Gunton and Corton Options Appraisal

Appendix F - Funding

Document No. 07 | 2.0

March 2022

Coastal Partnership East

Gunton and Corton Options Appraisal

Project No:	B2413600
Document Title:	Appendix F - Funding
Document No.:	Document No. 07
Revision:	1
Document Status:	Issued
Date:	January 2022
Client Name:	Coastal Partnership East
Client No:	
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File Name:	Appendix_F_Funding.docx

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Document history and status

Issue	Date	Description	Author	Checked	Reviewed	Approved
0	October 2021	Draft for client review	Beatriz Serato	Kevin Burgess	Kevin Burgess	Kevin Burgess
1	January 2022	Issued for stakeholder engagement				Kevin Burgess
2	March 2022	Issued with formatting corrections				Beatriz Serato

Contents

1. Introduction

The purpose of this appendix is to set out the approach to, and the assumptions made for, the assessment of Flood and Erosion Risk Management (FCERM) Grant in Aid (GiA) eligibility and Partnership Funding (PF) requirements for the Gunton, Corton and North Corton frontages. This builds upon previous economic assessment undertaken during the Strategy and describes the results for the re-calculation of economic damages and re-estimate of works costs for all three frontages.

This is not the full economic assessment required as part of the business case for any scheme; that would require much more detailed information and involve more detailed calculation of both costs and benefits. The remit of this present exercise is instead to provide a high-level review of economics sufficient to inform discussions with partner stakeholders and potential funders.

2. Methodology

An Economic Assessment was produced in 2017 as part of the Strategy (CH2M, 2017), which details how risk was determined, and damages and costs were appraised, for each frontage between Gorleston to Lowestoft. The PF estimate produced for this Gunton and Corton Options Appraisal largely uses information from the Strategy.

The inputs used for this assessment were as follows:

1) Erosion estimates: includes timeframe of which holiday parks (including main buildings and caravans), residential and commercial properties, roads and other infrastructure assets would be lost.

2) Estimate of damages, including:

   - Estimate costs for relocation of caravans
   - Estimate write-off value of residential and commercial properties at risk of erosion, based on the Strategy
   - Estimate economic value for holiday parks and agricultural land, based on the Strategy
   - People related benefits estimate (e.g. mental health) for OM1

3) Estimated costs for potentially preferred scheme costs (see Appendix C).

The outcomes above were then used to populate a draft Partnership Funding Calculator (PFC).

3. Summary of assumptions

3.1 Determination of risk

3.1.1 Erosion risk

Coastal erosion presents the main risk for assets along Gunton Warren, Corton and North Corton. Appendix A Coastal Processes provides a detailed assessment of erosion rates, which have been compared to the rates used in the Strategy Economic Assessment (CH2M, 2017).

This study identified erosion rates between 1.5 m/year and 2.2 m/year for North Corton. These rates are comparable to those established in the Strategy, of 1.7 m/year, with sensitivity test for benefit-cost calculations using a rate of 2.3 m/year (CH2M, 2017). Therefore, assumptions made by the Strategy can still be considered valid, and those have been adopted determine the potential damages/losses.

Two cases have been considered. The 1.7 m/year erosion rate is representative of the underlying erosion trend. Although assumptions for increasing rates due to climate change have not been undertaken, the upper rate of 2.3 m/year is considered indicative of the likely rate of erosion under a scenario of accelerated sea level rise.

Given the similarity in geology at both Corton and North Corton frontages, without defences they are likely to erode at similar rates. Rates for North Corton are therefore also appropriate to use for Corton in the case of do-nothing.

At Gunton Warren, more rapid erosion rates have been experienced since the Strategy, ranging between 3.5 m/year and 4.5 m/year although higher rates have also occurred on an annual basis. This therefore represents a rapid increase in erosion along Gunton Warren since the Strategy, and the estimated time of asset losses have therefore been recalculated accordingly.

The year of which erosion was assumed to start along each frontage is shown in Table 3-1. For North Corton and Corton, this is the same as stated in the Strategy. For Gunton Warren however, this has been updated as erosion rates are now more rapid than previously observed at Strategy stage. For this frontage, erosion was changed to start in year 0.

Table 3-1: Assumptions for options regarding onset of erosion for Gunton Warren, Corton and North Corton. Modified from CH2M (2017)

Location	Baseline (Do nothing)	Do something – proposed option
Gunton Warren	*Erosion starts at year 0.*	*No erosion*
Corton	*Erosion starts at year 10.*	*No erosion*
North Corton	*Erosion starts at year 0.*	*Erosion starts in year 0, at half rate of Do Nothing, and stabilises in long term.*

3.1.2 Duration of benefits

A 100-year duration of benefits is assumed for the purpose of this review. This is in line with the Strategy recommendation for medium and long term policies at all three frontages.

3.1.3 Appraisal of benefits and damages avoided

The Strategy thoroughly reports on how different assets at risk along Gunton Warren, Corton and North Corton have been considered for the calculation of benefits and avoided damages. Due to the similarity of erosion rates calculated for the Strategy and for the Gunton and Corton Options assessment, the assumptions made by the Strategy on Appendix F – Economic Assessment are, in general, still valid. This is case for the following:

- Commercial and community buildings: market value was assumed the same as the Strategy as rateable value published by the Valuation Office Agency (VOA) is still the same for most of the properties;

- Agricultural land: the value of £8,800/acre estimated for the Strategy assumed;

- Car parks: in line with the Strategy, a basic build cost of £1,000 per space was assumed for loss of car park (surface level);

- Contaminated land: the Strategy stated that under a do nothing scenario, the landfill site located at Lowestoft North Beach (currently behind the seawall) would become expose and erode. Although this is outside of the study area for this assessment, benefits in protecting the landfill site were accounted for in one of the PF estimates for Gunton Warren (see Section 3.3 for PF estimates). The total cost (including landfill tax) to remove all waste material from the site was assumed the same as the Strategy: £41.49 million. It is important to note that this benefit was accounted for comparison purposes only.

For this assessment, a re-evaluation of the following was undertaken:

- Residential properties: Ordnance Survey database AddressBasePlus 2015 was reviewed against National Receptor Database 2014 provided by CPE, which showed no new residential properties since the Strategy. Valuation, however, did change and using the Housing Price Index (available at http://landregistry.data.gov.uk) the increase in house prices between 2016 (when the Economic Assessment for the Strategy was undertaken) and 2021 was around 20%. Therefore, the total damages calculated by the Strategy was then increased by 20% to represent present-day market value of properties. In addition to this, see Section 3.1.5.1 for consideration on timing for property loss at Gunton Warren;

- Holiday and Caravan parks: the Strategy has assumed a relocation cost of £6,000 per each static caravan. This value has been updated using the construction output price indices to around £8,000 per plot (RPA, 2020);

- Infrastructure: since the Strategy, main wastewater pipelines owned by Anglian Water have become at risk of undermining due to erosion. Plans for relocating the pipeline are currently ongoing and this have not been included in this PF estimate. However, costs for future relocation to Corton Road have been included as this could be necessary in 20 years' time, if current erosion rates are ongoing. See Section 3.1.5.1 for more details;

- Contaminated land: since the Strategy, buried oil waste at Gunton Warren has become exposed and some of this material has been eroded. The Strategy had estimated a cost between £40,000 and £65,000 for excavation and off-site disposal of approximately 74 tonnes of material being sent to landfill. For this assessment, this has been increased to £100,000 as an estimate due to inflation. See Section 3.1.5.1 for more details.

Benefits and avoided damages calculated for the Strategy are already calculated as Present Values (PV) in line with discount rates specified by HM Treasure, and have been reused unless the time to loss has been recalculated. Where relevant, the recommendations from the Middlesex University Multi-Coloured Manual (MCM, 2021) have been used and updated accordingly.

People related benefits for OM1a were also estimated for this funding assessment. According to the latest guidance[1], mental health effects of erosion were taken into account the value of £9,546 per adult to represent the mental health cost of erosion This is applied for residential properties, which have a national average of 2 adults per property.

[1] https://www.gov.uk/government/publications/partnership-funding-supporting-documents/mental-health-costs-of-flooding-and-erosion

Although benefit estimates undertaken at this stage largely rely on the Economic Assessment undertaken during the Strategy, it should be noted that the loss of tourism and mental health effects on employees of the various caravan sites have not been account for at this stage. In addition, the National Receptor Database used for this assessment is due to be updated (2021); it is believed that the value of holiday homes, chalets and other infrastructure related to the holiday parks has been reviewed but further confirmation is required upon dataset release.

3.1.4 Deprivation index

Deprivation index is provided by http://dclgapps.communities.gov.uk/imd/iod_index.html.

Gunton Warren is within Gunton & St. Margarets ward, which is ranked 17,206 out of 32,844 in England in 2019; this falls within the 50% least deprived areas for OM2a & OM3 (Figure 3-1).

