373,800	373,80 373,80				37,360 36,274
75 0.094 76 0.092 77 0.090	<u> </u>	-											373,800 373,800 373,800	373,800 373,800 373,800			35,217 34,358 33,520				373,800 373,800 373,800	373,80 373,80 373,80				35,217 34,358 33,520
78 0.087 79 0.085		-											373,800 373,800	373,800 373,800			32,703 31,905	!			373,800 373,800	373,80 373,80				32,703 31,905
80 0.083 81 0.081					- :		- :						373,800 373,800 373,800	373,800 373,800 373,800			31,127 30,368	<u> </u>			373,800 373,800 373,800	373,80 373,80				31,127
82 0.079 83 0.077													373,800 373,800 373,800	373,800			29,627 28,904				373,800 373,800 373,800	373,80 373,80				29,627 28,904
84 0.075 85 0.074 86 0.073	1												373,800 373,800	373,800 373,800			28,199 27,512				373,800 373,800	373,80 373,80				28,199 27,512
87 0.070 88 0.068	<u> </u>	+	=					-				-	-					!	=							
89 0.065 90 0.065																										
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93 0.060 94 0.059 95 0.057		-	=		- :			-	-				ļ									- :				
96 0.056 97 0.055		-			- :		H	#		<u> </u>								!								
98 0.053 99 0.052		_											İ													

Partnership Funding spreadsheets

FCRM Partnership Funding Calcu Version 8 January 2014	llator for Flood and Coastal Eros	sion Risk Managemer	nt Grant in Aid (FCRM	GiA)
Project Name	Walcott and Ostend 20 years or	nly - Capital Works Ext	tensive	
Unique Project Reference				
All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP			\z\z	Key Input cells Calculated cells
SUMMARY: prospect of FCRM GiA funding				
Raw Partnership Funding Score		28% (1)		eme Benefit to Cost Ratio: 1.98 to 1 ffective return to taxpayer: 1.98 to 1 Effective return to area: n/a to 1
External Contribution or saving required to achie	eve an Adjusted Score of 100%	4,381,858 (2)		amount of contributions and/or reductions in scheme
Adjusted Partnership Funding Score (PF)		28% (3)		the Adjusted PF Score to at least 100%. Further this scheme's chances of an FCRM GiA allocation in
PV FCERM GiA towards the up-front costs of	f this scheme (PV Cost for Approval)	- (4)	the desired year. Planned sa cells(9,10,12) and cells(14-17)	vings and contributions should be entered into 7). See NOTE below.
1. Scheme details		14(5)	(o)	
Risk Management Authority type of asset mainta	iner	LA (5)		Strategic Approach has been taken, and
Duration of Benefits (years)		20 (7)	that double counting	of benefits has been avoided?
PV Whole-Life Benefits:		12,094,000 (8)		st be on a Present Value (PV) Whole-
PV Costs PV Appraisal Costs PV design & Construction Costs Sub Total - PV Cost for Approval (appraisal,design	gn,construction)	0 (9) 6,102,000 (10) 6,102,000 (11)	Contributions are identified	uration of Benefits period. Where ed these should also be on a Present Value basis.
PV Post-Construction Costs PV Total Whole-Life Costs:		0 (12) 6,102,000 (13)		
PV Contributions secured to date PV Local Levy secured to date PV Public Contributions secured to date PV Private Contributions secured to date PV Funding from other Environment Agency functio PV Total Contributions secured to date WARNING: Contributions less than minimum rec		(14) (15) (16) (17) (17) (18)	maintenance (ongoing costs, means. NOTE: This scheme is to be Capital FCRM GiA will fund it any shortfall needing to be p. Future ongoing costs (cell 12 local agreement by the RMA recommended that the RMA	sary contributions will depend on whether is funded through revenue FCRM GiA, or by other maintained by an RMA other than the EA (ref cell 5). ne appropriate share of the up-front costs (cell 11) with aid rovia contributions identified in cells(14-17). I and any contributions towards them are a matter for and should NOT be included in cells(14-17). It is takes the opportunities created during scheme accure contributions towards future ongoing costs
2. Qualifying benefits under Outcome Measu	re 2: households better protected against	flood risk		
Number of households in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas	Before At: Moderate Significant Very risk risk significant	Moderate risk	After Significant Very risk significant	Change due to scheme
	risk	Annual damages avoi	risk ded, compared with a househo	risk Id at low risk 150 600 1,350
Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas	£ - £ - £ - £ -		Over lifetime of scheme £ - £ - £ -	Qual. benefits (discounted) OM2 (20%) £ - OM2 (21-40%) £ - OM2 (60%) £ -
3. Qualifying benefits under Outcome Measur Number of households in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas	Before	Damages pe Annual dama Loss expecte Present value discounted ba		£ 6,000 £ 6,000 years 50 20 years £ 1,184 £ 3,015 Long-term loss Medium-term loss Qual. benefits (discounted):
Grange in nousenoid damages, in.	rear rioss avoide	u.	Over meanie or screene.	adai. Delients (discounted):

20% most deprived areas 21-40% most deprived areas 60% least deprived areas

	i cui	1 1000	avoided	<u></u>
£			-	
-£			281,896	j
£			-	

		benefits (discounted):
OM3 (20%)	£	-
OM3 (21-40%)	£	4,288,310
OM3 (60%)	£	-

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations met Payments under: OM4a 0.00 Hectares of net water-dependent habitat created

0.00 Hectares of net water-dependent habitat created Hectares of net intertidal habitat created 0.00 Kilometres of protected river improved OM4b OM4c

efits per unit:
15,000
50,000
80,000

Q	ual. benefits	s (discounted):
OM4a OM4b OM4c OM4	£	-
OM4b	£	-
OM4c	£	-
OM4	£	•

$\underline{\textbf{5. Qualifying benefits arising from the overall scheme, for entry into the \, Medium-Term \, Plan}$

OM, deprivation:		Qual. ber	nefits:	Payment rate	:
OM1		£	7,805,690	5.56	p in the £1
OM2	20% most	£	-	45.0	
	21-40%	£	-	30.0	
	Least 60%	£	-	20.0	
OM3	20% most	£	-	45.0	
	21-40%	£	4,288,310	30.0	
	Least 60%	£	-	20.0	
OM4		£	-	100.0	
Total		£	12,094,000		3

FCRN	I GiA contribution:	
£	433,649	
£	-	
£	-	
£	-	
£	-	
£	1,286,493	
£		
£	-	
£	1,720,142	Maximum for Outcor
		•

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above

Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss

Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

,	. 10 400 1110 11110111	ation maraila
	Raw Score	Contribution for 100% Score (£k)
	28%	4,381,858
	9%	6,954,563
	11%	5,429,063
	11%	5,429,325
	11%	5,429,164
	11%	5.429.355

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Raw Partnership Funding Score

ı	Walcott and Ostend 20 years only - Capital Works - Typical
ı	Walcott and Osteria 20 years only - Capital Works - Typical
ı	
ı	

All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP \z\z

Input cells Calculated cells

to

SUMMARY: prospect of FCRM GiA funding

External Contribution or saving required to achieve an Adjusted Score of 100%	208,858 (2)
Adjusted Partnership Funding Score (PF)	89% (3)
PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval)	- (4)
1. Scheme details Risk Management Authority type of asset maintainer	LA (5)

Effective return to taxpaver to 1 Effective return to area Cell (2) shows the minimum amount of contributions and/or reductions in scheme

cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into cells(9.10.12) and cells(14-17). See NOTE below.

Scheme Benefit to Cost Ratio

Duration of Benefits (years)

20 (7)

89% (1)

PV Whole-Life Benefits: 12,094,000 (8)

PV Costs PV Appraisal Costs PV design & Construction Costs 1.929.000 Sub Total - PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs 0 (12) **1,929,000** (13) PV Total Whole-Life Costs:

Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis

PV Contributions secured to date

PV Local Levy secured to date PV Public Contributions secured to date (14) (15) PV Private Contributions secured to date 16) PV Funding from other Environment Agency functions/sources secured to date PV Total Contributions secured to date 0 (18) WARNING: Contributions less than minimum required in cell (2)

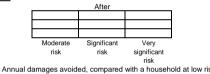
The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other means.

NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5).

Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in: Before 20% most deprived areas 21-40% most deprived areas 60% least deprived areas Significan risk risk significant risk



	Chai	nge due to sch	neme
	0	0	0
	0	0	0
	0	0	0
	Moderate	Significant	Very
	risk	risk	significant
			risk
sk	150	600	1,350

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

	Per year
£	-
£	-
£	-

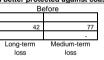
	Over lifetime of scheme	
£	-	
£	-	
£	-	

		benefits (discounted)
OM2 (20%)	£	-
OM2 (21-40%)	£	-
OM2 (60%)	£	-

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

60%



Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages

_		
	£ 6,000	£ 6,000
years	20	50
	£ 3,015	£ 1,184
•	Medium-term	Long-term
	loss	loss

ge in household damages in Char 20%

inge in household damages, in:		Year 1 loss avoided:
most deprived areas	£	
0% most deprived areas	-£	281,896
least deprived areas	£	

Over lifetime of scheme

		benefits (discounted):
OM3 (20%) OM3 (21-40%)	£	-
OM3 (21-40%)	£	4,288,310
OM3 (60%)	£	-

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations met

OM4a 0.00 Hectares of net water-dependent habitat created OM4b OM4c Hectares of net intertidal habitat created 0.00 Kilometres of protected river improved

