

# Executive

Agenda  
item:  
**A.9**

Meeting Date: 8 February 2021  
 Portfolio: Environment & Transport / Economy, Enterprise & Housing  
 Key Decision: No  
 Within Policy and Budget Framework: No  
 Public / Private: Public  
 Title: Cumbria Coastal Strategy  
 Report of: Jane Meek, Corporate Director of Economic Development  
 Report Number: PC 06/21

## Purpose / Summary:

The purpose of this report is to present the Cumbria Coastal Strategy for adoption.

## Recommendations:

- The recommended to Executive is to adopt the Cumbria Coastal Strategy.

## Tracking

Scrutiny:	
Executive	8 February 2021
Council	

# **1. BACKGROUND**

## **Introduction**

- 1.1 The Shoreline Management Plan (SMP2 ED 25.10) was adopted by Council in 2010, this new Cumbria Coastal Strategy (the Strategy) is a local focus on short term to long term works needed to protect infrastructure close to the coast.
- 1.2 The County Council has brought together a partnership, funded through the Environment Agency, to develop a strategy for flood and coastal erosion risk management. Funding for the works is granted by the North West Flood and Coastal Committee and is based on the success of other studies carried out in the south of Cumbria. The study has been underway since 2017 through consultants appointed on behalf of the County Council.
- 1.3 To date, Barrow Borough Council and Copeland Borough Council have endorsed the Strategy and in the next month Allerdale Borough Council and South Lakeland District Council will also have endorsed the Strategy. The Environment Agency approved the Strategy in October 2020 and the accompanying Habitats Regulations Assessment in December 2020. The County Council will be looking to endorse the Strategy at their Cabinet meeting in March 2021.

## **Partnership work**

- 1.4 North West Regional Flood and Coastal Committee Business Plan 2019-22 has a clear mission statement and three purposes:

‘Working together on sustainable management of flood and coastal erosion risks, we will improve the health and wellbeing of our communities, and enhance the economy and environment in the North West.

The three main purposes are:

- To ensure that the identification, communication and management of flood risk and coastal erosion is coherent across catchments and shorelines.
- To encourage efficient investment in flood and coastal erosion risk management in a way that provides value for money and benefits local communities.
- To bring together risk management authorities and other relevant bodies to understand flood and coastal erosion risks in our area.’

Hence the agreement to funding to a substantial study for the Cumbria coast.

## **District shoreline, Strategy and Action Plan**

- 1.5 The main reports that have informed the Strategy include:

Strategy Appraisal Report

Technical Appraisal Reports (for each section of coastline)

Action Plan

Economics Report

Strategic Environmental Appraisal

Habitats Regulation Assessment

Summary Report

Summary Report for each District

1.6 The Summary Report for Carlisle City Council is presented in Appendix A. This summary document has been tailored to the shoreline that falls within the district boundary. The summary document sets out the definitions for the Shoreline Management System in two related levels:

1. Shoreline Management Plan, the policies, Policy Areas and Units
2. Coastal Strategy, Priority Units and Approaches

1.7 The shoreline within our district falls within the Policy Area 'Cardurnock to Scottish Border', Policy Area number '11e8'. This Policy Area is in part shared by Allerdale Borough Council. The Policy Area is subdivided into Policy Units, one of which, 'Rockcliffe 11e8.7', is identified as a Priority Unit.

1.8 The draft action plan sets out the activities the Council is the Lead Authority for, subject to funding and resource availability. A summary of these actions is presented in Appendix B.

1.9 Delivery of actions and projects will be supported by the Cumbria County Council working alongside Carlisle City Council. The North-West & North Wales Coastal Group Regional Monitoring Programme provides continuous coastal monitoring updates for all the maritime Local Authorities. There is a priority to develop an annual review of erosion rates to enable improved assessment of coastal flooding and erosion risk.