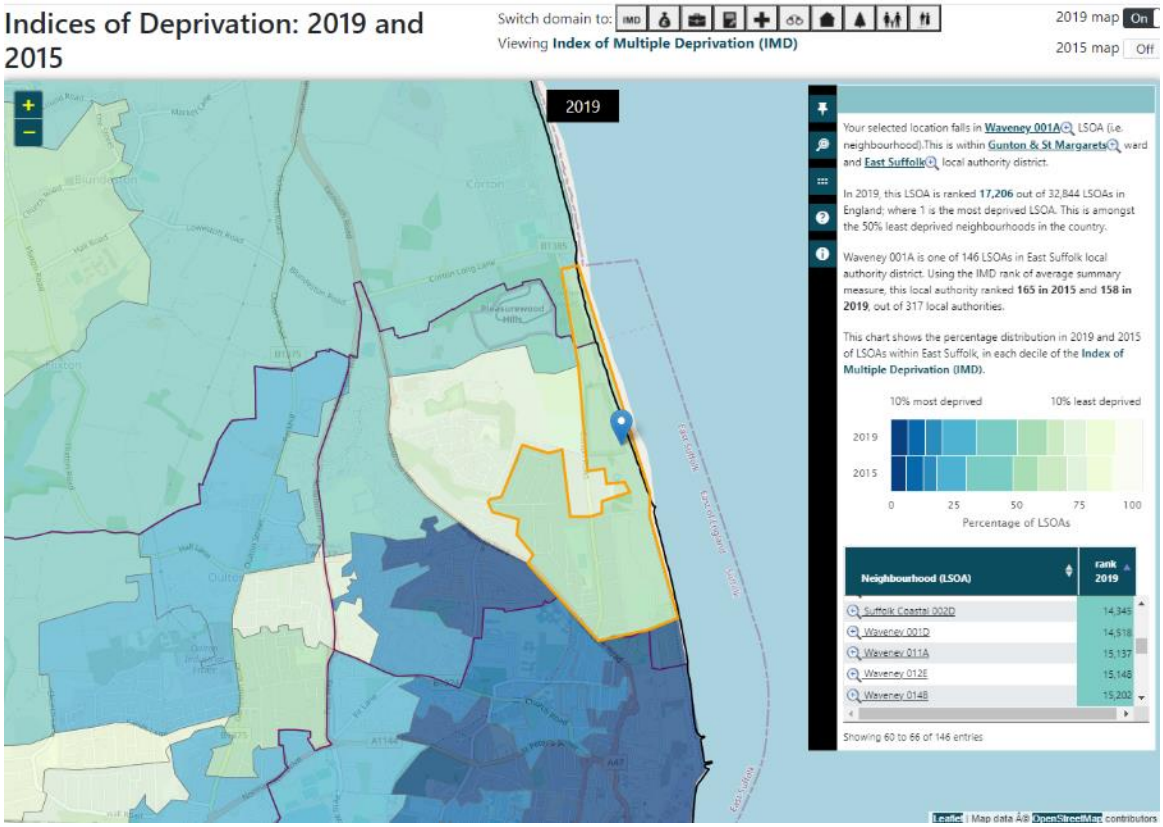

Figure 3-1: Deprivation index (2019) for Gunton Warren. Source: http://dclgapps.communities.gov.uk/imd/iod_index.html

Corton and North Corton are within Lothingland ward, which is ranked 13,663 out of 32,844 in England in 2019; this is amongst the 50% most deprived areas for OM2a & OM3 (Figure 3-2).

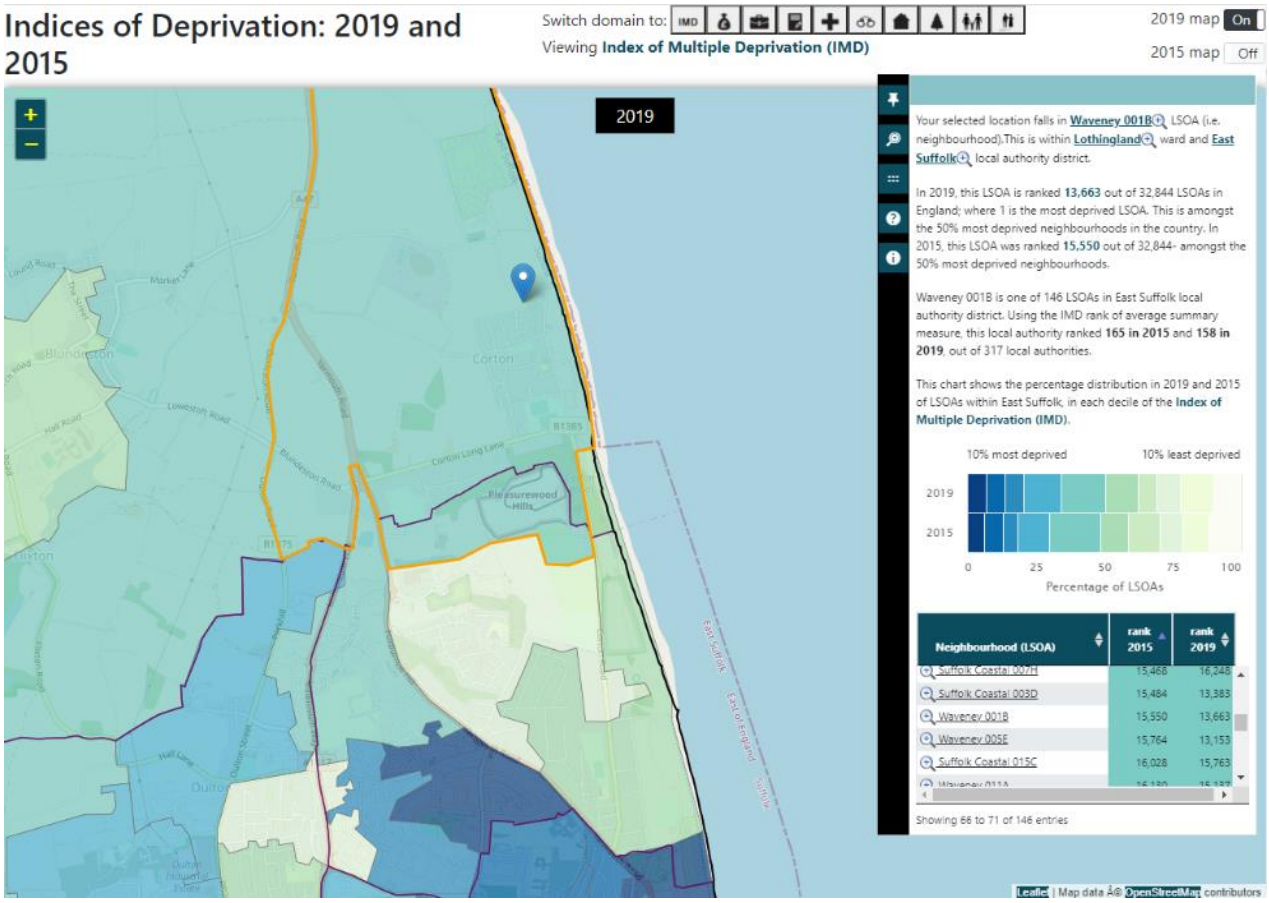

Figure 3-2: Deprivation index (2019) for Corton and North Corton. Source: http://dclgapps.communities.gov.uk/imd/iod_index.html

3.1.5 PV Benefits estimate

3.1.5.1 Gunton Warren

For the PV benefits estimate at Gunton Warren, the same residential properties data used in the Strategy was applied in this assessment, with the following adjustments:

- 20% increase in present-day market value;
- Timing of potential erosion loss adjusted. This was due to the more rapid erosion rates observed over the last 10 years. If the faster erosion rates continue, assets will be at risk sooner. Therefore, some residential properties are now likely to be affected by year 40 (instead of year 70 in the Strategy). Residential properties potentially affected by erosion after year 70 have not been accounted for in this update as the discounted value will not drastically alter the overall benefits calculation at this stage.

PF estimates for Gunton Warren considered residential properties, buried oil deposits remediation and relocation of three Anglian Water pipelines in year 20 (Case 1 - see Table 3-2 for PV benefits).

In addition, a second case was considered for Gunton; this includes the benefits stated for Case 1, remediation of Lowestoft North Beach landfill site in year 10 (given the rapid erosion rates currently ongoing) and relocation of Anglian Water pumping station (Case 2 – see Table 3-3 for PV benefits). The risk-free market value used for those estimates are indicative and will need to be updated at OBC stage.

It should be noted that Case 2 above reports benefits that lie outside of the study area and is included only to demonstrate that there are considerable indirect benefits of limiting erosion along the Gunton Warren frontage

and that works here might be justified on a wider basis than the Gunton benefits alone. However, it is important to recognise that those same benefits, along with others, would also need to form part of any business case for more extensive works if required along the remainder of the Lowestoft North Beach frontage. Benefits cannot be double counted (i.e. used twice for two separate schemes), therefore caution will need to be exercised if some of these were to be considered for part of the justification of works at Gunton.

Table 3-2: Appraisal for damages and benefits under Do-nothing for 2021 erosion rate at Gunton Warren - Case 1

Assumption for economic appraisal		**No maintenance works undertaken. Risk that beach at southern end increases, with erosion from year 0.**		
Damages	Residential properties	First properties at risk by year 40. Total number of residential properties at risk by year 100 = 11.	PV £1,179,668	Total damages PV £6,298,678
	Commercial properties	None.	PV £0	
	Agricultural land	None.	PV £0	
	Holiday Parks	None.	PV £0	
	Other	Costs of buried oil remediation works	PV £93,351	
		Costs for relocation of three Anglian Water pipelines by year 20	PV £5,025,659	
Benefits	No benefits are associated with the baseline case of Do Nothing		PV £0	
Costs	No costs are associated with the baseline case of Do Nothing.		PV £0	

Table 3-3: Appraisal for damages and benefits under Do-nothing for 2021 erosion rate at Gunton Warren, including Anglian Water pumping station and landfill site at Lowestoft North Beach – Case 2

Assumption for economic appraisal		**No maintenance works undertaken. Risk that beach at southern end increases, with erosion from year 0.**		
Damages	Residential properties	First properties at risk by year 40. Total number of residential properties at risk by year 100 = 11.	PV £1,179,668	Total damages PV £39,256,314
	Commercial properties	None.	PV £0	
	Agricultural land	None.	PV £0	
	Holiday Parks	None.	PV £0	
	Other	Costs of buried oil remediation works	PV £93,351	
		Costs for relocation of three Anglian Water pipelines by year 20	PV £5,025,659	
		Cost for relocation Anglian Water pumping station by year 10	PV £3,544,594	
		Cost for landfill site remediation at Lowestoft North Beach by year 10	PV £29,413,042	

Assumption for economic appraisal		No maintenance works undertaken. Risk that beach at southern end increases, with erosion from year 0.	
Benefits	No benefits are associated with the baseline case of Do Nothing		PV £0
Costs	No costs are associated with the baseline case of Do Nothing.		PV £0

Estimates for mental health benefits at Gunton Warren, which were added to the benefits above, are as follows:

- 11 residential properties lost in year 40, with an average of 2 adults per property
- 11 x 2 x £9,546 = £210,012
- Health discount factor for year 40 = 0.5630
- Total = £118,237

3.1.5.2 Corton

For the PV benefits estimate at Corton, the same data used in the Strategy was applied in this assessment, only adjusting residential properties with a 20% increase due to present-day market value.