Assumed benefits per unit:			
£	15,000		
£	50,000		
£	80,000		

Q	ual. benefit	s (discounted):
OM4a OM4b OM4c OM4	£	-
OM4b	£	-
OM4c	£	-
OM4	£	-

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. benefits:		Payment rate:
OM1		£	7,805,690	5.56 p in the £1
OM2	20% most	£	-	45.0
	21-40%	£	-	30.0
	Least 60%	£	-	20.0
OM3	20% most	£	-	45.0
	21-40%	£	4,288,310	30.0
	Least 60%	£	-	20.0
OM4		£	-	100.0
Total		£	12 094 000	

	FCRM	GiA contribution:	
	£	433,649	
	£	-	
	£	-	
ı	£	-	
ı	£	-	
ı	£	1,286,493	
ı	£	-	
ı	£	-	
	£	1,720,142	Maximum for Ou

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
89%	208,858
28%	1,738,313
35%	1,256,063
35%	1,256,325
35%	1,256,164
35%	1,256,355

FCRM Partnership Funding Cald Version 8 January 2014	culator for Flood and Coastal Ero	osion Risk Manageme	ent Grant in Aid (FCRM	I GiA)				
Project Name Unique Project Reference	Bacton, Walcott and Ostend 2	0 years only - Capital	pital Typical					
All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP			\z\z	Key Input cells Calculated cells				
SUMMARY: prospect of FCRM GiA funding								
				cheme Benefit to Cost Ratio: 4.65 to 1 Effective return to taxpayer: 4.65 to 1				
Raw Partnership Funding Score		70% (1)		Effective return to area: n/a to 1				
External Contribution or saving required to ac	hieve an Adjusted Score of 100%	864,838 (2)		n amount of contributions and/or reductions in scheme se the Adjusted PF Score to at least 100%. Further				
Adjusted Partnership Funding Score (PF)		70% (3)		increases on this will improve this scheme's chances of an FCRM GiA allocation in				
PV FCERM GiA towards the up-front costs	of this scheme (PV Cost for Approval)	- (4)	cells(9,10,12) and cells(14-	avings and contributions should be entered into 17). See NOTE below.				
1. Scheme details								
Risk Management Authority type of asset mair	tainer	LA (5)		a Strategic Approach has been taken, and				
Duration of Benefits (years)		20 (7)	that double counting	ng of benefits has been avoided?				
PV Whole-Life Benefits:		13,354,000 (8)	All costs and benefits m	ust be on a Present Value (PV) Whole-				
PV Costs			Life basis over the I	Duration of Benefits period. Where				
PV Appraisal Costs		0 (9) 2.874.000 (10)	Contributions are identi	fied these should also be on a Present Value basis.				
PV design & Construction Costs Sub Total - PV Cost for Approval (appraisal,de	sign,construction)	2,874,000 (10) 2,874,000 (11)		value basis.				
PV Post-Construction Costs		0 (12)						
PV Total Whole-Life Costs:		2,874,000 (13)	The total value of any nece	ssary contributions will depend on whether				
			maintenance (ongoing cost	s) is funded through revenue FCRM GiA, or by other				
PV Contributions secured to date PV Local Levy secured to date		(14)	means.	e maintained by an RMA other than the EA (ref cell 5).				
PV Public Contributions secured to date		(15)		the appropriate share of the up-front costs (cell 11) with				
PV Private Contributions secured to date		(16)	any shortfall needing to be	paid for via contributions identified in cells(14-17).				
PV Funding from other Environment Agency functions PV Total Contributions secured to date	ions/sources secured to date	(17) 0 (18)		(2) and any contribbutions towards them are a matter for A and should NOT be included in cells(14-17). It is				
WARNING: Contributions less than minimum r	equired in cell (2)	0 (16)		A takes the opportunities created during scheme				
			development to separately	secure contributions towards future ongoing costs				
			(cell12).					
	sure 2: households better protected agains	t flood risk	A44	Oha III II				
Number of households in: 20% most deprived areas	Before	_	After	Change due to scheme				
21-40% most deprived areas				0 0 0				
60% least deprived areas	At: Moderate Significant Very	Moderate	e Significant Very	0 0 0 Moderate Significant Very				
	risk risk significant		risk significant	risk risk significant				
	risk	Annual damages av	risk roided, compared with a househ	risk nold at low risk 150 600 1,350				
Change in household damages, in:	Per year	· ·	Over lifetime of scheme					
20% most deprived areas	£	-	£ -	OM2 (20%) £ -				
21-40% most deprived areas 60% least deprived areas	£	<u>-</u>	£ -	OM2 (21-40%) £ - OM2 (60%) £ -				
•	<u> </u>	<u> </u>	-	J 0812 (00 /0) L -				
3. Qualifying benefits under Outcome Mea Number of households in:	sure 3: households better protected agains Before		per household avoided:					
20% most deprived areas	Delote		per nousenoid avoided: nages avoided	£ 6,000 £ 6,000				
21-40% most deprived areas	51	93 Loss expect	Loss expected in 50 20 years					
60% least deprived areas	Long-term Medium-te		lue of Year 1 loss (i.e. first year dar	nages, £ 1,184 £ 3,015				

loss

loss loss

20% most deprived areas 21-40% most deprived areas 60% least deprived areas

Year 1 loss avoided:

Over lifetime of scheme:

Qual. benefits (discounted):			
OM3 (20%) OM3 (21-40%)	£	-	
OM3 (21-40%)	£	5,184,298	
OM3 (60%)	£	-	

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations met Payments under: OM4a 0.00 Hectares of net water-dependent habitat created

0.00 Hectares of net water-dependent habitat created Hectares of net intertidal habitat created 0.00 Kilometres of protected river improved OM4b OM4c

Assumed benefits	per unit:
£	15,000
£	50,000
£	80,000

Q	ual. benefits	s (discounted):
OM4a OM4b OM4c OM4	£	-
OM4b	£	-
OM4c	£	-
OM4	£	•

$\underline{\textbf{5. Qualifying benefits arising from the overall scheme, for entry into the \, Medium-Term \, Plan}$

OM, deprivation:		Qual. benefits	:	Payment rate:	
OM1		£	8,169,702	5.56	p in the £1
OM2	20% most	£	-	45.0	
	21-40%	£	-	30.0	
	Least 60%	£	-	20.0	
OM3	20% most	£	-	45.0	
	21-40%	£	5,184,298	30.0	
	Least 60%	£	-	20.0	
OM4		£	-	100.0	
Total	•	£	13,354,000		

FCRM Gi	A contribution:	
£	453,872	
£	-	
£	-	
£	-	
£	-	
£	1,555,289	
£	-	
£	-	
£	2,009,162	Maximum for Outo

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above

Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss

Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Change in household damages, in:

Raw Score	Contribution for 100% Score (£k)
70%	864,838
21%	2,849,344
26%	2,130,844
26%	2,131,161
26%	2,131,164
26%	2,131,355

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Raw Partnership Funding Score

\z\z

22% (1)

(10)

(14) (15)

16)

0 (18)

SUMMARY: prospect of FCRM GiA funding

All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP

> Scheme Benefit to Cost Ratio to Effective return to taxpaver 1.47 to 1 Effective return to area

Input cells

Calculated cells

External Contribution or saving required to achieve an Adjusted Score of 100% 7,080,838 (2) 22% (3) Adjusted Partnership Funding Score (PF) PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval) - (4)

Cell (2) shows the minimum amount of contributions and/or reductions in scheme cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into cells(9.10.12) and cells(14-17). See NOTE below.

1. Scheme details

nent Authority type of asset maintainer **LA** (5) **Duration of Benefits (years)** 20 (7) PV Whole-Life Benefits: 13,354,000 (8) Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

PV Costs

PV Appraisal Costs PV design & Construction Costs 9.090.000 Sub Total - PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs 0 (12) **9,090,000** (13) PV Total Whole-Life Costs:

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis

PV Contributions secured to date

PV Local Levy secured to date PV Public Contributions secured to date PV Private Contributions secured to date PV Funding from other Environment Agency functions/sources secured to date PV Total Contributions secured to date WARNING: Contributions less than minime um required in cell (2)

The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other means.

NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5).

Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12)

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in: Before 20% most deprived areas 21-40% most deprived areas 60% least deprived areas Significan risk risk significant risk



		After			Char	nge due to sch	neme
					0	0	0
					0	0	0
					0	0	0
	Moderate	Significant	Very	•	Moderate	Significant	Very
	risk	risk	significant		risk	risk	significant
			risk				risk
Annual d	amages avoide	ed, compared	with a househ	old at low risk	150	600	1,350

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

	Per year	
£	-	
£	-	
£	-	

Over life	etime of scheme
£	-
£	-
£	-

		benefits (discounted)
OM2 (20%)	£	-
OM2 (20%) OM2 (21-40%)	£	
OM2 (60%)	£	-

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

60% lea



Year 1 loss avoided

340,794

Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages

£	6,000	£	6,000	
	50		20	years
£	1,184	£	3,015	
Long-term		Med	dium-term	-
	loss		loss	

Change in household damages, in: 20% most deprived area 21-40% most deprived areas

ast deprived areas	£
lifving benefits under Outcome Measure 4: s	tatutory environmental obligati
ents under:	

Over lifetime of scheme

		benefits (discounted):
OM3 (20%)	£	-
OM3 (21-40%) OM3 (60%)	£	5,184,298
OM3 (60%)	£	-

4. Qua ions met

OM4a 0.00 Hectares of net water-dependent habitat created OM4b OM4c 0.00 Hectares of net intertidal habitat created 0.00 Kilometres of protected river improved

Assumed benefits per unit:		
£	15,000	
£	50,000	
£	80,000	

Q	ual. benefits	(discounted):
OM4a OM4b OM4c OM4	£	-
OM4b	£	-
OM4c	£	-
OM4	£	-

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. benefits:		Payment rate:
OM1		£	8,169,702	5.56 p in the £1
OM2	20% most	£	-	45.0
	21-40%	£	-	30.0
	Least 60%	£	-	20.0
OM3	20% most	£	-	45.0
	21-40%	£	5,184,298	30.0
	Least 60%	£	-	20.0
OM4		£	-	100.0
Total		f	13 354 000	