## **Solway Firth Erosion Study**

1.10 There is a common theme throughout the Policy Unit recommendations, within the Carlisle City Council coastline in the Strategy, for an estuary-wide study looking at future gains and losses in marsh and flats. Cumbria County Council has secured funding for this study and consultants have started work. There are also cross-border considerations as to joint work on a more detailed study for the Solway Firth to support the Solway - Tweed basin consultation soon to be undertaken.

## **2. PROPOSALS**

2.1 The proposal is for all 5 district Coast Protection Authorities in Cumbria is to adopt the Strategy prior to the County Council adoption in March 2021.

## **3. RISKS**

3.1 The NWRFC Business Plan describes the risk associated with coastal change as:

'Coasts are subject to natural movement and change and this will increase with rising sea levels and more extreme weather events. In the long term it may not be sustainable to defend and preserve the coastline exactly where it is, in some

places possibly involving the complete loss of land and movement of coastal communities from unacceptable risk. In other places communities will need to adapt to flooding and coastal change in other ways. There could also be pollution impacts resulting from erosion of old landfill and industrial sites. The North West coastline is diverse and faces a variety of challenges to its sustainability. The scale of flooding and coastal change in the coming decades will require a long term approach to improve understanding of risk and take appropriate, place-based and evidence-backed action.'

- 3.2 The Shoreline Management Planning process (Policies and plans) is how the partnership ensures local areas adapt to this risk. The long-term nature of coastal change and the adaptation that could be required means that engagement with coastal communities requires a clear approach, timeframe and resources.

#### **4. PUBLIC ENGAGEMENT**

- 4.1 Public engagement on the Strategy and associated Strategic Environmental Assessment was undertaken in 2018 and 2019. The first round of public engagement was undertaken on the draft options coming out of the Strategy, in November and December 2018. Comments and views received were taken into account, alongside technical, economic, and environmental factors to propose a preferred strategic approach and future activities for each section of the coastline.
- 4.2 To make sure the impacts on people, the local economy and the environment were fully understood, further public engagement was carried out on the draft Strategy reports in November and December 2019. A survey was available to provide feedback on how the coastline should be managed.
- 4.3 Further information can be found on the County Council website. The final Strategy reports will be placed here following Cumbria County Council endorsement of the Strategy: <https://www.cumbria.gov.uk/ccs>

#### **5. CONCLUSION AND REASONS FOR RECOMMENDATIONS**

- 5.1 The Strategy provides an evidence base of the risk of coastal flooding and erosion, identify properties and infrastructure at risk, and identify potential solutions together with a framework for future infrastructure and development. The Executive are requested to endorse the Strategy.
- 5.2 Carlisle City Council is a 'maritime district' as defined in 1949 Coast Protection Act and therefore Coast Protection Authority. The Council has permissive powers under the terms of the 1949 Coast Protection Act to carries out routine and capital works, this is not however a legal obligation to protect the shoreline. The actions assigned to the Council are subject to resources and funding being available.

#### **6. CONTRIBUTION TO THE CARLISLE PLAN PRIORITIES**

- 6.1 Adaptation to coastal change will help to improve the health and wellbeing of residents and enhance the economy and local environment.

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**Appendices****attached to report:**

A: Summary Report of the Cumbria Coastal Strategy

B: Summary of Action Plan

**Note: in compliance with section 100d of the Local Government Act 1972 the report has been prepared in part from the following papers:**

<https://carlisle.cmis.uk.com/Meetings/tabid/73/ctl/ViewMeetingPublic/mid/410/Meeting/4883/Committee/824/SelectedTab/Documents/Default.aspx>

**CORPORATE IMPLICATIONS:**

**LEGAL** - Coast protection authorities under the Coast Protection Act 1949 are the councils of maritime districts. These councils—with the EA or NRBW—are also “coastal erosion risk management authorities” under s.2A of the 1949 Act as added by the Flood and Water Management Act 2010. These authorities have a general power to carry out such protective works as they consider desirable to manage a coastal erosion risk and to acquire land, by agreement or compulsorily, for coast protection purposes. This general power merely confers a capacity to do what would otherwise be beyond the powers of the authority. A council cannot, in exercising these general powers, do something which apart from them would be actionable.