Two PF estimates have been undertaken for Corton:

1) Considering losses due to baseline erosion rates of 1.7 m/year, as per the Strategy - Table 3-4 ;
2) Considering losses due to high erosion rate of 2.3 m/year, as per the Strategy - Table 3-5.

Table 3-4: Appraisal for damages and benefits under Do-nothing for the baseline erosion rate at Corton

Assumption for economic appraisal		No maintenance works to existing defence, risk that failure could occur from year 10.		
Damages	Residential properties	First properties at risk by year 20. Total number of residential properties at risk by year 100 = 35.	PV £1,183,554	Total damages PV £2,522,878
	Commercial properties	First commercial properties at risk by year 20.	PV £599,625	
	Agricultural land	None.	PV £0	
	Holiday Parks	Loss of holiday park land - cost of relocating caravan pitches included and more permanent structures included, where rateable or house price data available. Loss of associated infrastructure. Includes costs of business write-off due to erosion.	£739,699	
	Other	Loss of other infrastructure	PV £0	
Benefits	No benefits are associated with the baseline case of Do Nothing		PV £0	

Assumption for economic appraisal		No maintenance works to existing defence, risk that failure could occur from year 10.		
Costs	No costs are associated with the baseline case of Do Nothing.		PV £0	

Table 3-5: Appraisal for damages and benefits under Do-nothing for the high erosion rate at Corton

Assumption for economic appraisal		No maintenance works to existing defence, risk that failure could occur from year 5.		
Damages	Residential properties	First properties at risk by year 15. Total number of residential properties at risk by year 100 = 176.	PV £6,407,268	Total damages PV £8,031,355
	Commercial properties	First commercial properties at risk by year 15.	PV £398,802	
	Agricultural land	None.	PV £0	
	Holiday Parks	Loss of holiday park land - cost of relocating caravan pitches included and more permanent structures included, where rateable or house price data available. Loss of associated infrastructure. Includes costs of business write-off due to erosion.	£1,211,521	
	Other	Loss of other infrastructure (Shelters/ sub-station)	PV £13,764	
Benefits	No benefits are associated with the baseline case of Do Nothing		PV £0	
Costs	No costs are associated with the baseline case of Do Nothing.		PV £0	

Estimates for mental health benefits at Corton, which were added to the nemefits above, were also undertaken for both baseline (Table 3-6) and high erosion rates (Table 3-7).

Table 3-6: Mental health PV benefits under Do-nothing for baseline erosion rates at Corton

Year lost	No. properties lost	Health discount factor	Mental health PV benefits
20	3	0.7425	£42,527
30	3	0.6398	£36,645
40	2	0.5630	£21,498
50	4	0.4955	£37,840
60	4	0.4361	£33,304
70	4	0.3838	£29,310
80	5	0.3414	£32,590
90	4	0.3068	£23,430

Year lost	No. properties lost	Health discount factor	Mental health PV benefits
100	6	0.2758	£31,593
Total	**35**	**NA**	**£288,738**

Table 3-7: Mental health PV benefits under Do-nothing for high erosion rates at Corton

Year lost	No. properties lost	Health discount factor	Mental health benefits
15	3	0.7999	£45,815
20	7	0.7425	£99,231
30	14	0.6398	£171,011
40	12	0.5630	£128,986
50	22	0.4955	£208,122
60	27	0.4361	£224,803
70	12	0.3838	£87,930
80	24	0.3414	£156,432
90	28	0.3068	£164,008
100	27	0.2758	£142,170
Total	**176**	**NA**	**£1,428,507**

3.1.5.3 North Corton

For the PV benefits estimate at Corton, the same data used in the Strategy was applied in this assessment, only adjusting residential properties with a 20% increase due to present-day market value.

Two PF estimates have been undertaken for Corton:

1) Considering losses due to baseline erosion rates of 1.7 m/year, as per the Strategy - Table 3-8;

2) Considering losses due to high erosion rate of 2.3 m/year, as per the Strategy - Table 3-9.

Table 3-8: Appraisal for damages and benefits under Do-nothing for the baseline erosion rate at North Corton

Assumption for economic appraisal		**Ongoing failure of defence allowed to continue, with continued risk of erosion along frontage.**		
Damages	Residential properties	None.	PV £0	Total damages PV £30,216
	Commercial properties	None.	PV £0	
	Agricultural land	Loss of agricultural land – up to 10 acres	PV £22,151	
	Holiday Parks	Loss of holiday park land - cost of relocating caravan pitches included and more permanent structures included, where rateable or house price data available.	£8,064	

Assumption for economic appraisal		Ongoing failure of defence allowed to continue, with continued risk of erosion along frontage.		
		Loss of associated infrastructure. Includes costs of business write-off due to erosion.		
	Other	Loss of other infrastructure	PV £0	
Benefits	No benefits are associated with the baseline case of Do Nothing		PV £0	
Costs	No costs are associated with the baseline case of Do Nothing.		PV £0	

Table 3-9: Appraisal for damages and benefits under Do-nothing for the high erosion rate at North Corton

Assumption for economic appraisal		Ongoing failure of defence allowed to continue, with continued risk of erosion along frontage.		
Damages	Residential properties	None.	PV £0	Total damages PV £661,893
	Commercial properties	None.	PV £0	
	Agricultural land	Loss of agricultural land – up to 10 acres	PV £72,783	
	Holiday Parks	Loss of holiday park land - cost of relocating caravan pitches included and more permanent structures included, where rateable or house price data available. Loss of associated infrastructure. Includes costs of business write-off due to erosion.	£589,110	
	Other	Loss of other infrastructure	PV £0	
Benefits	No benefits are associated with the baseline case of Do Nothing		PV £0	
Costs	No costs are associated with the baseline case of Do Nothing.		PV £0	

Estimates for mental health benefits at North Corton were not undertaken as no residential properties are at risk over the 100 year assessment.

3.2 Appraisal of schemes costs

Table 3-10 details the costings, both with and without 60% Optimism Bias added, for the proposed option at each frontage. See Appendix C for details on cost review.

Table 3-10: Cost estimates for proposed options along each frontage

Location	Option	Assumption	Capital Cost (£)	With OB 60% (£)	PV cost (£)
Gunton Warren	Introduce beach management control structures	Includes a new terminal groyne between Gunton and Lowestoft North Beach boundary, and additional control structures along the frontage. Also includes capital and maintenance.	£4,854,850	£7,767,760	£7,487,911
Corton	See assumptions	Hold the line through building more substantial defence structures. Adjustments to rock bund to transition with North Corton. Introduce beach management control structures along Corton Woods frontage.	£18,411,331	£29,458,130	£27,893,356
North Corton	Remove defences and create hard points to provide intermediate controls on erosion	Shore Parallel breakwaters, including the removal of 50% of existing structures, remainder encased in rock. Also includes construction and maintenance	£3,927,980	£6,284,768	£6,155,707

Consideration has also been given to a combined scheme between Corton and North Corton. For this, a total PV cost of £34,008,524 was considered (with 60% Optimism Bias included).

It should be noted that these costs do not include for the costs of any works to the upper cliff to address those instability issues, as these would not form part of the GiA or PF calculation in any case.

3.3 Partnership Funding Calculator

The above information has then been used to determine the potential for FCERM GiA for various options. A high-level Benefit Cost Assessment has been completed and the Partnership Funding Calculations undertaken to highlight the additional funding that may need to be found from alternative sources to deliver the projects. The aim of this assessment is to establish an order of magnitude for funding levels; a more detailed review of benefits and costs would be required should it be decided to proceed with a formal application for FCERM GiA funding.

The PFC tables (Annex A) show the outcomes of the various PF estimates undertaken for all three frontages, which are summarised below.

Frontage	Maximum Potential Eligible GiA	Minimum PF to be sourced[1]
Gunton Warren only (Case 1)	£450,000	£7,050,000
Gunton Warren plus Links Road (Case 2)	£2,400,000	£5,100,000
Corton	£1,800,000	£26,000,000

North Corton Cliffs	£40,000	£6,120,000
Corton and North Corton combined	£1,800,000	£32,200,000

[1]Total cost minus the maximum potential eligible GiA

In general, although the PF Calculator show that there are benefits that would be eligible for FCERM GiA on each frontage, the calculator reports that the schemes do not qualify because the benefit-cost ratio (BCR) is less than unity. However, this does not accurately represent the circumstances here which are that these schemes will only be pursued if primarily funded by non-FCERM sources with only modest GiA anticipated, as the spreadsheet Calculator is not designed for, and does not appear to have facility to deal with, such situations.

4. References

CH2M (2017). Appendix F – Economic Assessment. Gorleston to Lowestoft Coastal Strategy. Report produced for Coastal Partnership East. Project Reference G2LCS/F/1.2, 68pp.

Multi-Coloured Manual (MCM) (2021). Handbook for Economic Appraisal 2021. Flood and Coastal Erosion Risk Management. 209p.

RPA (2020). Pakefield Erosion High Level Economic Assessment. Final report prepared for Coastal Partnership East. 42pp.

Annex A. Partnership Funding Calculator (PFC)

A.1 PFC for Gunton Warren Case 1

Project teams are required to provide a copy of the PF Calculator within their business case for approval of FCERM GiA.