FCRM GiA	contribution:	
£	453,872	
£	-	
£	-	
£	-	
£	-	
£	1,555,289	
£	-	
£	-	
£	2,009,162	Maximum for Outcomes deliver

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better inform provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project. ation is available. Five typical tests are

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
22%	7,080,838
7%	10,619,344
8%	8,346,844
8%	8,347,161
8%	8,347,164
8%	8,347,355

Project Reference Registers are in 'pounds' (£) 1/10	FCRM Partnership Funding Calcu Version 8 January 2014	lator for Flood and	Coastal Erosio	on Risk Ma	anagemen	t Grant in	Aid (FCRM G	iA)			
All figures are in 'pounds' (6) Figures in libite to be entered on MTP SUMMARY: prospect of FCRM GlA funding Summary: prospect of FCRM GlA funding Some Pentenship Funding Score Extremal Contributions or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to achieve an Adjusted Score of 190%. (Extremal Contribution or saving required to risks the Adjusted FS Score to a tesset 190%. Further or more achieve on the will require the Adjusted FS Score to a tesset 190%. Further or more achieve on the Adjusted FS Score to a tesset 190%. Further or more achieve on the will require a for the Adjusted FS Score to a tesset 190%. Further or the Adjusted FS Score to a tesset 190%. Further or the Adjusted FS Score to a tesset 190%. Further or the Adjusted FS Score to a tesset 190%. Further or the Adjusted FS Score to a tesset 190%. Further or the Adjusted FS Score to a tesset 190%. Further or the Adjusted FS Score to a tesset 190%. Further or t	Project Name	Bacton 20 years o	nly - Capital Ty	pical							
All figures are in younds' (5) Figures in Bits to be an entered onto MTP SUMMARY: prospect of FCRM GIA funding Summary: Summar	Unique Project Reference		, ,								
All figures are in younds' (5) Figures in Bits to be an entered onto MTP SUMMARY: prospect of FCRM GIA funding Summary: Summar								Vau		Input colle	
Scheme Bereifit to Cost Ratio: Raw Partnarship Funding Score 2991; (1) Elemental Contribution or awing required to achieve an Adjusted Score of 190%. 601,191; (2) Col. (2) shows the minimum amount of contributions in software for the scheme specific or a displayed personal or all least 1905; Further information amount of contributions in software displayed Portnarship Funding Score (PT) 2991; (3) PV PCERM Grant Score (PT) 2991; (4) 2991; (5) 2991; (6) 2991; (7) PV ECRM Grant Score (PT) 2991; (7) PV Costs 2991; (1) 299	All figures are in 'pounds" (£)					\z\z		rey	(ls
Exemple Scheme Berniff to Cost Ratio: 295	Figures in Blue to be entered onto MTP										
Raw Partnership Funding Score Esternal Contribution or saving required to achieve an Adjusted Score of 169% 657,194 C) Cell (2) shows the minimum amount of contributions and/or reductions in scheme of Adjusted Partnership Funding Score (PF) 2979 (3) PV FCERM GlA towards the up-front costs of this scheme (PV Cost for Approval) 1, Scheme details National Adjusted Partnership Funding Score (PF) 2979 (3) 1, Scheme details National Adjusted Partnership Funding Score (PF) 2979 (3) 1, Scheme details National PV FCERM GlA towards the up-front costs of this scheme (PV Cost for Approval) 1, Scheme details National Adjusted PS Cost of a track of the scheme (PV Cost for Approval) 1, Scheme details National Adjusted PS Cost of a track of the scheme (PV Cost for Approval) 1, Scheme details National Adjusted PS Cost of a track of the scheme (PV Cost for Approval) 1, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 1, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost for Approval) 2, Scheme details National Adjusted PS Cost of the scheme (PV Cost	SUMMARY: prospect of FCRM GiA funding										
External Contribution or saving required to achieve an Adjusted Score of 109%. Septimal Contribution or saving required to achieve an Adjusted Score of 109%. Septimal Contribution or saving required to achieve an Adjusted Score of 109%. Septimal Contribution or saving required to achieve an Adjusted Score of 109%. Septimal Contribution or saving required to achieve an Adjusted PS Score to a Issued 100%. Formation of Septimal Contribution is should be entired into octol (a) 1,12 and collection in the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average and contributions should be entired into octol (a) 1,12 and collection of the desired year. Planned average (a) 1,12 and 1,12											
Adjusted Partnership Funding Score (PF) 293(3) 1. Schama details 1.	Raw Partnership Funding Score			29%	(1)		2				
Adjusted Partnership Funding Score (PF) PV FCERM GIA towards the up-front costs of this scheme (PV Cost for Approval) (4) 1. Scheme details (5) 1. Scheme details (6) 1	External Contribution or saving required to achie	eve an Adjusted Score of 10	0%	667,194	(2)						
1. Scheme details 1. Scheme det	Adjusted Partnership Funding Score (PF)			29%	(3)	increases on	this will improve the	his scheme'	s chances of	an FCRM GiA	allocation in
Risk Management Authority type of asset maintainer Duration of Benefits (years) 20 7	PV FCERM GiA towards the up-front costs of	this scheme (PV Cost for	r Approval)	_	(4)					raid be efficien	7 1110
PV Whole-Life Benefits: 1,260,000 8		iner		LA	(5)		(-)	rategic App	roach has bee	en taken, and	
PV Costs PV Agonal Costs PV Agonal Costs PV Agonal Costs PV Agonal Costs PV Agonal Costs PV Agonal Costs Sub Total PV Cost for Approval (appraisal,design,construction) PV Post-Command Costs PV Total Whole-Life Costs: 945,000 (13) 945,000 (13) 945,000 (13) 945,000 (13) 945,000 (14) 945,000 (15) 945,000 (10) (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945,000 (10) 945					_	that	double counting o	of benefits h	as been avoid	ded?	
PV Apprivation Costs Sub Total PV Continuous Costs Sub Total PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs Sub Total PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs Sub Total PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs Sub Total PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs Sub Total PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs Sub Total PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs Sub Total PV Cost for Approval (appraisal, design, construction) PV Total Whole-Life Costs: PV Total Whole-Life Costs: PV Construction Sub Total PV Cost (appraisal, design, construction) PV PV Total Whole-Life Costs: PV Construction Sub Total Pv Cost (appraisal, design, construction) PV Life Construction Sub Total Pv Cost (appraisal, design, construction) PV Life Construction Sub Total Pv Cost (appraisal, design, construction) PV PV Life Construction Sub Total Pv Cost (appraisal, design, construction) PV PV Life Construction Sub Total Pv Cost (appraisal, design, construction) PV PV Life Construction Sub Total Pv Cost (appraisal, design, construction) PV PV Life Construction Sub Total Pv Cost (appraisal, design, construction) PV PV Life Construction Sub Total Pv Cost (appraisal, design, construction) PV PV Life Construction Sub Total Pv Cost (appraisal, design, construction) PV PV Life Construction Sub Total Pv Cost (appraisal, design, construction) PV PV Life Construction Sub Total Pv Cost (appraisal, design, construction Sub Total Pv Cost (appraisal, design, construction Sub Total Pv Cost (appraisal, design, construction Sub Total Pv Cost (appraisal, design, construction Sub Total Pv Cost (appraisal, construction Sub Total Pv Cost (appraisal, construction Sub Total Pv Cost (appraisal, construction Sub Total Pv Cost (appraisal, construction Sub Total Pv Cost (appraisal, construction Sub Total Pv Cos	PV Whole-Life Benefits:			1,260,000	(8)	All costs a	nd benefits must	be on a Pr	esent Value (PV) Whole-	1
PV total Whole-Life Costs: PV Contributions secured to date PV Local Levy secured to date PV Local Levy secured to date PV Local Levy secured to date PV Local Levy secured to date PV Local Levy secured to date PV Local Levy secured to date PV Local Levy secured to date PV Local Levy secured to date PV Local Levy secured to date PV Local Levy secured to date PV Local Contributions secured to date PV Local Contributions secured to date PV Local Contributions secured to date PV Local Contributions secured to date PV Local Contributions secured to date PV Local Contributions secured to date PV Local Contributions secured to date PV Local Spread And Special Review of the Spread And Special Review of the Spread And Special Review of the Spread And Special Review of the Spread And Special Review of the Spread And Special Review of the Spread And Special Review of the Spread And Special Review of the Spread And Special Review of the Spread And Special Review of the Spread And Special Review of the Spread And Spread Review of the Spread And Spread Review of the Spread Rev	PV Appraisal Costs PV design & Construction Costs	gn,construction)					ons are identified	these sho			
PV Clocal Levy secured to date PV Public Contributions secured to date PV Public Contributions secured to date PV Public Contributions secured to date PV Public Contributions secured to date PV Private Contributions secured to date PV Fir											
Number of households in: Sefore	PV Local Levy secured to date PV Public Contributions secured to date PV Private Contributions secured to date PV Funding from other Environment Agency function PV Total Contributions secured to date				(15) (16) (17)	means. NOTE: This s Capital FCRM any shortfall r Future ongoir local agreeme recommende development	scheme is to be made GiA will fund the needing to be paiding costs (cell 12) arent by the RMA and that the RMA ta	aintained by appropriate d for via con and any cor nd should N kes the opp	y an RMA other e share of the attributions identriubutions to OT be include cortunities crea	er than the EA up-front costs ntified in cells(wards them ar ed in cells(14- ated during sc	(ref cell 5). s (cell 11) with 14-17). re a matter for 17). It is heme
Number of households in: Sefore	2. Qualifying benefits under Outcome Measu	re 2: households better p	rotected against flo	ood risk							
21-40% most deprived areas At: Moderate risk significant significant significant significant significant significant significant significant significant significant significant significant risk significant signif	Number of households in:					After		F			
At: Moderate Significant Very Moderate Significant Very isk significant risk						 					
risk risk significant risk significant risk significant risk significant risk risk significant risk significant risk significant risk significant risk risk risk risk risk risk risk risk	60% least deprived areas]		L		<u> </u>			
Annual damages avoided, compared with a household at low risk Solution Fer year Over lifetime of scheme Qual. benefits (discounted)	A		significant				significant				significant
Change in household damages, in: Per year Over lifetime of scheme Qual. benefits (discounted) OM2 (20%) £ - 21-40% most deprived areas £ - 21-40% most deprived areas E - 3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion. Number of households in: Before Damages per household avoided: Annual damages avoided 21-40% most deprived areas 21-40% most deprived areas Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages, in: Damages per household avoided: Loss expected in Present value of Year 1 loss (i.e. first year damages, in: Year 1 loss avoided: Change in household damages, in: Year 1 loss avoided: Over lifetime of scheme: Qual. benefits (discounted): OM2 (20%) £ - OM2 (21-40%) £ - OM2 (60%) £ - OM3 (60%) £ - OM3 (60%) £ - OM4 (60%) £ - OM5 (60%) £ - OM6 (60%) £ - OM7 (60%) £ - OM8 (60%) £ - OM8 (60%) £ - OM8 (60%) £ - OM8 (60%) £ - OM8 (60%) £ - OM8 (60%) £ - OM9 (60%)			risk	Annual d	lamages avoid	led, compared		at low risk	150	600	
20% most deprived areas 21-40% most deprived areas 2.1-40% most deprived areas 3.1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-			_		3						
21-40% most deprived areas E - E - OM2 (21-40%) E - OM2 (60%) E - OM2 (60%) E - OM2 (60%) E - OM3 (£	Per year	1		£ Over lifetii	me of scheme				(discounted)
3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion Number of households in: 20% most deprived areas 21-40%	£	-			£	-	0	M2 (21-40%)	£	-	
Number of households in: 20% most deprived areas 20% most deprived ar	60% least deprived areas	£	-			£	-		OM2 (60%)	£	-
20% most deprived areas £ - £ - OM3 (20%) £ -	Number of households in: 20% most deprived areas 21-40% most deprived areas	Long-ter	9 15 m Medium-term	pastal erosion	Damages per Annual damag Loss expected Present value	es avoided in of Year 1 loss (i.	.e. first year damag	es,	50 £ 1,184 Long-term	20 £ 3,015 Medium-term	
20% most deprived areas £ - £ - OM3 (20%) £ -	Change in household damages, in:	,	Year 1 loss avoided:			Over lifetin	ne of scheme:		a	ual. benefits	(discounted):
	20% most deprived areas	£	-]		£	-		OM3 (20%)	£	-
21-40% most deprived areas	21-40% most deprived areas 60% least deprived areas	£	55,883	1		£	1,117,662	0			850,117 -