**FINANCE** – The actions assigned to the Council are subject to resources and funding being available.

**EQUALITY** – None.

**PROPERTY** – None.

**INFORMATION GOVERNANCE** – There are no information governance implications with this report.

# Cumbria Coastal Strategy

**Carlisle City Council**  
summary document

November 2020



## Cumbria Coastal Strategy

Project No: 694602CH  
Document Title: Cumbria Coastal Strategy summary report – Carlisle CC  
Revision: 4.0  
Document Status: Final  
Date: November 2020  
Client Name: Cumbria County Council  
Project Manager: A Parsons  
Author: H Jay

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### Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
1	Oct 2018	Initial version for public engagement on strategy options	HJ	BS	AP	AP
2	Nov 2019	Revised for public engagement on draft strategy	HJ	BS	AP	AP
3	April 2020	Final version after public engagement	HJ	BS	AP	AP
4	Nov 2020	Division of summary document into coastal districts	DT	AP	HJ	AP

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# 1 Introduction

Cumbria County Council has worked with the Cumbria Coast Protection Authorities, the Environment Agency and other organisations to develop this strategy for the future management of the coast from Arnside to the Scottish Border.

A coastal strategy is a plan that sets out how we will manage the risks related to coastal flooding and erosion along our coastline over the next century. It is also needed for us to get approval from the government for future flood and coastal risk management schemes and to help get national funds to contribute to the cost of defences.

This strategy forms a key step in setting out our future approach to managing risks and will feed into our local plans.

It builds upon the policies set in the North West Shoreline Management Plan, which was adopted in 2010, and will decide on the best approaches to carry out those policies.

In some places a change in Shoreline Management Plan policy has been recommended.



## 2 What do different terms mean?

Within this document we use technical words to explain the ideas we have about managing future coastal flood and erosion risks. These are explained in this section.

### Shoreline Management Plan

A Shoreline Management Plan provides a large-scale assessment of the risks associated with coastal processes. A plan including our coastline was adopted in 2010 and covered the coast from Great Ormes Head in Wales to the Scottish Border. It set out policies for the short (next 20 years), medium (20 to 50 years) and long (beyond 50 years) terms.

The Shoreline Management Plan divided the Cumbria coast into 24 areas, known as **policy areas**, each of which include a number of **policy units**. We have used the same units.

### Shoreline Management Plan policy

This describes how your stretch of shoreline is most likely to be managed to address flood or erosion. There are four Shoreline Management Plan policies that were used for all Shoreline Management Plans in England and Wales:

policy	what does this mean?
No active intervention	There will be no further investment in coastal defences or operations and no new defences will be built.
Hold the line	The aim is to retain the shoreline in its current position. This might involve maintaining current defences or constructing new defences in the future.
Managed realignment	Allowing the shoreline to move backwards or forwards, with measures to control or limit movement.
Advance the line	Building out the coastline through construction of new seaward defences.

### Policy areas

These are lengths of coast or estuary where actions along one stretch may affect another stretch due to sediment links. It usually includes a number of policy units.

### Policy units

These are stretches of coast for which a separate shoreline management policy has been set. Usually they cover stretches which are similar in form, for example there are cliffs fronted by beaches, or where there are similar features at risk, for example along a town.

## Coastal strategy

Strategies are the second level in the shoreline management system. They look at how we can carry out the Shoreline Management Plan policies for smaller stretches of coast in more detail. Shoreline Management Plan policies can occasionally change as a result of these strategies. We have used the same policy units as the Shoreline Management Plan. Some of these policy units have been recognised as **priority units**.