Flood and Coastal Erosion Risk Management (FCERM)

Partnership Funding (PF) calculator 2020 for Flood and Coastal Erosion Risk Management Grant-in-Aid (FCERM GiA)

Version 1: March 2020 (for use by projects delivering FCERM outcomes after 1 April 2021)

Key: input | selection | calculated cells

SECTION 1: Project details

Project Name	Gunton and Corton Options Appraisal	Project stage			Benefit:Cost ratio
National Project number	82413600	Option reference	Gunton Warren Case 1	Project benefit to cost ratio:	0.8 to 1
Date of PF Calculator	29 October 2021			Effective return to taxpayer:	n/a to 1
Lead RMA	Coastal Partnership East			Effective return on contributions:	n/a to 1
FCERM GiA applicant type					

All values in £ (pound Sterling)

Figures in blue to be included in the national FCERM capital programme for the chosen option

FCERM GiA eligibility is removed as costs exceed benefits

SECTION 2: Prospect of eligibility for FCERM GiA

Confirmed strategic approach?			
Raw PF Score	n/a	Adjusted PF Score	n/a
Minimum pv contribution/saving required	n/a	pv FCERM GiA up-front costs	n/a
pv maximum eligible FCERM GiA	low BCR	pv FCERM GiA future costs	n/a

SECTION 3: Costs and contributions for the PREFERRED OPTION (over the duration of benefits period)

Project costs	Towards qualifying outcomes	Contributions secured to date	towards pv appraisal costs	towards pv qualifying outcomes up-front	towards pv qualifying outcomes future	Contributor(s) or Fund(s)
pv appraisal costs	£ -	pv Local Levy				
pv design and construction costs	£ 7,204,560	pv other public sector				
pv risk contingency	£ -	pv private and voluntary sector				
pv costs for approval	£ 7,204,560	pv other Environment Agency				
pv future costs	£ 283,351	pv sub-total	£ -	£ -	£ -	
pv WLC (over duration of benefits)	£ 7,487,911	pv total contributions	£ -			

Contributions to future costs are not included in GiA calculation. Other RMAs are encouraged to secure contributions towards future costs, separately

SECTION 4: Outcome Measure 1 - economic benefits arising from FCERM

pv WLB (appraisal period)	£ 6,298,678	Economic summary sheet completed	
Duration of benefits (DoB) period	100	Economic data included in business case?	
pv WLB (DoB = OM1A)	£ 6,298,678		
People related impacts - due to measures proposed (DoB = OM1B)	£ 118,237		

SECTION 5A: Outcome Measure 2A (today) - households at risk today that are better protected against flood risk by this project (over the duration of benefits period)

N° households in deprived areas	at risk today					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	£ -
21% to 40% most deprived						0	0	0	0	0	£ -
60% least deprived						0	0	0	0	0	£ -

N° households in deprived areas	at risk after duration of benefits					Annual damages avoided (£) compared with a household at low risk				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived						0	59	294	1000	1589
21% to 40% most deprived										
60% least deprived										

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 5B: Outcome Measure 2B (2040) - households at risk in 2040 that are better protected against flood risk by this project (over the remaining duration of benefits period)

Year when measures are ready for service - Gateway 4:

OM2 (2040) FCERM GiA eligibility is not applicable

N° households in deprived areas	at risk from 2040					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	Ltd by DoB
21% to 40% most deprived						0	0	0	0	0	Ltd by DoB
60% least deprived						0	0	0	0	0	Ltd by DoB

N° households in deprived areas	at risk after duration of benefits					Annual damages avoided (£) compared with a household at low risk				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived						0	59	294	1000	1589
21% to 40% most deprived										
60% least deprived										

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 6: Outcome Measure 3 - households better protected against coastal erosion

N° households in deprived areas	at risk today		Damages per household avoided:				pv qual. benefits
	long-term loss	medium-term loss		Long-term loss	Medium-term loss		
20% most deprived			Annual damages avoided	£ 6,800	£ 6,800		£ -
21% to 40% most deprived			Loss expected in	50	20	years	£ -
60% least deprived	11		Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)	£ 1,341	£ 3,417		£ 440,641

SECTION 7: Outcome Measure 4 - environmental improvements

Type of habitat (OM4A)	'before' condition (Ha)			'after' condition at end of DoB (Ha)			pv qual. benefits
	Poor	Moderate	Good	Poor	Moderate	Good	
Intertidal habitat							£ -
Woodland							£ -
Wet woodland							£ -
Wetlands/wet grassland							£ -
Grassland							£ -
Heathland							£ -
Ponds/lakes							£ -
Arable land							£ -

Length of river habitat enhanced (OM4B)

	kilometre(s)	pv qual. benefits
Comprehensive restoration		£ -
Partial restoration		£ -
A single, major physical improvement		£ -

SECTION 8: Qualifying benefits and eligible FCERM GiA arising from project

OM	deprivation	Qualifying benefits	%age benefits	Payment rate	Eligible FCERM GiA	%age
OM1a	overall	£ 5,739,800	91.1%	6	£ 344,388	75.5%
OM1b	people related	£ 118,237	1.9%	20	£ 23,647	5.2%
OM2	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ -	0.0%	20	£ -	0.0%
OM3	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ 440,641	7.0%	20	£ 88,128	19.3%
OM4	habitat	£ -	0.0%	20	£ -	0.0%
	rivers	£ -	0.0%	20	£ -	0.0%
Total		£ 6,298,678	pv max. eligible GiA		£ 456,164	

Example sensitivity analyses

Test	Raw score	Contributions required	%age of whole life costs
PF Calculator (above)	n/a	n/a	n/a
SA1: pv WLC - Affordability	n/a	n/a	n/a
SA2: OM2 - Flood risks lower than assumptions made	N/A	No OM2 contribution	n/a
SA3: OM3 - Erosion risks lower than assumptions made	n/a	n/a	#VALUE!
SA4: Duration of benefits - Option choice is conservative	n/a	n/a	n/a
SA5: Duration of benefits - Option choice is optimistic	n/a	n/a	n/a
SA6: Strategic considerations not demonstrated	n/a	n/a	n/a
SA7: Change in environmental habitat is optimistic	N/A	No OM4 contribution	n/a

A.2 PFC for Gunton Warren Case 2

Project teams are required to provide a copy of the PF Calculator within their business case for approval of FCERM GiA.

Flood and Coastal Erosion Risk Management (FCERM)

Partnership Funding (PF) calculator 2020 for Flood and Coastal Erosion Risk Management Grant-in-Aid (FCERM GiA)

Version 1: March 2020 (for use by projects delivering FCERM outcomes after 1 April 2021)

Key: input | selection | calculated cells

SECTION 1: Project details

Project Name	Gunton and Corton Options Appraisal	Project stage			Benefit:Cost ratio
National Project number	B2413600	Option reference	Gunton Warren Case 2	Project benefit to cost ratio:	5.2 to 1
Date of PF Calculator	29 October 2021			Effective return to taxpayer:	n/a to 1
Lead RMA	Coastal Partnership East			Effective return on contributions:	n/a to 1
FCERM GiA applicant type					

All values in £ (pound Sterling)

Figures in blue to be included in the national FCERM capital programme for the chosen option

SECTION 2: Prospect of eligibility for FCERM GiA

Confirmed strategic approach?		See guidance. Evidence provided in the business case		
Raw PF Score	15%	Adjusted PF Score	15%	Insufficient contributions to secure FCERM GiA
Minimum pv contribution/saving required	£ 6,150,872	pv FCERM GiA up-front costs	£ -	
pv maximum eligible FCERM GiA	£ 2,433,622	pv FCERM GiA future costs	£ -	Other RMAs not eligible for FCERM GiA towards future costs

SECTION 3: Costs and contributions for the PREFERRED OPTION (over the duration of benefits period)

Project costs	Towards qualifying outcomes	Contributions secured to date	towards pv appraisal costs	towards pv qualifying outcomes up-front	towards pv qualifying outcomes future	Contributor(s) or Fund(s)
pv appraisal costs	£ -	pv Local Levy				
pv design and construction costs	£ 7,204,560	pv other public sector				
pv risk contingency	£ -	pv private and voluntary sector				
pv costs for approval	£ 7,204,560	pv other Environment Agency				
pv future costs	£ 283,351	pv sub-total	£ -	£ -	£ -	
pv WLC (over duration of benefits)	£ 7,487,911	pv total contributions	£ -	Contributions to future costs are not included in GiA calculation. Other RMAs are encouraged to secure contributions towards future costs, separately		

SECTION 4: Outcome Measure 1 - economic benefits arising from FCERM

pv WLB (appraisal period)	£ 39,256,314	Economic summary sheet completed	
Duration of benefits (DoB) period	100	Economic data included in business case?	
pv WLB (DoB = OM1A)	£ 39,256,314		
People related impacts - due to measures proposed (DoB = OM1B)	£ 118,237		

SECTION 5A: Outcome Measure 2A (today) - households at risk today that are better protected against flood risk by this project (over the duration of benefits period)

N° households in deprived areas	at risk today					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	£ -
21% to 40% most deprived						0	0	0	0	0	£ -
60% least deprived						0	0	0	0	0	£ -

N° households in deprived areas	at risk after duration of benefits					Annual damages avoided (£) compared with a household at low risk				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived						0	59	294	1000	1589
21% to 40% most deprived										
60% least deprived										

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 5B: Outcome Measure 2B (2040) - households at risk in 2040 that are better protected against flood risk by this project (over the remaining duration of benefits period)

Year when measures are ready for service - Gateway 4: OM2 (2040) FCERM GiA eligibility is not applicable

N° households in deprived areas	at risk from 2040					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	Ltd by DoB
21% to 40% most deprived						0	0	0	0	0	Ltd by DoB
60% least deprived						0	0	0	0	0	Ltd by DoB

N° households in deprived areas	at risk after duration of benefits					Annual damages avoided (£) compared with a household at low risk				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived						0	59	294	1000	1589
21% to 40% most deprived										
60% least deprived										

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 6: Outcome Measure 3 - households better protected against coastal erosion

N° households in deprived areas	at risk today		Damages per household avoided:			pv qual. benefits
	long-term loss	medium-term loss		long-term loss	medium-term loss	
20% most deprived			Annual damages avoided	£ 6,800	£ 6,800	£ -
21% to 40% most deprived			Loss expected in	50	20 years	£ -
60% least deprived	11		Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)	£ 1,341	£ 3,417	£ 440,641

SECTION 7: Outcome Measure 4 - environmental improvements

Type of habitat (OM4A)	'before' condition (Ha)			'after' condition at end of DoB (Ha)			pv qual. benefits
	Poor	Moderate	Good	Poor	Moderate	Good	
Intertidal habitat							£ -
Woodland							£ -
Wet woodland							£ -
Wetlands/wet grassland							£ -
Grassland							£ -
Heathland							£ -
Ponds/lakes							£ -
Arable land							£ -

Length of river habitat enhanced (OM4B)	kilometre(s)	pv qual. benefits
Comprehensive restoration		£ -
Partial restoration		£ -
A single, major physical improvement		£ -