Payments under:		_
OM4a	0.00	Hectares of net water-dependent habitat created
OM4b	0.00	Hectares of net intertidal habitat created
OM4c	0.00	Kilometres of protected river improved

Assumed benefits per unit:					
£	15,000				
£	50,000				
£	80,000				

	ual. benefits	(discounted):
OM4a	£	-
OM4b	£	-
OM4c	£	-
OM4	£	-

$\underline{\textbf{5. Qualifying benefits arising from the overall scheme, for entry into the \, \textbf{Medium-Term Plan}}$

OM, deprivation:		Qual. benefits:		Payment rate:
OM1		£	409,883	5.56 p in the £1
OM2	20% most	£	-	45.0
	21-40%	£	-	30.0
	Least 60%	£	-	20.0
OM3	20% most	£	-	45.0
	21-40%	£	850,117	30.0
	Least 60%	£	-	20.0
OM4		£	-	100.0
Total		£	1 260 000	

FCRM GiA	contribution:	
£	22,771	
£	-	
£	-	
£	-	
£	-	
£	255,035	
£	-	
£	-	
£	277,806	Maximum for Outcomes delivered

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As	scenario	above

As scenario above
Sensitivity 1 - Change in PV Whole Life Cost (25% increase)
Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band
Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss
Sensitivity 4 - Increase Duration of Benefits by 25%
Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
29%	667,194
6%	1,111,042
7%	874,792
7%	874,843
8%	874,053
7%	874,244

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Bacton Walcott and Ostend 100 years - Capitla works typical and buy, rent and demolish properties
bacton walcott and Ostena 100 years - Capitla works typical and buy, rent and demoisin properties

\z\z

All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP

Key	Input cells
	Calculated cells

SUMMARY: prospect of FCRM GiA funding

Raw Partnership Funding Score 43% (1) External Contribution or saving required to achieve an Adjusted Score of 100% 4,436,003 (2) 43% (3) Adjusted Partnership Funding Score (PF) PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval) - (4)

Scheme Benefit to Cost Ratio Effective return to taxpaver 2.05 Effective return to area

Cell (2) shows the minimum amount of contributions and/or reductions in scheme cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into cells(9.10.12) and cells(14-17). See NOTE below.

1. Scheme details

nent Authority type of asset maintainer **LA** (5) **Duration of Benefits (years)** 100 (7) PV Whole-Life Benefits: 16,006,000 (8) PV Costs PV Appraisal Costs PV design & Construction Costs 7.813.000 (10) Sub Total - PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs 0 (12) **7,813,000** (13) PV Total Whole-Life Costs:

Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis

PV Contributions secured to date

PV Local Levy secured to date PV Public Contributions secured to date PV Private Contributions secured to date PV Funding from other Environment Agency functions/sources secured to date PV Total Contributions secured to date WARNING: Contributions less than minimum required in cell (2)

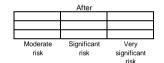
The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other

means.

NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5). Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in: Before 20% most deprived areas 21-40% most deprived areas 60% least deprived areas Significan risk risk significant risk



(14) (15)

16)

0 (18)

	After		Change due to scheme				
					0	0	0
					0	0	0
					0	0	0
	Moderate	Significant	Very	•	Moderate	Significant	Very
	risk	risk	significant		risk	risk	significant
			risk				risk
Annual damages avoided, compared with a household at low risk		150	600	1,350			

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

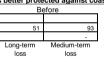
	Per year	
£		-
£		-
£		-

	Over lifetime of	scheme
	£	-
_ F	£	-
	£	-

Qual. benefits (discounted)		
OM2 (20%)	£	-
OM2 (20%) OM2 (21-40%)	£	
OM2 (60%)	£	-

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in 20% most deprived areas 21-40% most deprived areas 60% least deprived areas



Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages

6,000	£	6,000	£
20 yea		50	
3,015	£	1,184	£
ium-term	Mediu	ng-term	L
loss	lo	loss	

Change in household damages, in: 20% most deprived areas

21-40% most deprived areas 60% least deprived areas

	Year 1 loss avoided:	
3	-	
£	340,794	
3	-	

Over lifetime of scheme

Qual. benefits (discounted):				
OM3 (20%) OM3 (21-40%)	£			
OM3 (21-40%)	£	10,177,260		
OM3 (60%)	£	-		

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations met Payments under

OM4a 0.00 Hectares of net water-dependent habitat created OM4b OM4c 0.00 Hectares of net intertidal habitat created 0.00 Kilometres of protected river improved

Assumed benefits per unit:		
£	15,000	
£	50,000	
£	80,000	

Q	ual. benefits	(discounted):
OM4a OM4b OM4c OM4	£	-
OM4b	£	-
OM4c	£	-
OM4	£	-

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. benefits:		Payment rate:	
		£	5,828,740	5.56	p in the £1
OM2	20% most	£	-	45.0	ľ
	21-40%	£	-	30.0	
	Least 60%	£	-	20.0	
OM3	20% most	£	-	45.0	
	21-40%	£	10,177,260	30.0	
	Least 60%	£	-	20.0	
OM4		£	-	100.0	
Total	•	f	16 006 000		•

FCRM Gi	A contribution:	
£	323,819	
£		
£		
£		
£	-	
£	3,053,178	
£	-	
£	-	
£	3.376.997	Maximu

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss

Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

100% Score (£k) 43% 4,436,003 9% 8,874,540 11% 6,921,290		
9% 8,874,540 11% 6,921,290 11% 6,921,912	Raw Score	
9% 8,874,540 11% 6,921,290 11% 6,921,912		
11% 6,921,290 11% 6,921,912	43%	4,436,003
11% 6,921,912	9%	8,874,540
	11%	6,921,290
#N/A #N/A	11%	6,921,912
	#N/A	#N/A
11% 6,922,420	11%	6,922,420

Version 8 January 2014

Raw Partnership Funding Score

Project	Name	
Unique	Project	Reference

Bacton Walcott and Ostend 100 years - Capitla works extensive and buy,rent and demolish properties	

\z\z

24% (1)

LA (5)

100 (7)

0 (12) 14,032,000 (13)

(10)

(15)

16)

0 (18)

All figures are in 'pounds" (£)

Figures in Blue to be entered onto MTP SUMMARY: prospect of FCRM GiA funding

Scheme Benefit to Cost Ratio to Effective return to taxpaver 1.14 to 1 Effective return to area

Input cells Calculated cells

External Contribution or saving required to achieve an Adjusted Score of 100% 10,655,003 (2) 24% (3) Adjusted Partnership Funding Score (PF) PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval) - (4)

Cell (2) shows the minimum amount of contributions and/or reductions in scheme cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into cells(9.10.12) and cells(14-17). See NOTE below.