## Priority units

There are stretches of coast where we think there are coastal defence management needs in the short term. We have looked at a range of approaches for these units:

## Approaches

For the priority units we have looked at a number of different approaches:

approach	what does this mean?
Do nothing	This means walking away from the defences and undertaking no further work. Existing defences will fail over time and erosion and flood risk will increase. On frontages without defences there would be no new interventions. We have to consider this at all locations, as a baseline.
Do minimum	This means we will only carry out patch and repair of existing defences. Again, their condition will worsen over time and the level of protection will decrease. There may become a time when we can't continue works.
Hold the line	There are three approaches. We can <b>maintain</b> defences, which means we won't address any increases in sea level. We can <b>sustain</b> defences, which means we raise or reinforce defences to address any increase in risk. Or we can <b>improve</b> defences and provide a better level of protection. The <b>improve</b> approach also applies to building new defences on frontages where there are none at present.
Managed realignment	Where erosion is the key concern, this might involve defences to slow erosion, or building defences once assets are at risk. Where flooding is the key concern this might involve constructing defences in a more sustainable landward location or removing defences and allowing retreat to naturally higher land.

## 3 The project

### We are working with Jacobs to develop our plan.

In May 2017 we commissioned Jacobs, an independent engineering consultant, to help us develop this strategy.

We have since carried out several studies to understand the unique features of our coastline and to look at what may be at risk for coastal erosion and flooding, both now and in the future.

We have used these studies to decide on where to focus our efforts and have started to consider how we might best manage risks along our shorelines in the future.

### You said, we listened.

Between November and December 2018 we invited everyone living, visiting or working on or near the coast to take part in determining how their local coastline should be managed. We held a series of drop-in events, in Silloth, Whitehaven, Millom, Barrow-in-Furness and Grange over Sands. An on-line and paper survey were also available.

We used the feedback provided to inform our decisions and to help us define preferred approaches for the priority frontages.

In November and December 2019, we asked for feedback on the final proposals. An on-line survey was available on our website, together with the study reports. A number of paper questionnaires and copies of the Engagement Summary Report were also placed in Silloth, Workington, Whitehaven, Millom, Barrow in Furness, and Grange over Sands libraries for those without internet access.

We have now looked at all responses received and using these have updated the strategy and this summary document.

### What happens next?

The strategy and its action plan will guide the best approach to future management of this coastline. Cumbria County Council, the district councils, and the Environment Agency will all have a lead role in ensuring delivery of the Strategy.

We expect that the Environment Agency will monitor delivery of the Local Authorities and their own actions as part of their coastal risk management overview role.

## 4 What you can find in this document

We have looked at the entire coastline of Cumbria and considered how we might manage risks from coastal erosion and flooding in the future.

The Shoreline Management Plan divided the Cumbria coast into **24 policy areas**. Each policy area includes a number of **policy units**. We have used these same units in our strategy.

We have decided which policy units may have coastal defence management needs in the short term. This may be where:

- there are key assets at possible risk from coastal flooding or erosion,
- the current Shoreline Management Plan policy has been questioned, or
- there are opportunities to improve the environment and bring benefits to an area.

We have called these **priority units**. Here, we have looked at different approaches to dealing with future coastal flood and erosion risks and developed a preferred approach based on technical appraisals and feedback from the consultation events.

Along the rest of the coast, we have considered the current Shoreline Management Plan policy and recommended future activities.

In this document, you can find information on:

- whether your frontage lies within a priority or non priority unit,
- key issues and opportunities,
- our preferred approach from considering costs, benefits provided and impacts on the wider environment.