SECTION 8: Qualifying benefits and eligible FCERM GiA arising from project

OM	deprivation	Qualifying benefits	%age benefits	Payment rate	Eligible FCERM GiA	%age
OM1a	overall	£ 38,697,436	98.6%	6	£ 2,321,846	95.4%
OM1b	people related	£ 118,237	0.3%	20	£ 23,647	1.0%
OM2	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ -	0.0%	20	£ -	0.0%
OM3	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ 440,641	1.1%	20	£ 88,128	3.6%
OM4	habitat	£ -	0.0%	20	£ -	0.0%
	rivers	£ -	0.0%	20	£ -	0.0%
Total		£ 39,256,314	pv max. eligible GiA		£ 2,433,622	

Example sensitivity analyses

Test	Raw score	Contributions required	%age of whole life costs
PF Calculator (above)	15%	£ 6,150,872	85%
SA1: pv WLC - Affordability	12%	£ 7,952,011	85%
SA2: OM2 - Flood risks lower than assumptions made	N/A	No OM2 contribution	n/a
SA3: OM3 - Erosion risks lower than assumptions made	15%	£ 6,150,871	82%
SA4: Duration of benefits - Option choice is conservative	15%	£ 6,150,871	82%
SA5: Duration of benefits - Option choice is optimistic	15%	£ 6,152,424	82%
SA6: Strategic considerations not demonstrated	15%	£ 6,150,871	82%
SA7: Change in environmental habitat is optimistic	N/A	No OM4 contribution	n/a

Ref:

A.3 PFC for Corton baseline erosion

Project teams are required to provide a copy of the PF Calculator within their business case for approval of FCERM GiA.

Flood and Coastal Erosion Risk Management (FCERM)

Partnership Funding (PF) calculator 2020 for Flood and Coastal Erosion Risk Management Grant-in-Aid (FCERM GiA)

Version 1: March 2020 (for use by projects delivering FCERM outcomes after 1 April 2021)

Key: input | selection | calculated cells

SECTION 1: Project details

Project Name	Gunton and Corton Options Appraisal	Project stage			Benefit:Cost ratio
National Project number	B2413600	Option reference	Corton baseline erosion	Project benefit to cost ratio:	0.1 to 1
Date of PF Calculator	29 October 2021			Effective return to taxpayer:	n/a to 1
Lead RMA	Coastal Partnership East			Effective return on contributions:	n/a to 1
FCERM GiA applicant type					

All values in £ (pound Sterling)

Figures in blue to be included in the national FCERM capital programme for the chosen option

FCERM GiA eligibility is removed as costs exceed benefits

SECTION 2: Prospect of eligibility for FCERM GiA

Confirmed strategic approach?			
Raw PF Score	n/a	Adjusted PF Score	n/a
Minimum pv contribution/saving required	n/a	pv FCERM GiA up-front costs	n/a
pv maximum eligible FCERM GiA	low BCR	pv FCERM GiA future costs	n/a

SECTION 3: Costs and contributions for the PREFERRED OPTION (over the duration of benefits period)

Project costs	Towards qualifying outcomes	Contributions secured to date	towards pv appraisal costs	towards pv qualifying outcomes up-front	towards pv qualifying outcomes future	Contributor(s) or Fund(s)
pv appraisal costs		pv Local Levy				
pv design and construction costs	£ 27,390,390	pv other public sector				
pv risk contingency		pv private and voluntary sector				
pv costs for approval	£ 27,390,390	pv other Environment Agency				
pv future costs	£ 502,426	**pv sub-total**	£ -	£ -	£ -	
pv WLC (over duration of benefits)	£ 27,892,816	pv total contributions	£ -			

Contributions to future costs are not included in GiA calculation. Other RMAs are encouraged to secure contributions towards future costs, separately

SECTION 4: Outcome Measure 1 - economic benefits arising from FCERM

pv WLB (appraisal period)	£ 2,522,878	Economic summary sheet completed	
Duration of benefits (DoB) period	100	Economic data included in business case?	
pv WLB (DoB = OM1A)	£ 2,522,878		
People related impacts - due to measures proposed (DoB = OM1B)	£ 288,738		

SECTION 5A: Outcome Measure 2A (today) - households at risk today that are better protected against flood risk by this project (over the duration of benefits period)

N° households in deprived areas	at risk today					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	£ -
21% to 40% most deprived						0	0	0	0	0	£ -
60% least deprived						0	0	0	0	0	£ -

N° households in deprived areas	at risk after duration of benefits					Annual damages avoided (£) compared with a household at low risk				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived						0	59	294	1000	1589
21% to 40% most deprived										
60% least deprived										

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 5B: Outcome Measure 2B (2040) - households at risk in 2040 that are better protected against flood risk by this project (over the remaining duration of benefits period)

Year when measures are ready for service - Gateway 4:

OM2 (2040) FCERM GiA eligibility is not applicable

N° households in deprived areas	at risk from 2040					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	Ltd by DoB
21% to 40% most deprived						0	0	0	0	0	Ltd by DoB
60% least deprived						0	0	0	0	0	Ltd by DoB

N° households in deprived areas	at risk after duration of benefits					Annual damages avoided (£) compared with a household at low risk				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived						0	59	294	1000	1589
21% to 40% most deprived										
60% least deprived										

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 6: Outcome Measure 3 - households better protected against coastal erosion

N° households in deprived areas	at risk today		Damages per household avoided:			pv qual. benefits
	long-term loss	medium-term loss		Long-term loss	Medium-term loss	
20% most deprived			Annual damages avoided	£ 6,800	£ 6,800	£ -
21% to 40% most deprived			Loss expected in	50	20 years	£ -
60% least deprived	32	3	Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)	£ 1,341	£ 3,417	£ 1,588,035

SECTION 7: Outcome Measure 4 - environmental improvements

Type of habitat (OM4A)	'before' condition (Ha)			'after' condition at end of DoB (Ha)			pv qual. benefits
	Poor	Moderate	Good	Poor	Moderate	Good	
Intertidal habitat							£ -
Woodland							£ -
Wet woodland							£ -
Wetlands/wet grassland							£ -
Grassland							£ -
Heathland							£ -
Ponds/lakes							£ -
Arable land							£ -

Length of river habitat enhanced (OM4B)	kilometre(s)	pv qual. benefits
Comprehensive restoration		£ -
Partial restoration		£ -
A single, major physical improvement		£ -

SECTION 8: Qualifying benefits and eligible FCERM GiA arising from project

OM	deprivation	Qualifying benefits	%age benefits	Payment rate	Eligible FCERM GiA	%age
OM1a	overall	£ 646,104	25.6%	6	£ 38,766	9.4%
OM1b	people related	£ 288,738	11.4%	20	£ 57,748	13.9%
OM2	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ -	0.0%	20	£ -	0.0%
OM3	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ 1,588,035	62.9%	20	£ 317,607	76.7%
OM4	habitat	£ -	0.0%	20	£ -	0.0%
	rivers	£ -	0.0%	20	£ -	0.0%
Total		£ 2,522,878		**pv max. eligible GiA**	£ 414,121	

Example sensitivity analyses

Test	Raw score	Contributions required	%age of whole life costs
PF Calculator (above)	n/a	n/a	n/a
SA1: pv WLC - Affordability	n/a	n/a	n/a
SA2: OM2 - Flood risks lower than assumptions made	N/A	No OM2 contribution	n/a
SA3: OM3 - Erosion risks lower than assumptions made	n/a	n/a	#VALUE!
SA4: Duration of benefits - Option choice is conservative	n/a	n/a	n/a
SA5: Duration of benefits - Option choice is optimistic	n/a	n/a	n/a
SA6: Strategic considerations not demonstrated	n/a	n/a	n/a
SA7: Change in environmental habitat is optimistic	N/A	No OM4 contribution	n/a

Ref:

A.4 PFC for Corton high erosion

Project teams are required to provide a copy of the PF Calculator within their business case for approval of FCERM GiA.

Flood and Coastal Erosion Risk Management (FCERM)

Partnership Funding (PF) calculator 2020 for Flood and Coastal Erosion Risk Management Grant-in-Aid (FCERM GiA)

Version 1: March 2020 (for use by projects delivering FCERM outcomes after 1 April 2021)

Key: input | selection | calculated cells

SECTION 1: Project details

Project Name	Gunton and Corton Options Appraisal	Project stage		Project benefit to cost ratio:	0.3 to 1
National Project number	B2413600	Option reference	Corton high erosion	Effective return to taxpayer:	n/a to 1
Date of PF Calculator	29 October 2021			Effective return on contributions:	n/a to 1
Lead RMA	Coastal Partnership East				
FCERM GiA applicant type					

All values in £ (pound Sterling)

Figures in blue to be included in the national FCERM capital programme for the chosen option

FCERM GiA eligibility is removed as costs exceed benefits

SECTION 2: Prospect of eligibility for FCERM GiA

Confirmed strategic approach?			
Raw PF Score	n/a	Adjusted PF Score	n/a
Minimum pv contribution/saving required	n/a	pv FCERM GiA up-front costs	n/a
pv maximum eligible FCERM GiA	low BCR	pv FCERM GiA future costs	n/a

SECTION 3: Costs and contributions for the PREFERRED OPTION (over the duration of benefits period)

Project costs	Towards qualifying outcomes	Contributions secured to date	towards pv appraisal costs	towards pv qualifying outcomes up-front	towards pv qualifying outcomes future	Contributor(s) or Fund(s)
pv appraisal costs		pv Local Levy				
pv design and construction costs	£ 27,390,390	pv other public sector				
pv risk contingency		pv private and voluntary sector				
pv costs for approval	£ 27,390,390	pv other Environment Agency				
pv future costs	£ 502,426	pv sub-total	£ -	£ -	£ -	
pv WLC (over duration of benefits)	£ 27,892,816	pv total contributions	£ -			

Contributions to future costs are not included in GiA calculation. Other RMAs are encouraged to secure contributions towards future costs, separately