1. Scheme details nent Authority type of asset maintainer **Duration of Benefits (years)**

Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

PV Whole-Life Benefits:

16,006,000 (8) PV Appraisal Costs PV design & Construction Costs 14.032.000 Sub Total - PV Cost for Approval (appraisal, design, construction)

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis

PV Total Whole-Life Costs:

PV Post-Construction Costs

PV Contributions secured to date PV Local Levy secured to date PV Public Contributions secured to date PV Private Contributions secured to date PV Funding from other Environment Agency functions/sources secured to date PV Total Contributions secured to date WARNING: Contributions less than minime um required in cell (2)

The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other means.

NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5).

Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in: Before 20% most deprived areas 21-40% most deprived areas 60% least deprived areas Significan risk risk significant risk



	Change due to scheme				
	0	0	0		
	0	0	0		
	0	0	0		
	Moderate	Significant	Very		
	risk	risk	significant		
			risk		
sk	150	600	1 350		

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

	Per year	
£		
£		-
£		-

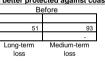
Over lifeting	ne of scheme
£	-
£	-
£	-
_	

C	lual.	benefits (discounted)
OM2 (20%)	£	-
OM2 (20%) OM2 (21-40%) OM2 (60%)	£	-
OM2 (60%)	£	-

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

60% least deprived areas



Year 1 loss avoided

Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)

£	6,000	£	6,000	
	50		20	years
£	1,184	£	3,015	
Lor	ng-term	Me	edium-term	
	loss		loss	

Change in household damages, in: 20% most deprived area 21-40% most deprived areas

Nutaama Maaaura 4. atatutam.		ablications m
	`	
	£	-
	-£	340,794
	£	-

Ove	r lifetime of scheme:
£	-
-£	34,079,416
£	-

		benefits (discounted):
OM3 (20%) OM3 (21-40%)	£	•
OM3 (21-40%)	£	10,177,260
OM3 (60%)	£	-

4. Qualifying benefits under Outo Payments under

OM4a 0.00 Hectares of net water-dependent habitat created OM4b OM4c 0.00 Hectares of net intertidal habitat created 0.00 Kilometres of protected river improved

Assumed	benefits per unit:
£	15,000
£	50,000
£	80,000

Q	ual. be	enefits (dis	counted):
OM4a	£		-
OM4b	£		-
OM4c	£		-
OM4a OM4b OM4c OM4	£		-

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. benefits	:	Payment rate:	
OM1		£	5,828,740	5.56	p in the £1
OM2	20% most	£	-	45.0	•
	21-40%	£	-	30.0	
	Least 60%	£	-	20.0	
OM3	20% most	£	-	45.0	
	21-40%	£	10,177,260	30.0	
	Least 60%	£	-	20.0	
OM4	•	£	-	100.0	
Total		£	16 006 000		

FCRM GiA	contribution:	_
£	323,819	
£	-	
£	-	
£	-	
£	-	
£	3,053,178	
£	-	
£	-	
£	3,376,997	Maximum for Outcomes

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
24%	10,655,003
5%	16,648,290
6%	13,140,290
6%	13,140,912
#N/A	#N/A
6%	13,141,420

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Bacton Walcott and Ostend 100	years - Capital works extensive and buy and rent properties

\z\z

(15)

16)

0 (18)

All figures are in 'pounds" (£)

Figures in Blue to be entered onto MTP

Scheme Benefit to Cost Ratio to Effective return to taxpaver 1.19 to 1

Input cells

Calculated cells

SUMMARY: prospect of FCRM GiA funding

Raw Partnership Funding Score	25% (1)
External Contribution or saving required to achieve an Adjusted Score of 100%	10,027,003 (2)
Adjusted Partnership Funding Score (PF)	25% (3)
PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval)	- (4)

Cell (2) shows the minimum amount of contributions and/or reductions in scheme cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into cells(9,10,12) and cells(14-17). See NOTE below.

Effective return to area

Cahama dataila

1. Scheme details Risk Management Authority type of asset maintainer	LA (5)
Duration of Benefits (years)	100 (7)
PV Whole-Life Benefits:	16,006,000 (8)
PV Costs PV Appraisal Costs PV design & Construction Costs Sub Total - PV Cost for Approval (appraisal,design,construction)	(9) 13,404,000 (10) 13,404,000 (11)
PV Post-Construction Costs PV Total Whole-Life Costs:	0 (12) 13,404,000 (13)

Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided?

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis.

PV Contributions secured to date
PV Local Levy secured to date
PV Public Contributions secured to date
PV Private Contributions secured to date
PV Funding from other Environment Agency functions/sources secured to date
PV Total Contributions secured to date
WARNING: Contributions less than minimum required in cell (2)

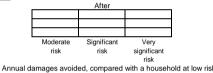
The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other

means.

NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5). Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in:			Before	
20% most deprived areas				
21-40% most deprived areas				
60% least deprived areas				
	At:	Moderate	Significant	Very
		risk	risk	significant



	Change due to scheme				
	0	0	0		
	0	0	0		
	0	0	0		
	Moderate	Significant	Very		
	risk	risk	significant		
			risk		
sk	150	600	1,350		

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

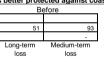
	Per year	
£	-	
£	-	
£	-	

Over lifetime of scheme		
£	-	
£	-	
£	-	

c	ual. benefits	(discounted)
OM2 (20%)	£	-
OM2 (21-40%)	£	-
OM2 (60%)	£	-

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas



Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages,

_		
	£ 6,000	£ 6,000
years	20	50
	£ 3,015	£ 1,184
•	Medium-term	Long-term
	loss	loss

Change in household damages, in:

0% least deprived areas
1-40% most deprived areas
0 /6 most deprived areas

	Year 1 loss avoided:
2	-
2	340,794
2	-

Over lifetime of scheme

		benefits (discounted):
OM3 (20%) OM3 (21-40%)	£	
OM3 (21-40%)	£	10,177,260
OM3 (60%)	£	-

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations met

rayments under.		
OM4a	0.00	Hectares of net water-dependent habitat created
OM4b	0.00	Hectares of net intertidal habitat created
OM4c	0.00	Kilometres of protected river improved

Assumed benefits per unit:		
£	15,000	
£	50,000	
£	80,000	

Q	ual. be	enefits (dis	counted):
OM4a	£		-
OM4b	£		-
OM4c	£		-
OM4a OM4b OM4c OM4	£		-

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. benefits	:	Payment rate	:
OM1		£	5,828,740	5.56	p in the £
OM2	20% most	£	-	45.0	ľ
	21-40%	£	-	30.0	
	Least 60%	£	-	20.0	
OM3	20% most	£	-	45.0	
	21-40%	£	10,177,260	30.0	
	Least 60%	£	-	20.0	
OM4	•	£	-	100.0	
Total		£	16 006 000		•

FCR	M GiA contribution:	
£	323,819	
£		
£	-	
£		
£		
£	3,053,178	
£	-	
£		
£	3,376,997	Maximum for Outcomes delivered

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
25%	10,027,003
5%	15,863,290
7%	12,512,290
7%	12,512,912
#N/A	#N/A
7%	12,513,420

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Bacton Walcott and Ostend 100 years	- Capital works typical and buy and demolish properties	

All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP \z\z

- (4)

(15)

16)

0 (18)

Input cells Calculated cells

SUMMARY: prospect of FCRM GiA funding

Raw Partnership Funding Score 22% (1) External Contribution or saving required to achieve an Adjusted Score of 100% 11,855,003 (2) 22% (3) Adjusted Partnership Funding Score (PF)

Scheme Benefit to Cost Ratio to Effective return to taxpaver 1.05 to 1 Effective return to area

PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval)

Cell (2) shows the minimum amount of contributions and/or reductions in scheme cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into cells(9.10.12) and cells(14-17). See NOTE below.

1. Scheme details

nent Authority type of asset maintainer **LA** (5) **Duration of Benefits (years)** 100 (7) PV Whole-Life Benefits: 16,006,000 (8) PV Appraisal Costs PV design & Construction Costs 15.232.000 (10) Sub Total - PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs 0 (12) **15,232,000** (13) PV Total Whole-Life Costs:

Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis

PV Contributions secured to date

PV Local Levy secured to date PV Public Contributions secured to date PV Private Contributions secured to date PV Funding from other Environment Agency functions/sources secured to date PV Total Contributions secured to date WARNING: Contributions less than minimum required in cell (2)

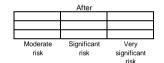
The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other

means.

NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5). Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in: Before 20% most deprived areas 21-40% most deprived areas 60% least deprived areas Moderate Significan risk risk significant risk



	After			Char	nge due to sch	o o		
			0	0 0				
			0	0	0			
			0	0	0			
	Moderate Significant Very		Moderate	Significant	Very			
	risk	risk	significant		risk	risk	significant	
			risk				risk	
Annual d	Annual damages avoided, compared with a household at low risk			150	600	1,350		

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

	Per year
£	-
£	-
£	-

Over lifetime o	f scheme
£	
£	
£	-

Qual. benefits (discounted)				
OM2 (20%)	£	-		
OM2 (21-40%)	£	-		
OM2 (60%)	£	-		

3. Qualifying benefits under Outcome Measure 3: households stal erosion

Number of households in 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

60% least deprived areas

s better protected against coas				
Before				
51	93			
	-			
Long-term Medium-term				
loss	loss			

Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages

£	6,000	£	6,000	
	50		20	years
£	1,184	£	3,015	
Lo	ng-term	Me	dium-term	
	loss		loss	

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas

	£		-
	-£		340,794
	£		-
•			

Over lifetime of scheme

Q	ual.	benefits (discounted):
OM3 (20%)	£	-
OM3 (21-40%)	£	10,177,260
OM3 (20%) OM3 (21-40%) OM3 (60%)	£	-

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations met Payments under

OM4a 0.00 Hectares of net water-dependent habitat created OM4b OM4c 0.00 Hectares of net intertidal habitat created 0.00 Kilometres of protected river improved

Assumed benefits per unit:				
£	15,000			
£	50,000			
£	80,000			

Qual. benefits (discounted):				
OM4a OM4b OM4c OM4	£	-		
OM4b	£	-		
OM4c	£	-		
OM4	£	-		

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. ber	efits:	Payment rate	:
OM1		£	5,828,740	5.56	p in the £1
OM2	20% most	£	-	45.0	ľ
	21-40%	£	-	30.0	
	Least 60%	£	-	20.0	
OM3	20% most	£	-	45.0	
	21-40%	£	10,177,260	30.0	
	Least 60%	£	-	20.0	
OM4		£	-	100.0	
Total		£	16.006.000		-

FCRI	M GiA contribution:	
£	323,819	
£	-	
£	-	
£		
£		
£	3,053,178	
£		
£		
£	3,376,997	Maximum for Outo

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
22%	11,855,003
5%	18,148,290
6%	14,340,290
6%	14,340,912
#N/A	#N/A
6%	14,341,420

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Bacton Walcott and Ostend 100 years - Capital works typical and buy and rent properties

All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP \z\z

Input cells Calculated cells

SUMMARY: prospect of FCRM GiA funding

Raw Partnership Funding Score	30% (1)
External Contribution or saving required to achieve an Adjusted Score of 100%	5,029,505 (2)
Adjusted Partnership Funding Score (PF)	30% (3)
PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval)	- (4)
1. Scheme details	
Risk Management Authority type of asset maintainer	LA (5)
Duration of Benefits (years)	20 (7)
PV Whole-Life Benefits:	16,006,000 (8)
PV Costs	
PV Appraisal Costs	(9)
PV design & Construction Costs	7,186,000 (10)
Sub Total - PV Cost for Approval (appraisal,design,construction)	7,186,000 (11)
PV Post-Construction Costs	0 (12)
PV Total Whole-Life Costs:	7,186,000 (13)
PM Outside the second to the	
PV Contributions secured to date	

Scheme Benefit to Cost Ratio to Effective return to taxpaver to 1 Effective return to area

Cell (2) shows the minimum amount of contributions and/or reductions in scheme cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into cells(9.10.12) and cells(14-17). See NOTE below.

Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis

The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other

means.

NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5). Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

um required in cell (2)

Number of households in:
20% most deprived areas
21-40% most deprived areas
60% least deprived areas

PV Local Levy secured to date PV Public Contributions secured to date

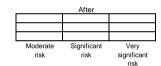
PV Private Contributions secured to date

PV Total Contributions secured to date

WARNING: Contributions less than minim

PV Funding from other Environment Agency functions/sources secured to date





(15)

16)

0 (18)

		After			Char	nge due to sch	neme
					0	0	0
					0	0	0
					0	0	0
	Moderate	Significant	Very	•	Moderate	Significant	Very
	risk	risk	significant		risk	risk	significant
			risk				risk
Annual d	amages avoide	ed, compared	with a househ	old at low risk	150	600	1,350

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

£ -	Per year
£	-
t -	-
L -	-

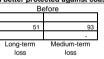
Over lifetime of scheme			
£	-		
£	-		
£	-		

Qual. benefits (discounted)				
OM2 (20%)	£	-		
OM2 (21-40%)	£	-		
OM2 (60%)	£	-		

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

60% least deprived areas



Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)

£	6,000	£	6,000	
	50		20	year
£	1,184	£	3,015	
Long-term		Me	dium-term	
	loss		loss	

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas

£	
-£	340,794
£	-

Over lifetime of scheme:		
£	-	
-£	6,815,883	
£	-	

Qual. benefits (discounted):				
OM3 (20%) OM3 (21-40%)	£	•		
OM3 (21-40%)	£	5,184,298		
OM3 (60%)	£	-		

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations met

OM4a	0.00	Hectares of net water-dependent habitat created
OM4b	0.00	Hectares of net intertidal habitat created
OM4c	0.00	Kilometres of protected river improved

	Assumed benefit	s per unit:
	£	15,000
Γ	£	50,000
	£	80,000

Qual. benefits (discounted):					
OM4a OM4b OM4c OM4	£	-			
OM4b	£	-			
OM4c	£	-			
OM4	£	-			

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. ber	nefits:	Payment rate:	
OM1		£	10,821,702	5.56	p in the £1
OM2	20% most	£	-	45.0	
	21-40%	£	-	30.0	
	Least 60%	£	-	20.0	
OM3	20% most	£	-	45.0	
	21-40%	£	5,184,298	30.0	
	Least 60%	£	-	20.0	
OM4		£	-	100.0	
Total		£	16,006,000		

FCRM GiA cor	FCRM GiA contribution:				
£	601,206				
£	-				
£	-				
£	-				
£	-				
£	1,555,289				
£	-				
£	-				
£	2,156,495	Maxim			

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
30%	5,029,505
10%	8,092,011
12%	6,295,511
12%	6,295,827
12%	6,295,831
12%	6,296,022

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Walcott and Ostend 100 years	Capital works extensive and buy, rent and demolish properties

All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP \z\z

Input cells Calculated cells

SUMMARY: prospect of FCRM GiA funding

Raw Partnership Funding Score 28% (1) External Contribution or saving required to achieve an Adjusted Score of 100% 7,161,347 (2) 28% (3) Adjusted Partnership Funding Score (PF)

Scheme Benefit to Cost Ratio to Effective return to taxpaver 1.43 to 1 Effective return to area

Cell (2) shows the minimum amount of contributions and/or reductions in scheme cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into cells(9.10.12) and cells(14-17). See NOTE below.

1. Scheme details

nent Authority type of asset maintainer **LA** (5) **Duration of Benefits (years)** 100 (7) PV Whole-Life Benefits: 14,307,000 (8)

PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval)

Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

(10)

- (4)

(15)

16)

0 (18)

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis

PV Appraisal Costs PV design & Construction Costs 10.014.000 Sub Total - PV Cost for Approval (appraisal, design, construction) PV Post-Construction Costs 0 (12) 10,014,000 (13) PV Total Whole-Life Costs:

The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other

means.

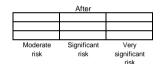
NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5). Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

PV Contributions secured to date

PV Local Levy secured to date PV Public Contributions secured to date PV Private Contributions secured to date PV Funding from other Environment Agency functions/sources secured to date PV Total Contributions secured to date WARNING: Contributions less than minim m required in cell (2)

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in: Before 20% most deprived areas 21-40% most deprived areas 60% least deprived areas Moderate Significan risk risk significant risk



		After		_	Char	nge due to sch	neme
					0	0	0
					0	0	0
					0	0	0
	Moderate	Significant	Very	-	Moderate	Significant	Very
	risk	risk	significant		risk	risk	significant
			risk				risk
Annual d	amages avoide	ed, compared	with a househ	old at low risk	150	600	1,350

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas

£ - £ -		Per year	
£ -	£	-	
£ -	£	-	
	£	-	

Over lifetime of scheme					
£	-				
£	-				
£	-				

Qual. benefits (discounted)					
OM2 (20%)	£	-			
OM2 (21-40%) OM2 (60%)	£	-			
OM2 (60%)	£	-			

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

60% least deprive

60% least deprived areas



Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages

£	6,000	£	6,000	
	50		20	years
£	1,184	£	3,015	
Lor	ng-term	Me	edium-term	
	loss		loss	

Change in household damages, in 20% most deprive 21-40% most depr

ehold damages, in:	Yea	r 1 loss avoided:
ed areas	£	-
rived areas	-£	281,896
d areas	£	-

Over lifetime of scheme

Qual. benefits (discounted):				
OM3 (20%) OM3 (21-40%)	£			
OM3 (21-40%)	£	8,418,352		
OM3 (60%)	£	-		

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations met

Payments under OM4a 0.00 Hectares of net water-dependent habitat created OM4b OM4c Hectares of net intertidal habitat created 0.00 Kilometres of protected river improved

Assumed benefits per unit:				
£	15,000			
£	50,000			
£	80,000			

Qual. benefits (discounted):					
OM4a	£	-			
OM4b	£	-			
OM4c OM4	£	-			
OM4	£	-			

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. benefits:		Payment rate:
OM1		£	5,888,648	5.56 p in the £1
OM2	20% most	£	-	45.0
	21-40%	£	-	30.0
	Least 60%	£	-	20.0
OM3	20% most	£	-	45.0
	21-40%	£	8,418,352	30.0
	Least 60%	£	-	20.0
OM4	•	£	-	100.0
Total	•	f	14 307 000	_

A contribution:	FCRM
327,147	£
-	£
-	£
-	£
-	£
2,525,506	£
-	£
-	£
2,852,653 Max	£
-	££££

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
28%	7,161,347
6%	11,720,609
8%	9,217,109
8%	9,217,624
#N/A	#N/A
8%	9,217,809

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Walcott and Ostend 100 years	- Capital works extensive and buy and rent properties

All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP \z\z

Input cells Calculated cells

SUMMARY: prospect of FCRM GiA funding

Raw Partnership Funding Score 30% (1) External Contribution or saving required to achieve an Adjusted Score of 100% 6,641,347 (2) 30% (3) Adjusted Partnership Funding Score (PF)

PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval)

Scheme Benefit to Cost Ratio to Effective return to taxpaver to 1 Effective return to area

Cell (2) shows the minimum amount of contributions and/or reductions in scheme cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into cells(9.10.12) and cells(14-17). See NOTE below.