Find out  
more

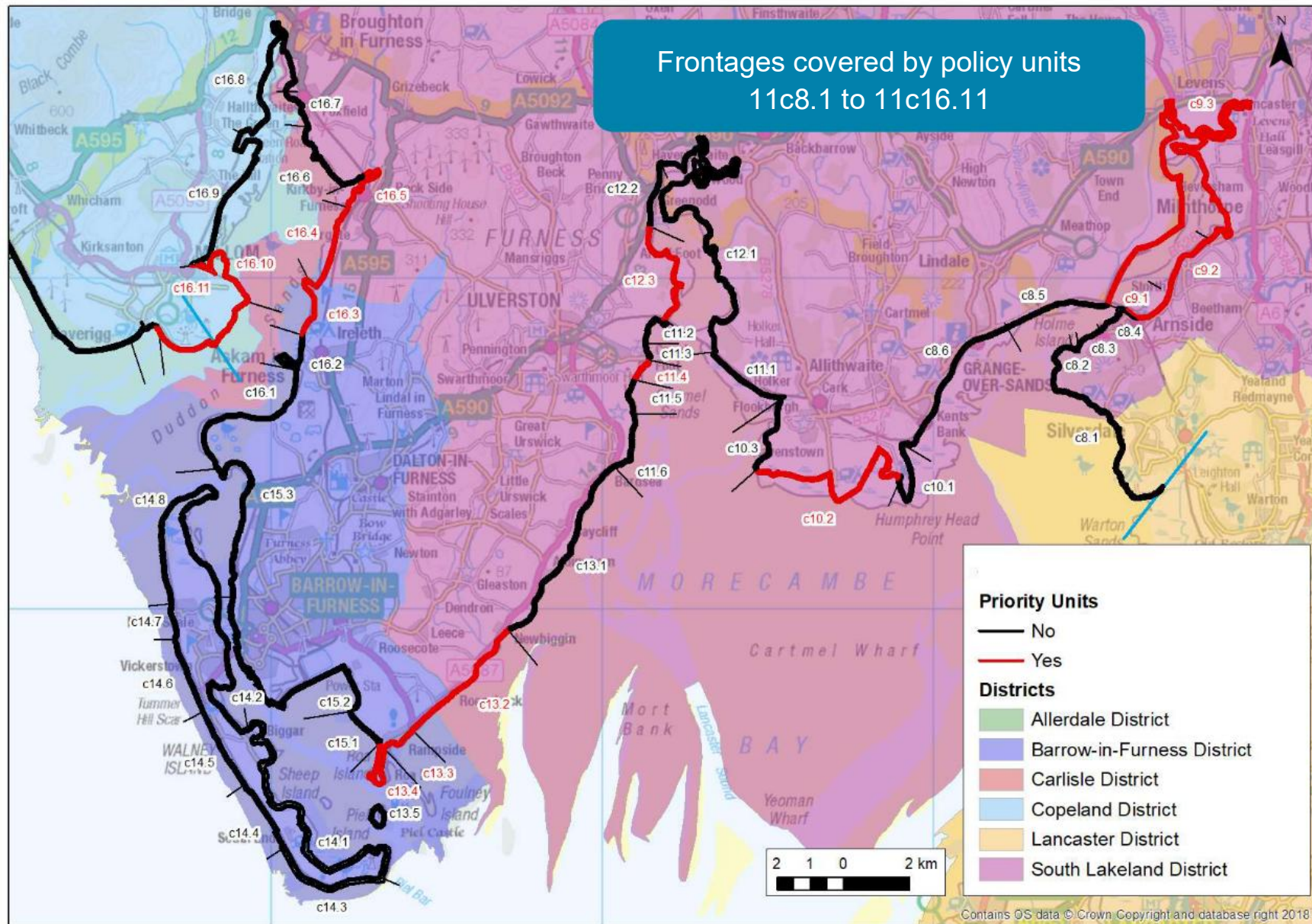
[More details](#) can be found in a series of supporting documents to the strategy, which provide more detail for each policy unit and also cover topics such as:

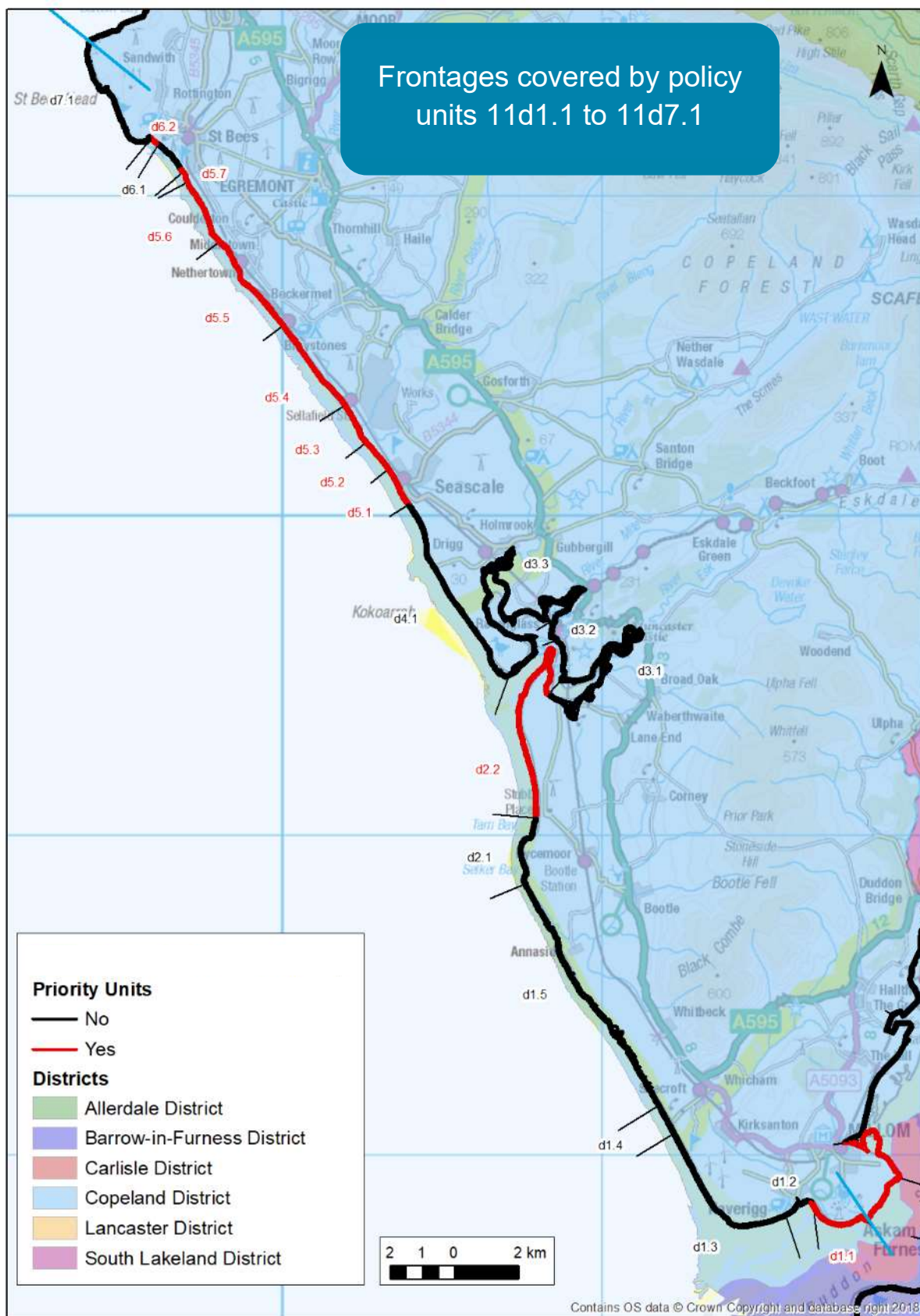
- future actions
- costs and benefits
- environmental impacts