SECTION 4: Outcome Measure 1 - economic benefits arising from FCERM

pv WLB (appraisal period)	£ 8,031,355	Economic summary sheet completed	
Duration of benefits (DoB) period	100	Economic data included in business case?	
pv WLB (DoB = OM1A)	£ 8,031,355		
People related impacts - due to measures proposed (DoB = OM1B)	£ 1,428,507		

SECTION 5A: Outcome Measure 2A (today) - households at risk today that are better protected against flood risk by this project (over the duration of benefits period)

N° households in deprived areas	at risk today					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	£ -
21% to 40% most deprived						0	0	0	0	0	£ -
60% least deprived						0	0	0	0	0	£ -

N° households in deprived areas	at risk after duration of benefits				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived					
21% to 40% most deprived					
60% least deprived					

Annual damages avoided (£) compared with a household at low risk

low risk	moderate risk	intermediate risk	significant risk	very significant risk
0	59	294	1000	1589

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 5B: Outcome Measure 2B (2040) - households at risk in 2040 that are better protected against flood risk by this project (over the remaining duration of benefits period)

Year when measures are ready for service - Gateway 4

OM2 (2040) FCERM GiA eligibility is not applicable

N° households in deprived areas	at risk from 2040					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	Ltd by DoB
21% to 40% most deprived						0	0	0	0	0	Ltd by DoB
60% least deprived						0	0	0	0	0	Ltd by DoB

N° households in deprived areas	at risk after duration of benefits				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived					
21% to 40% most deprived					
60% least deprived					

Annual damages avoided (£) compared with a household at low risk

low risk	moderate risk	intermediate risk	significant risk	very significant risk
0	59	294	1000	1589

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 6: Outcome Measure 3 - households better protected against coastal erosion

N° households in deprived areas	at risk today		Damages per household avoided:			pv qual. benefits
	long-term loss	medium-term loss		Long-term loss	Medium-term loss	
20% most deprived			Annual damages avoided	£ 6,800	£ 6,800	£ -
21% to 40% most deprived			Loss expected in	50	20 years	£ -
60% least deprived	166	10	Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)	£ 1,341	£ 3,417	£ 7,670,245

SECTION 7: Outcome Measure 4 - environmental improvements

Type of habitat (OM4A)	'before' condition (Ha) Poor	Moderate	Good	'after' condition at end of DoB (Ha) Poor	Moderate	Good	pv qual. benefits
Intertidal habitat							£ -
Woodland							£ -
Wet woodland							£ -
Wetlands/wet grassland							£ -
Grassland							£ -
Heathland							£ -
Ponds/lakes							£ -
Arable land							£ -

Length of river habitat enhanced (OM4B)	kilometre(s)	pv qual. benefits
Comprehensive restoration		£ -
Partial restoration		£ -
A single, major physical improvement		£ -

SECTION 8: Qualifying benefits and eligible FCERM GiA arising from project

OM	deprivation	Qualifying benefits	%age benefits	Payment rate	Eligible FCERM GiA	%age
OM1a	overall	Ltd by high OM1b,2,3,4 values	0.0%	6	£ -	0.0%
OM1b	people related	£ 1,428,507	15.7%	20	£ 285,701	15.7%
OM2	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ -	0.0%	20	£ -	0.0%
OM3	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ 7,670,245	84.3%	20	£ 1,534,049	84.3%
OM4	habitat	£ -	0.0%	20	£ -	0.0%
	rivers	£ -	0.0%	20	£ -	0.0%
Total		£ 9,098,752	pv max. eligible GiA		£ 1,819,750	

Ref:

Example sensitivity analyses

Test	Raw score	Contributions required	%age of whole life costs
PF Calculator (above)	n/a	n/a	n/a
SA1: pv WLC - Affordability	n/a	n/a	n/a
SA2: OM2 - Flood risks lower than assumptions made	N/A	No OM2 contribution	n/a
SA3: OM3 - Erosion risks lower than assumptions made	n/a	n/a	#VALUE!
SA4: Duration of benefits - Option choice is conservative	n/a	n/a	n/a
SA5: Duration of benefits - Option choice is optimistic	n/a	n/a	n/a
SA6: Strategic considerations not demonstrated	n/a	n/a	n/a
SA7: Change in environmental habitat is optimistic	N/A	No OM4 contribution	n/a

A.5 PFC for North Corton baseline erosion

Project teams are required to provide a copy of the PF Calculator within their business case for approval of FCERM GiA.

Flood and Coastal Erosion Risk Management (FCERM)

Partnership Funding (PF) calculator 2020 for Flood and Coastal Erosion Risk Management Grant-in-Aid (FCERM GiA)

Version 1: March 2020 (for use by projects delivering FCERM outcomes after 1 April 2021)

Key: input | selection | calculated cells

SECTION 1: Project details

Project Name	Gunton and Corton Options Appraisal	Project stage	
National Project number	B2413600	Option reference	North Corton baseline erosion
Date of PF Calculator	29 October 2021		
Lead RMA	Coastal Partnership East		
FCERM GiA applicant type			

All values in £ (pound Sterling)

Figures in blue to be included in the national FCERM capital programme for the chosen option

Benefit:Cost ratio	
Project benefit to cost ratio:	0.0 to 1
Effective return to taxpayer:	n/a to 1
Effective return on contributions:	n/a to 1

FCERM GiA eligibility is removed as costs exceed benefits

SECTION 2: Prospect of eligibility for FCERM GiA

Confirmed strategic approach?			
Raw PF Score	n/a	Adjusted PF Score	n/a
Minimum pv contribution/saving required	n/a	pv FCERM GiA up-front costs	n/a
pv maximum eligible FCERM GiA	low BCR	pv FCERM GiA future costs	n/a

SECTION 3: Costs and contributions for the PREFERRED OPTION (over the duration of benefits period)

Project costs	Towards qualifying outcomes	Contributions secured to date	towards pv appraisal costs	towards pv qualifying outcomes up-front	towards pv qualifying outcomes future	Contributor(s) or Fund(s)
pv appraisal costs	£ 100,000	pv Local Levy				
pv design and construction costs	£ 5,015,168	pv other public sector				
pv risk contingency	£ 1,000,000	pv private and voluntary sector				
pv costs for approval	£ 6,115,168	pv other Environment Agency				
pv future costs	£ 40,539	pv sub-total	£ -	£ -	£ -	
pv WLC (over duration of benefits)	£ 6,155,707	pv total contributions	£ -	Contributions to future costs are not included in GiA calculation. Other RMAs are encouraged to secure contributions towards future costs, separately		

SECTION 4: Outcome Measure 1 - economic benefits arising from FCERM

pv WLB (appraisal period)	£ 30,215	Economic summary sheet completed	
Duration of benefits (DoB) period	100	Economic data included in business case?	
pv WLB (DoB = OM1A)	£ 30,215		
People related impacts - due to measures proposed (DoB = OM1B)	£ -		

SECTION 5A: Outcome Measure 2A (today) - households at risk today that are better protected against flood risk by this project (over the duration of benefits period)

N° households in deprived areas	at risk today					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	£ -
21% to 40% most deprived						0	0	0	0	0	£ -
60% least deprived						0	0	0	0	0	£ -

N° households in deprived areas	at risk after duration of benefits				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived					
21% to 40% most deprived					
60% least deprived					

Annual damages avoided (£) compared with a household at low risk

low risk	moderate risk	intermediate risk	significant risk	very significant risk
0	59	294	1000	1589

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 5B: Outcome Measure 2B (2040) - households at risk in 2040 that are better protected against flood risk by this project (over the remaining duration of benefits period)

Year when measures are ready for service - Gateway 4: OM2 (2040) FCERM GiA eligibility is not applicable

N° households in deprived areas	at risk from 2040					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	Ltd by DoB
21% to 40% most deprived						0	0	0	0	0	Ltd by DoB
60% least deprived						0	0	0	0	0	Ltd by DoB

N° households in deprived areas	at risk after duration of benefits				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived					
21% to 40% most deprived					
60% least deprived					

Annual damages avoided (£) compared with a household at low risk

low risk	moderate risk	intermediate risk	significant risk	very significant risk
0	59	294	1000	1589

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 6: Outcome Measure 3 - households better protected against coastal erosion

N° households in deprived areas	at risk today		Damages per household avoided:				pv qual. benefits
	long-term loss	medium-term loss		Long-term loss	Medium-term loss		
20% most deprived			Annual damages avoided	£ 6,800	£ 6,800		£ -
21% to 40% most deprived			Loss expected in	50	20	years	£ -
60% least deprived			Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)	£ 1,341	£ 3,417		£ -

SECTION 7: Outcome Measure 4 - environmental improvements

Type of habitat (OM4A)	'before' condition (Ha) Poor	Moderate	Good	'after' condition at end of DoB (Ha) Poor	Moderate	Good	pv qual. benefits
Intertidal habitat							£ -
Woodland							£ -
Wet woodland							£ -
Wetlands/wet grassland							£ -
Grassland							£ -
Heathland							£ -
Ponds/lakes							£ -
Arable land							£ -

Length of river habitat enhanced (OM4B)	kilometre(s)	pv qual. benefits
Comprehensive restoration		£ -
Partial restoration		£ -
A single, major physical improvement		£ -

SECTION 8: Qualifying benefits and eligible FCERM GiA arising from project

OM	deprivation	Qualifying benefits	%age benefits	Payment rate	Eligible FCERM GiA	%age
OM1a	overall	£ 30,215	100.0%	6	£ 1,813	100.0%
OM1b	people related	£ -	0.0%	20	£ -	0.0%
OM2	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ -	0.0%	20	£ -	0.0%
OM3	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ -	0.0%	20	£ -	0.0%
OM4	habitat	£ -	0.0%	20	£ -	0.0%
	rivers	£ -	0.0%	20	£ -	0.0%
Total		£ 30,215	pv max. eligible GiA		£ 1,813	

Ref:

Example sensitivity analyses

Test	Raw score	Contributions required	%age of whole life costs
PF Calculator (above)	n/a	n/a	n/a
SA1: pv WLC - Affordability	n/a	n/a	n/a
SA2: OM2 - Flood risks lower than assumptions made	N/A	No OM2 contribution	n/a
SA3: OM3 - Erosion risks lower than assumptions made	N/A	No OM3 contribution	n/a
SA4: Duration of benefits - Option choice is conservative	n/a	n/a	n/a
SA5: Duration of benefits - Option choice is optimistic	n/a	n/a	n/a
SA6: Strategic considerations not demonstrated	n/a	n/a	n/a
SA7: Change in environmental habitat is optimistic	N/A	No OM4 contribution	n/a

A.6 PFC for North Corton high erosion

Project teams are required to provide a copy of the PF Calculator within their business case for approval of FCERM GiA.