1. Scheme details

nent Authority type of asset maintainer **LA** (5) **Duration of Benefits (years)** 100 (7) PV Whole-Life Benefits: 14,307,000 (8) PV Costs PV Appraisal Costs PV design & Construction Costs 9.494.000 (10) Sub Total - PV Cost for Approval (appraisal, design, construction)

Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present

Value basis

PV Post-Construction Costs PV Total Whole-Life Costs: 0 (12) **9,494,000** (13)

(14) (15)

16)

0 (18)

- (4)

The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other

means.

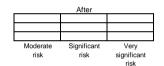
NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5). Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17).
Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

PV Contributions secured to date

PV Local Levy secured to date PV Public Contributions secured to date PV Private Contributions secured to date PV Funding from other Environment Agency functions/sources secured to date PV Total Contributions secured to date WARNING: Contributions less than minimum required in cell (2)

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in: Before 20% most deprived areas 21-40% most deprived areas 60% least deprived areas Significan risk risk significant risk



		After			Char	nge due to sch	neme
					0	0	0
					0	0	0
					0	0	0
	Moderate	Significant	Very	•	Moderate	Significant	Very
	risk	risk	significant		risk	risk	significant
			risk				risk
Annual damages avoided, compared with a household at low risk			150	600	1,350		

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

	Per year
£	-
£	-
£	-

Over lifetime	e of scheme
£	-
£	-
£	-

		benefits (discounted)
OM2 (20%)	£	-
OM2 (21-40%)	£	-
OM2 (60%)	£	-

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

60% least deprived areas



Year 1 loss avoided

the £1

Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages

£	6,000	£	6,000	
	50		20	years
£	1,184	£	3,015	
Long	g-term	Med	dium-term	
lo	oss		loss	

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas

Over lifetime of scheme

Qual. benefits (discounted):				
OM3 (20%) OM3 (21-40%)	£	-		
OM3 (21-40%)	£	8,418,352		
OM3 (60%)	£	-		

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations med

Payments under OM4a 0.00 Hectares of net water-dependent habitat created OM4b OM4c 0.00 Hectares of net intertidal habitat created 0.00 Kilometres of protected river improved

Assumed	benefits per unit:
£	15,000
£	50,000
£	80,000

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. benefits	:	Payment rate:	
OM1		£	5,888,648	5.56 p	in (
OM2	20% most	£	-	45.0	
	21-40%	£	-	30.0	
	Least 60%	£	-	20.0	
OM3	20% most	£	-	45.0	
	21-40%	£	8,418,352	30.0	
	Least 60%	£	-	20.0	
OM4		£	-	100.0	
Total		£	14.307.000		

FCRM G	iA contribution:	_
£	327,147	
£	-	
£	-	
£	-	
£	-	
£	2,525,506	
£	-	
£	-	
£	2,852,653	Maxin

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss

Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
30%	6,641,347
7%	11,070,609
8%	8,697,109
8%	8,697,624
#N/A	#N/A
8%	8,697,809
	30% 7% 8% 8% #N/A

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Walcott and Ostend 100 years -	Capital work typical and buy, rent, and demolish properties

\z\z

All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP

Input cells Calculated cells

SUMMARY: prospect of FCRM GiA funding

Raw Partnership Funding Score	49% (1)
External Contribution or saving required to achieve an Adjusted Score of 100%	2,987,347 (2)
Adjusted Partnership Funding Score (PF)	49% (3)
PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval)	- (4)
1. Scheme details	
Risk Management Authority type of asset maintainer	LA (5)
Duration of Benefits (years)	100 (7)
PV Whole-Life Benefits:	14,307,000 (8)
PV Costs	
PV Appraisal Costs	(9)
PV design & Construction Costs	5,840,000 (10)
Sub Total - PV Cost for Approval (appraisal,design,construction)	5,840,000 (11)
PV Post-Construction Costs	0 (12)
PV Total Whole-Life Costs:	5,840,000 (13)

Scheme Benefit to Cost Ratio Effective return to taxpaver Effective return to area

Cell (2) shows the minimum amount of contributions and/or reductions in scheme cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into cells(9.10.12) and cells(14-17). See NOTE below.

Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis

The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other

means.

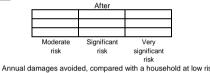
NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5). Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in:	_		Before	
20% most deprived areas				
21-40% most deprived areas				
60% least deprived areas				
	At:	Moderate	Significant	Very
		risk	risk	significant risk

PV Funding from other Environment Agency functions/sources secured to date

WARNING: Contributions less than minimum required in cell (2)



(15)

16)

0 (18)

	Change due to scheme			
	0	0	0	
	0	0	0	
	0	0	0	
	Moderate	Significant	Very	
	risk	risk	significant	
			risk	
sk	150	600	1,350	

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

PV Contributions secured to date

PV Local Levy secured to date PV Public Contributions secured to date

PV Private Contributions secured to date

PV Total Contributions secured to date

	Per year	
£		-
£		-
£		-

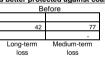
Over	lifetime of scheme
£	-
£	-
£	-

c	ual. benefits	(discounted)
OM2 (20%)	£	-
OM2 (21-40%)	£	-
OM2 (60%)	£	-

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

60% least deprived



Year 1 loss avoided

Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)

£	6,000	£	6,000	
	50		20	year
£	1,184	£	3,015	
Long-term		Ме	edium-term	
loss			loss	

Change in household damages, in: 20% most deprived 21-40% most depri

d areas	£ -
ived areas	-£ 281,896
d areas	£ -

Over	lifetime of scheme:
£	-
-£	28,189,564
£	-

Qual. benefits (discounted):		
OM3 (20%) OM3 (21-40%)	£	-
OM3 (21-40%)	£	8,418,352
OM3 (60%)	£	-

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations med

i ajinonio anaon		_
OM4a	0.00	Hectares of net water-dependent habitat created
OM4b	0.00	Hectares of net intertidal habitat created
OM4c	0.00	Kilometres of protected river improved

Assumed I	penefits per unit:
£	15,000
£	50,000
£	80,000

Q	ual. benefits	(discounted):
OM4a OM4b OM4c OM4	£	-
OM4b	£	-
OM4c	£	-
OM4	£	-

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. benefits:		Payment rate:
OM1		£	5,888,648	5.56 p in the £1
OM2	20% most	£	-	45.0
	21-40%	£	-	30.0
	Least 60%	£	-	20.0
OM3	20% most	£	-	45.0
	21-40%	£	8,418,352	30.0
	Least 60%	£	-	20.0
OM4	•	£	-	100.0
Total		f	14 307 000	_

FCRM	GiA contribution:	
£	327,147	
£	-	
£	-	
£	-	
£	-	
£	2,525,506	
£	-	
£	-	
£	2,852,653	Maximum for 0

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
49%	2,987,347
11%	6,503,109
14%	5,043,109
14%	5,043,624
#N/A	#N/A
14%	5,043,809

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Walcott and Ostend 100 years	Capital Works typical and Buy and demolish properties

\z\z

All figures are in 'pounds" (£) Figures in Blue to be entered onto MTP

Key	Input cells
_	Calculated cells

SUMMARY: prospect of FCRM GiA funding

Raw Partnership Funding Score	24% (1)
External Contribution or saving required to achieve an Adjusted Score of 100%	9,176,347 (2)
Adjusted Partnership Funding Score (PF)	24% (3)

Scheme Benefit to Cost Ratio Effective return to taxpaver 1.19 Effective return to area Cell (2) shows the minimum amount of contributions and/or reductions in scheme

cost that are required to raise the Adjusted PF Score to at least 100%. Further increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval) - (4) cells(9.10.12) and cells(14-17). See NOTE below.

(15)

16)

0 (18)

1. Scheme details

Risk Management Authority type of asset maintainer	LA (5)
Duration of Benefits (years)	100 (7)
PV Whole-Life Benefits:	14,307,000 (8)
PV Costs PV Appraisal Costs PV design & Construction Costs Sub Total - PV Cost for Approval (appraisal,design,construction)	(9) 12,029,000 (10) 12,029,000 (11)
PV Post-Construction Costs PV Total Whole-Life Costs:	0 (12) 12,029,000 (13)

Yes (6) Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis

PV Contributions secured to date	
PV Local Levy secured to date	
PV Public Contributions secured to date	L
PV Private Contributions secured to date	[
PV Funding from other Environment Agency functions/sources secured to date	[
PV Total Contributions secured to date	ſ
WARNING: Contributions less than minimum required in cell (2)	

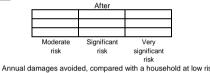
The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other means.

NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5).

Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in:	_		Before	
20% most deprived areas				
21-40% most deprived areas				
60% least deprived areas				
	At:	Moderate	Significant	Very
		risk	risk	significant



	Change due to scheme			
	0	0	0	
	0	0	0	
	0	0	0	
	Moderate	Significant	Very	
	risk	risk	significant	
			risk	
sk	150	600	1.350	

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

	Per year	
£	-	
£	-	
£	-	
•		

	Over lifetime of scher	me
- 3	£ -	
3	- 3	
3	- 3	
_		

c	Qual. benefits (c	liscounted)
OM2 (20%)	£	-
OM2 (21-40%)	£	-
OM2 (60%)	£	-

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

60% least of



Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages,

1	£ 6,000	£	6,000	
	50		20	year
3	£ 1,184	£	3,015	
Long-term		Me	edium-term	
loss			loss	

Change in household damages, in: 20% most of 21-40% most

i nouscrioia admages, in.		rear rioss avoided.
deprived areas	£	-
ost deprived areas	-£	281,896
deprived areas	£	-

Over lifetime of scheme

Qual. benefits (discounted):		
OM3 (20%) OM3 (21-40%)	£	-
OM3 (21-40%)	£	8,418,352
OM3 (60%)	£	-

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations met

i ayıncına unucı.		
OM4a	0.00	Hectares of net water-dependent habitat created
OM4b	0.00	Hectares of net intertidal habitat created
OM4c	0.00	Kilometres of protected river improved

Assumed benefits per unit:		
£	15,000	
£	50,000	
£	80,000	

Q	ual. benefits	(discounted):
OM4a OM4b OM4c OM4	£	-
OM4b	£	-
OM4c	£	-
OM4	£	-

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation:		Qual. benefits		Payment rate	:
OM1		£	5,888,648	5.56	p in the £
OM2	20% most	£	-	45.0	ľ
	21-40%	£	-	30.0	
	Least 60%	£	-	20.0	
OM3	20% most	£	-	45.0	
	21-40%	£	8,418,352	30.0	
	Least 60%	£	-	20.0	
OM4		£	-	100.0	
Total		£	14 307 000		='

FCRM Gi	iA contribution:	
£	327,147	
£	-	
£	-	
£		
£		
£	2,525,506	
£	-	
£	-	
£	2.852.653	Maximum fo

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
24%	9,176,347
5%	14,239,359
7%	11,232,109
7%	11,232,624
#N/A	#N/A
7%	11,232,809

Version 8 January 2014

Project	Name	
Unique	Project	Reference

Walcott and Ostend 100 years, Capital works (typical) and Buy and rent properties

\z\z

54% (3)

14,307,000 (8)

5.320.000

0 (12) **5,320,000** (13)

(10)

(15)

16)

0 (18)

- (4)

All figures are in 'pounds" (£)

Figures in Blue to be entered onto MTP

SUMMARY: prospect of FCRM GiA funding

Raw Partnership Funding Score 54% (1) External Contribution or saving required to achieve an Adjusted Score of 100% 2,467,347 (2)

Adjusted Partnership Funding Score (PF)

PV FCERM GiA towards the up-front costs of this scheme (PV Cost for Approval)

1. Scheme details nent Authority type of asset maintainer **LA** (5) **Duration of Benefits (years)** 100 (7)

PV Whole-Life Benefits:

PV Appraisal Costs PV design & Construction Costs Sub Total - PV Cost for Approval (appraisal, design, construction)

PV Post-Construction Costs PV Total Whole-Life Costs:

PV Contributions secured to date

PV Local Levy secured to date PV Public Contributions secured to date PV Private Contributions secured to date

PV Funding from other Environment Agency functions/sources secured to date PV Total Contributions secured to date WARNING: Contributions less than minim m required in cell (2)

Yes (6)
Is evidence available that a Strategic Approach has been taken, and that double counting of benefits has been avoided ?

cells(9.10.12) and cells(14-17). See NOTE below.

Scheme Benefit to Cost Ratio

Effective return to taxpaver

Cell (2) shows the minimum amount of contributions and/or reductions in scheme cost that are required to raise the Adjusted PF Score to at least 100%. Further

increases on this will improve this scheme's chances of an FCRM GiA allocation in the desired year. Planned savings and contributions should be entered into

Effective return to area

All costs and benefits must be on a Present Value (PV) Whole-Life basis over the Duration of Benefits period. Where Contributions are identified these should also be on a Present Value basis

The total value of any necessary contributions will depend on whether maintenance (ongoing costs) is funded through revenue FCRM GiA, or by other

means.

NOTE: This scheme is to be maintained by an RMA other than the EA (ref cell 5). Capital FCRM GiA will fund the appropriate share of the up-front costs (cell 11) with any shortfall needing to be paid for via contributions identified in cells(14-17). Future ongoing costs (cell 12) and any contributions towards them are a matter for local agreement by the RMA and should NOT be included in cells(14-17). It is recommended that the RMA takes the opportunities created during scheme development to separately secure contributions towards future ongoing costs (cell12).

2. Qualifying benefits under Outcome Measure 2: households better protected against flood risk

Number of households in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

Before Significa risk risk significant risk

		After			Char	nge due to sch	neme
					0	0	0
					0	0	0
					0	0	0
	Moderate	Significant	Very	•	Moderate	Significant	Very
	risk	risk	significant		risk	risk	significant
			risk				risk
Annual d	amages avoide	ed, compared	with a househ	old at low risk	150	600	1,350

Input cells

Calculated cells

to

Change in household damages, in: 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

Qual. benefits (discounted)				
OM2 (20%)	£	-		
OM2 (20%) OM2 (21-40%) OM2 (60%)	£	-		
OM2 (60%)	£	-		

3. Qualifying benefits under Outcome Measure 3: households better protected against coastal erosion

Number of households in 20% most deprived areas 21-40% most deprived areas 60% least deprived areas

Long-term loss Damages per household avoided: Annual damages avoided Loss expected in Present value of Year 1 loss (i.e. first year damages

£	6,000	£	6,000	
	50		20	years
£	1,184	£	3,015	
Long-term		M	edium-term	
	loss		loss	

Change in household damages, in: 20% most deprived areas

21-40% most deprived areas 60% least deprived areas

Year 1 loss avoided

Over lifetime of scheme

Qual. benefits (discounted):				
OM3 (20%) OM3 (21-40%)	£	-		
OM3 (21-40%)	£	8,418,352		
OM3 (60%)	£	-		

4. Qualifying benefits under Outcome Measure 4: statutory environmental obligations med

OM4a OM4b OM4c

0.00 Hectares of net water-dependent habitat created 0.00 Hectares of net intertidal habitat created 0.00 Kilometres of protected river improved

15.000

Q	ual. be	nefits (dis	counted):
OM4a OM4b OM4c OM4	£		-
OM4b	£		-
OM4c	£		-
OM4	£		-

5. Qualifying benefits arising from the overall scheme, for entry into the Medium-Term Plan

OM, deprivation Qual, benefits Payment rate OM1 OM2 5.888.648 45.0 21-40% east 609 20.0 ОМЗ 20% mos 45.0 21-40% 8.418,352 Least 609 20.0 OM4 14,307,000

FCRM GiA co	ntribution:
£	327,147
£	-
£	-
£	-
£	-
£	2,525,506
£	-
£	-
£	2,852,653

Sensitivity Testing. It is important that users of this calculator appreciate the implications on funding from changes to input data which may become necessary as the project develops and better information is available. Five typical tests are provided below. Users should consider how appropriate these are to their project, what other tests may be appropriate and how best to use the information with all those that may be involved in the project.

As scenario above Sensitivity 1 - Change in PV Whole Life Cost (25% increase)

Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band

Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss Sensitivity 4 - Increase Duration of Benefits by 25%

Sensitivity 5 - Reduce Duration of Benefits by 25%

Raw Score	Contribution for 100% Score (£k)
54%	2,467,347
12%	5,853,109
15%	4,523,109
15%	4,523,624
#N/A	#N/A
15%	4,523,809



Appendix B: Sensitivity Analysis on Adaptation options

Sensitivity analysis has been undertaken on the potential timings of buying and renting properties for Options 6 (Buy and rent) and 9 (Buy, rent and demolish) only. This does not include the capital works for 0-20 years before adaptation begins.

Three sensitivity tests have been undertaken:

- 1. Buy the first batch of properties in year 1 and rent until they are at imminent risk of erosion (on average year 30)
- 2. Buy the different batches of properties 20 years before currently i.e year 1, year 20 and year 50 and rent all properties until they are at imminent risk of erosion (average years 30,55 and 85)
- 3. Buy all properties in year 1 and rent all properties until they are at imminent risk of erosion (average years 30,55 and 85)

Results of the sensitivity tests are presented in the tables below.

Table 6.1: Sensitivity analysis for adaptation measures for Option 6(Buy and rent) for Bacton

	PV Benefits(£k)	PV Costs (£k) with 60% Optimism Bias	BCR
Sensitivity test -1- buy and rent first batch of properties from year 0 until year 30	£1,698k	£1,046	1.6
Sensitivity test -2- buy and rent all properties 20 years earlier than currently.		£734k	2.3
Sensitivity test 3- buy all properties in year 0 and rent until lost		£184k	9.2

Table 6.2: Sensitivity analysis for adaptation measures for Option 9(Buy, rent and demolish) for Bacton

	PV Benefits(£k)	PV Costs (£k) with 60% Optimism Bias	BCR
Sensitivity test -1- buy and rent first batch of properties from year 0	£1,698k	£1,220k	1.4
Sensitivity test -2- buy and rent all properties 20 years earlier than currently.		£938k	1.8
Sensitivity test 3- buy all properties in year 0 and rent until lost		£528k	3.2

Table 6.3: Sensitivity analysis for adaptation measures for Option 6(Buy and rent) for Walcott and Ostend

	PV	PV Costs (£k) with 60%	BCR
	Benefits(£k)	Optimism Bias	
Sensitivity test -1- buy and rent first		£2,993k	5.3
batch of properties from year 0			
Sensitivity test -2- buy and rent all	£14,308k	£1,631k	8.8
properties 20 years earlier than			
currently.			
Sensitivity test 3- buy all properties in		£-3,890k	-3.7
year 0 and rent until lost			



Table 6.4: Sensitivity analysis for adaptation measures for Option 9(Buy, rent and demolish) for Walcott and Ostend

	PV Benefits(£k)	PV Costs (£k) with 60% Optimism Bias	BCR
Sensitivity test -1- buy and rent first batch of properties from year 0		£3,795k	3.8
Sensitivity test -2- buy and rent all properties 20 years earlier than currently.	£14,308k	£2,692k	5.3
Sensitivity test 3- buy all properties in year 0 and rent until lost	_	£436k	32.8



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