Flood and Coastal Erosion Risk Management (FCERM)

Partnership Funding (PF) calculator 2020 for Flood and Coastal Erosion Risk Management Grant-in-Aid (FCERM GiA)

Version 1: March 2020 (for use by projects delivering FCERM outcomes after 1 April 2021)

Key: input | selection | calculated cells

SECTION 1: Project details

Project Name	Gunton and Corton Options Appraisal	Project stage			Benefit:Cost ratio
National Project number	B2413600	Option reference	North Corton high erosion	Project benefit to cost ratio:	0.1 to 1
Date of PF Calculator	29 October 2021			Effective return to taxpayer:	n/a to 1
Lead RMA	Coastal Partnership East			Effective return on contributions:	n/a to 1
FCERM GiA applicant type					

All values in £ (pound Sterling)

Figures in blue to be included in the national FCERM capital programme for the chosen option

FCERM GiA eligibility is removed as costs exceed benefits

SECTION 2: Prospect of eligibility for FCERM GiA

Confirmed strategic approach?			
Raw PF Score	n/a	Adjusted PF Score	n/a
Minimum pv contribution/saving required	n/a	pv FCERM GiA up-front costs	n/a
pv maximum eligible FCERM GiA	low BCR	pv FCERM GiA future costs	n/a

SECTION 3: Costs and contributions for the PREFERRED OPTION (over the duration of benefits period)

Project costs	Towards qualifying outcomes	Contributions secured to date	towards pv appraisal costs	towards pv qualifying outcomes up-front	towards pv qualifying outcomes future	Contributor(s) or Fund(s)
pv appraisal costs	£ 100,000	pv Local Levy				
pv design and construction costs	£ 5,015,168	pv other public sector				
pv risk contingency	£ 1,000,000	pv private and voluntary sector				
pv costs for approval	£ 6,115,168	pv other Environment Agency				
pv future costs	£ 40,539	**pv sub-total**	£ -	£ -	£ -	
pv WLC (over duration of benefits)	£ 6,155,707	pv total contributions	£ -			

Contributions to future costs are not included in GiA calculation. Other RMAs are encouraged to secure contributions towards future costs, separately

SECTION 4: Outcome Measure 1 - economic benefits arising from FCERM

pv WLB (appraisal period)	£ 661,893	Economic summary sheet completed	
Duration of benefits (DoB) period	100	Economic data included in business case?	
pv WLB (DoB = OM1A)	£ 661,893		
People related impacts - due to measures proposed (DoB = OM1B)	£ -		

SECTION 5A: Outcome Measure 2A (today) - households at risk today that are better protected against flood risk by this project (over the duration of benefits period)

N° households in deprived areas	at risk today					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	£ -
21% to 40% most deprived						0	0	0	0	0	£ -
60% least deprived						0	0	0	0	0	£ -

N° households in deprived areas	at risk after duration of benefits				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived					
21% to 40% most deprived					
60% least deprived					

Annual damages avoided (£) compared with a household at low risk

low risk	moderate risk	intermediate risk	significant risk	very significant risk
0	59	294	1000	1589

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 5B: Outcome Measure 2B (2040) - households at risk in 2040 that are better protected against flood risk by this project (over the remaining duration of benefits period)

Year when measures are ready for service - Gateway 4:

OM2 (2040) FCERM GiA eligibility is not applicable

N° households in deprived areas	at risk from 2040					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	Ltd by DoB
21% to 40% most deprived						0	0	0	0	0	Ltd by DoB
60% least deprived						0	0	0	0	0	Ltd by DoB

N° households in deprived areas	at risk after duration of benefits				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived					
21% to 40% most deprived					
60% least deprived					

Annual damages avoided (£) compared with a household at low risk

low risk	moderate risk	intermediate risk	significant risk	very significant risk
0	59	294	1000	1589

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 6: Outcome Measure 3 - households better protected against coastal erosion

N° households in deprived areas	at risk today		Damages per household avoided:			pv qual. benefits
	long-term loss	medium-term loss		Long-term loss	Medium-term loss	
20% most deprived			Annual damages avoided	£ 6,800	£ 6,800	£ -
21% to 40% most deprived			Loss expected in	50	20 years	£ -
60% least deprived			Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)	£ 1,341	£ 3,417	£ -

SECTION 7: Outcome Measure 4 - environmental improvements

Type of habitat (OM4A)	'before' condition (Ha)			'after' condition at end of DoB (Ha)			pv qual. benefits
	Poor	Moderate	Good	Poor	Moderate	Good	
Intertidal habitat							£ -
Woodland							£ -
Wet woodland							£ -
Wetlands/wet grassland							£ -
Grassland							£ -
Heathland							£ -
Ponds/lakes							£ -
Arable land							£ -

Length of river habitat enhanced (OM4B)	kilometre(s)	pv qual. benefits
Comprehensive restoration		£ -
Partial restoration		£ -
A single, major physical improvement		£ -

SECTION 8: Qualifying benefits and eligible FCERM GiA arising from project

OM	deprivation	Qualifying benefits	%age benefits	Payment rate	Eligible FCERM GiA	%age
OM1a	overall	£ 661,893	100.0%	6	£ 39,714	100.0%
OM1b	people related	£ -	0.0%	20	£ -	0.0%
OM2	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ -	0.0%	20	£ -	0.0%
OM3	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ -	0.0%	20	£ -	0.0%
OM4	habitat	£ -	0.0%	20	£ -	0.0%
	rivers	£ -	0.0%	20	£ -	0.0%
Total		£ 661,893	pv max. eligible GiA		£ 39,714	

Example sensitivity analyses

Test	Raw score	Contributions required	%age of whole life costs
PF Calculator (above)	n/a	n/a	n/a
SA1: pv WLC - Affordability	n/a	n/a	n/a
SA2: OM2 - Flood risks lower than assumptions made	N/A	No OM2 contribution	n/a
SA3: OM3 - Erosion risks lower than assumptions made	N/A	No OM3 contribution	n/a
SA4: Duration of benefits - Option choice is conservative	n/a	n/a	n/a
SA5: Duration of benefits - Option choice is optimistic	n/a	n/a	n/a
SA6: Strategic considerations not demonstrated	n/a	n/a	n/a
SA7: Change in environmental habitat is optimistic	N/A	No OM4 contribution	n/a

Ref:

A.7 PFC for Corton and North Corton combined baseline erosion

Project teams are required to provide a copy of the PF Calculator within their business case for approval of FCERM GiA.

Flood and Coastal Erosion Risk Management (FCERM)

Partnership Funding (PF) calculator 2020 for Flood and Coastal Erosion Risk Management Grant-in-Aid (FCERM GiA)

Version 1: March 2020 (for use by projects delivering FCERM outcomes after 1 April 2021)

Key: input | selection | calculated cells

SECTION 1: Project details

Project Name	Gunton and Corton Options Appraisal	Project stage			Benefit:Cost ratio
National Project number	B2413600	Option reference	Corton and North Corton base	Project benefit to cost ratio:	0.1 to 1
Date of PF Calculator	29 October 2021			Effective return to taxpayer:	n/a to 1
Lead RMA	Coastal Partnership East			Effective return on contributions:	n/a to 1
FCERM GiA applicant type					

All values in £ (pound Sterling)

Figures in blue to be included in the national FCERM capital programme for the chosen option

FCERM GiA eligibility is removed as costs exceed benefits

SECTION 2: Prospect of eligibility for FCERM GiA

Confirmed strategic approach?			
Raw PF Score	n/a	Adjusted PF Score	n/a
Minimum pv contribution/saving required	n/a	pv FCERM GiA up-front costs	n/a
pv maximum eligible FCERM GiA	low BCR	pv FCERM GiA future costs	n/a

SECTION 3: Costs and contributions for the PREFERRED OPTION (over the duration of benefits period)

Project costs	Towards qualifying outcomes	Contributions secured to date	towards pv appraisal costs	towards pv qualifying outcomes up-front	towards pv qualifying outcomes future	Contributor(s) or Fund(s)
pv appraisal costs		pv Local Levy				
pv design and construction costs	£ 33,506,099	pv other public sector				
pv risk contingency		pv private and voluntary sector				
pv costs for approval	£ 33,506,099	pv other Environment Agency				
pv future costs	£ 542,964	pv sub-total	£ -	£ -	£ -	
pv WLC (over duration of benefits)	£ 34,049,063	pv total contributions	£ -			

Contributions to future costs are not included in GiA calculation. Other RMAs are encouraged to secure contributions towards future costs, separately

SECTION 4: Outcome Measure 1 - economic benefits arising from FCERM

pv WLB (appraisal period)	£ 2,553,093	Economic summary sheet completed	
Duration of benefits (DoB) period	100	Economic data included in business case?	
pv WLB (DoB = OM1A)	£ 2,553,093		
People related impacts - due to measures proposed (DoB = OM1B)	£ 288,738		

SECTION 5A: Outcome Measure 2A (today) - households at risk today that are better protected against flood risk by this project (over the duration of benefits period)

N° households in deprived areas	at risk today					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	£ -
21% to 40% most deprived						0	0	0	0	0	£ -
60% least deprived						0	0	0	0	0	£ -

N° households in deprived areas	at risk after duration of benefits				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived					
21% to 40% most deprived					
60% least deprived					

Annual damages avoided (£) compared with a household at low risk

low risk	moderate risk	intermediate risk	significant risk	very significant risk
0	59	294	1000	1589

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 5B: Outcome Measure 2B (2040) - households at risk in 2040 that are better protected against flood risk by this project (over the remaining duration of benefits period)

Year when measures are ready for service - Gateway 4:

OM2 (2040) FCERM GiA eligibility is not applicable

N° households in deprived areas	at risk from 2040					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	Ltd by DoB
21% to 40% most deprived						0	0	0	0	0	Ltd by DoB
60% least deprived						0	0	0	0	0	Ltd by DoB

N° households in deprived areas	at risk after duration of benefits				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived					
21% to 40% most deprived					
60% least deprived					

Annual damages avoided (£) compared with a household at low risk

low risk	moderate risk	intermediate risk	significant risk	very significant risk
0	59	294	1000	1589

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 6: Outcome Measure 3 - households better protected against coastal erosion

N° households in deprived areas	at risk today		Damages per household avoided:			pv qual. benefits
	long-term loss	medium-term loss		Long-term loss	Medium-term loss	
20% most deprived			Annual damages avoided	£ 6,800	£ 6,800	£ -
21% to 40% most deprived			Loss expected in	50	20 years	£ -
60% least deprived	32	3	Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)	£ 1,341	£ 3,417	£ 1,588,035

SECTION 7: Outcome Measure 4 - environmental improvements

Type of habitat (OM4A)	'before' condition (Ha)			'after' condition at end of DoB (Ha)			pv qual. benefits
	Poor	Moderate	Good	Poor	Moderate	Good	
Intertidal habitat							£ -
Woodland							£ -
Wet woodland							£ -
Wetlands/wet grassland							£ -
Grassland							£ -
Heathland							£ -
Ponds/lakes							£ -
Arable land							£ -

Length of river habitat enhanced (OM4B)	kilometre(s)	pv qual. benefits
Comprehensive restoration		£ -
Partial restoration		£ -
A single, major physical improvement		£ -

SECTION 8: Qualifying benefits and eligible FCERM GiA arising from project

OM	deprivation	Qualifying benefits	%age benefits	Payment rate	Eligible FCERM GiA	%age
OM1a	overall	£ 676,320	26.5%	6	£ 40,579	9.8%
OM1b	people related	£ 288,738	11.3%	20	£ 57,748	13.9%
OM2	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ -	0.0%	20	£ -	0.0%
OM3	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ 1,588,035	62.2%	20	£ 317,607	76.4%
OM4	habitat	£ -	0.0%	20	£ -	0.0%
	rivers	£ -	0.0%	20	£ -	0.0%
Total		£ 2,553,093	pv max. eligible GiA		£ 415,934	

Example sensitivity analyses

Test	Raw score	Contributions required	%age of whole life costs
PF Calculator (above)	n/a	n/a	n/a
SA1: pv WLC - Affordability	n/a	n/a	n/a
SA2: OM2 - Flood risks lower than assumptions made	N/A	No OM2 contribution	n/a
SA3: OM3 - Erosion risks lower than assumptions made	n/a	n/a	#VALUE!
SA4: Duration of benefits - Option choice is conservative	n/a	n/a	n/a
SA5: Duration of benefits - Option choice is optimistic	n/a	n/a	n/a
SA6: Strategic considerations not demonstrated	n/a	n/a	n/a
SA7: Change in environmental habitat is optimistic	N/A	No OM4 contribution	n/a

Ref:

A.8 PFC for Corton and North Corton combined high erosion

Project teams are required to provide a copy of the PF Calculator within their business case for approval of FCERM GiA.

Flood and Coastal Erosion Risk Management (FCERM)

Partnership Funding (PF) calculator 2020 for Flood and Coastal Erosion Risk Management Grant-in-Aid (FCERM GiA)

Version 1: March 2020 (for use by projects delivering FCERM outcomes after 1 April 2021)

Key: input | selection | calculated cells

SECTION 1: Project details

Project Name	Gunton and Corton Options Appraisal	Project stage			Benefit:Cost ratio
National Project number	B2413600	Option reference	Corton and North Corton high	Project benefit to cost ratio:	0.3 to 1
Date of PF Calculator	29 October 2021			Effective return to taxpayer:	n/a to 1
Lead RMA	Coastal Partnership East			Effective return on contributions:	n/a to 1
FCERM GiA applicant type					

All values in £ (pound Sterling)

Figures in blue to be included in the national FCERM capital programme for the chosen option

FCERM GiA eligibility is removed as costs exceed benefits

SECTION 2: Prospect of eligibility for FCERM GiA

Confirmed strategic approach?			
Raw PF Score	n/a	Adjusted PF Score	n/a
Minimum pv contribution/saving required	n/a	pv FCERM GiA up-front costs	n/a
pv maximum eligible FCERM GiA	low BCR	pv FCERM GiA future costs	n/a

SECTION 3: Costs and contributions for the PREFERRED OPTION (over the duration of benefits period)

Project costs	Towards qualifying outcomes	Contributions secured to date	towards pv appraisal costs	towards pv qualifying outcomes up-front	towards pv qualifying outcomes future	Contributor(s) or Fund(s)
pv appraisal costs		pv Local Levy				
pv design and construction costs	£ 33,506,099	pv other public sector				
pv risk contingency		pv private and voluntary sector				
pv costs for approval	£ 33,506,099	pv other Environment Agency				
pv future costs	£ 542,964	pv sub-total	£ -	£ -	£ -	
pv WLC (over duration of benefits)	£ 34,049,063	pv total contributions	£ -			

Contributions to future costs are not included in GiA calculation. Other RMAs are encouraged to secure contributions towards future costs, separately

SECTION 4: Outcome Measure 1 - economic benefits arising from FCERM

pv WLB (appraisal period)	£ 8,679,493	Economic summary sheet completed	
Duration of benefits (DoB) period	100	Economic data included in business case?	
pv WLB (DoB = OM1A)	£ 8,679,493		
People related impacts - due to measures proposed (DoB = OM1B)	£ 1,428,507		

SECTION 5A: Outcome Measure 2A (today) - households at risk today that are better protected against flood risk by this project (over the duration of benefits period)

N° households in deprived areas	at risk today					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	£ -
21% to 40% most deprived						0	0	0	0	0	£ -
60% least deprived						0	0	0	0	0	£ -

N° households in deprived areas	at risk after duration of benefits				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived					
21% to 40% most deprived					
60% least deprived					

Annual damages avoided (£) compared with a household at low risk

low risk	moderate risk	intermediate risk	significant risk	very significant risk
0	59	294	1000	1589

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 5B: Outcome Measure 2B (2040) - households at risk in 2040 that are better protected against flood risk by this project (over the remaining duration of benefits period)

Year when measures are ready for service - Gateway 4:

OM2 (2040) FCERM GiA eligibility is not applicable

N° households in deprived areas	at risk from 2040					change due to project					pv qual. benefits
	low risk	moderate risk	intermediate risk	significant risk	very significant risk	low risk	moderate risk	intermediate risk	significant risk	very significant risk	
20% most deprived						0	0	0	0	0	Ltd by DoB
21% to 40% most deprived						0	0	0	0	0	Ltd by DoB
60% least deprived						0	0	0	0	0	Ltd by DoB

N° households in deprived areas	at risk after duration of benefits				
	low risk	moderate risk	intermediate risk	significant risk	very significant risk
20% most deprived					
21% to 40% most deprived					
60% least deprived					

Annual damages avoided (£) compared with a household at low risk

low risk	moderate risk	intermediate risk	significant risk	very significant risk
0	59	294	1000	1589

The deprivation categories are taken from the **Index of Multiple Deprivation**, available through gov.uk (see guidance and version sheet for links)

SECTION 6: Outcome Measure 3 - households better protected against coastal erosion

N° households in deprived areas	at risk today		Damages per household avoided:				pv qual. benefits
	long-term loss	medium-term loss		Long-term loss	Medium-term loss		
20% most deprived			Annual damages avoided	£ 6,800	£ 6,800		£ -
21% to 40% most deprived			Loss expected in	50	20	years	£ -
60% least deprived	166	10	Present value of Year 1 loss (i.e. first year damages, discounted based on when loss is expected)	£ 1,341	£ 3,417		£ 7,670,245

SECTION 7: Outcome Measure 4 - environmental improvements

Type of habitat (OM4A)	'before' condition (Ha)			'after' condition at end of DoB (Ha)			pv qual. benefits
	Poor	Moderate	Good	Poor	Moderate	Good	
Intertidal habitat							£ -
Woodland							£ -
Wet woodland							£ -
Wetlands/wet grassland							£ -
Grassland							£ -
Heathland							£ -
Ponds/lakes							£ -
Arable land							£ -

Length of river habitat enhanced (OM4B)

	kilometre(s)	pv qual. benefits
Comprehensive restoration		£ -
Partial restoration		£ -
A single, major physical improvement		£ -

SECTION 8: Qualifying benefits and eligible FCERM GiA arising from project

OM	deprivation	Qualifying benefits	%age benefits	Payment rate	Eligible FCERM GiA	%age
OM1a	overall	Ltd by high OM1b,2,3,4 values	0.0%	6	£ -	0.0%
OM1b	people related	£ 1,428,507	15.7%	20	£ 285,701	15.7%
OM2	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ -	0.0%	20	£ -	0.0%
OM3	20% most	£ -	0.0%	45	£ -	0.0%
	21% to 40%	£ -	0.0%	30	£ -	0.0%
	60% least	£ 7,670,245	84.3%	20	£ 1,534,049	84.3%
OM4	habitat	£ -	0.0%	20	£ -	0.0%
	rivers	£ -	0.0%	20	£ -	0.0%
Total		£ 9,098,752	pv max. eligible GiA		£ 1,819,750	

Ref:

Example sensitivity analyses

Test	Raw score	Contributions required	%age of whole life costs
PF Calculator (above)	n/a	n/a	n/a
SA1: pv WLC - Affordability	n/a	n/a	n/a
SA2: OM2 - Flood risks lower than assumptions made	N/A	No OM2 contribution	n/a
SA3: OM3 - Erosion risks lower than assumptions made	n/a	n/a	#VALUE!
SA4: Duration of benefits - Option choice is conservative	n/a	n/a	n/a
SA5: Duration of benefits - Option choice is optimistic	n/a	n/a	n/a
SA6: Strategic considerations not demonstrated	n/a	n/a	n/a
SA7: Change in environmental habitat is optimistic	N/A	No OM4 contribution	n/a