## 5 Finding your frontage

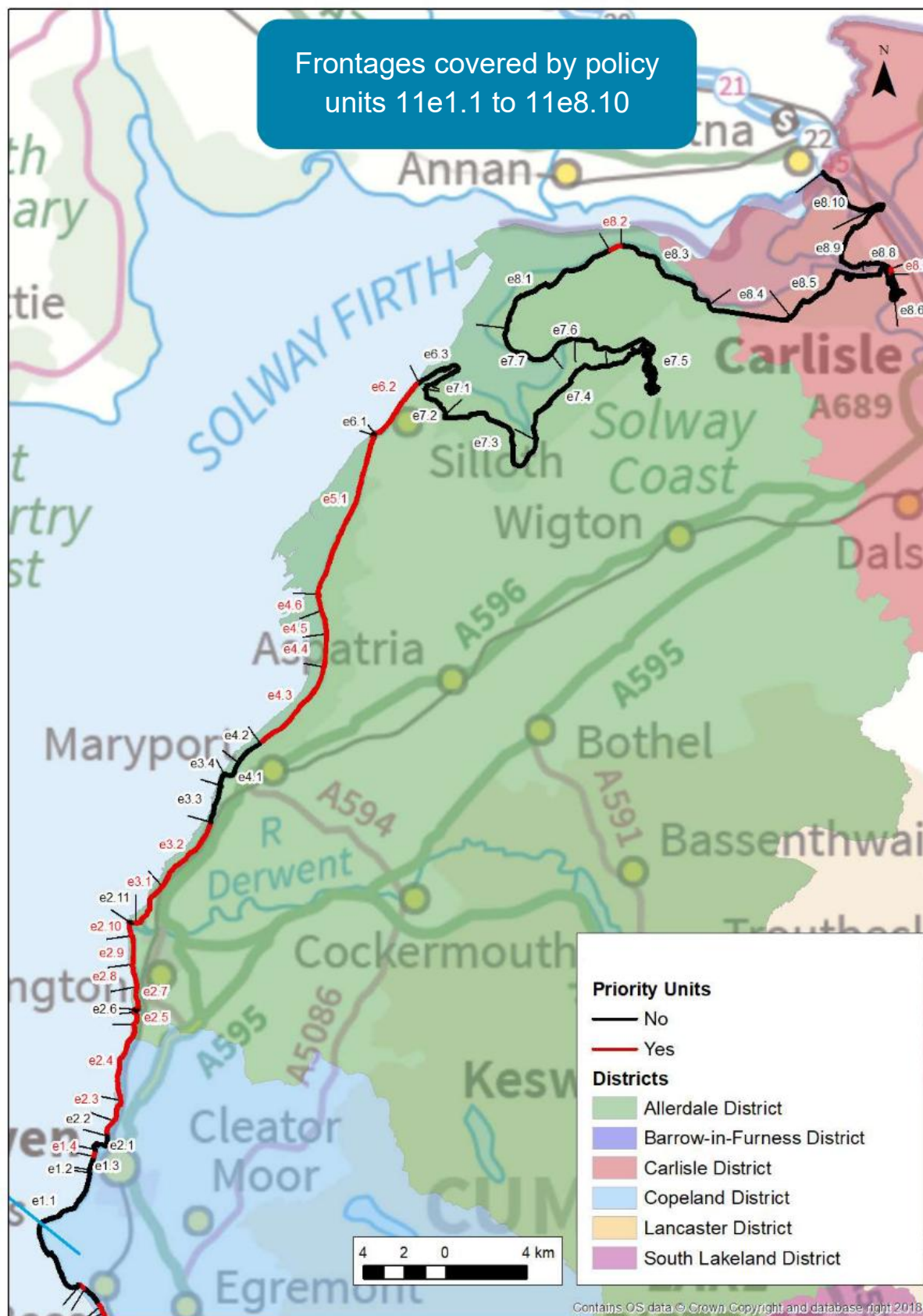
responsible authority	policy area and number	go to page
Allerdale Borough Council & Carlisle City Council	11e8 Cardurnock to Scottish Border	<a href="#">➤</a> 10



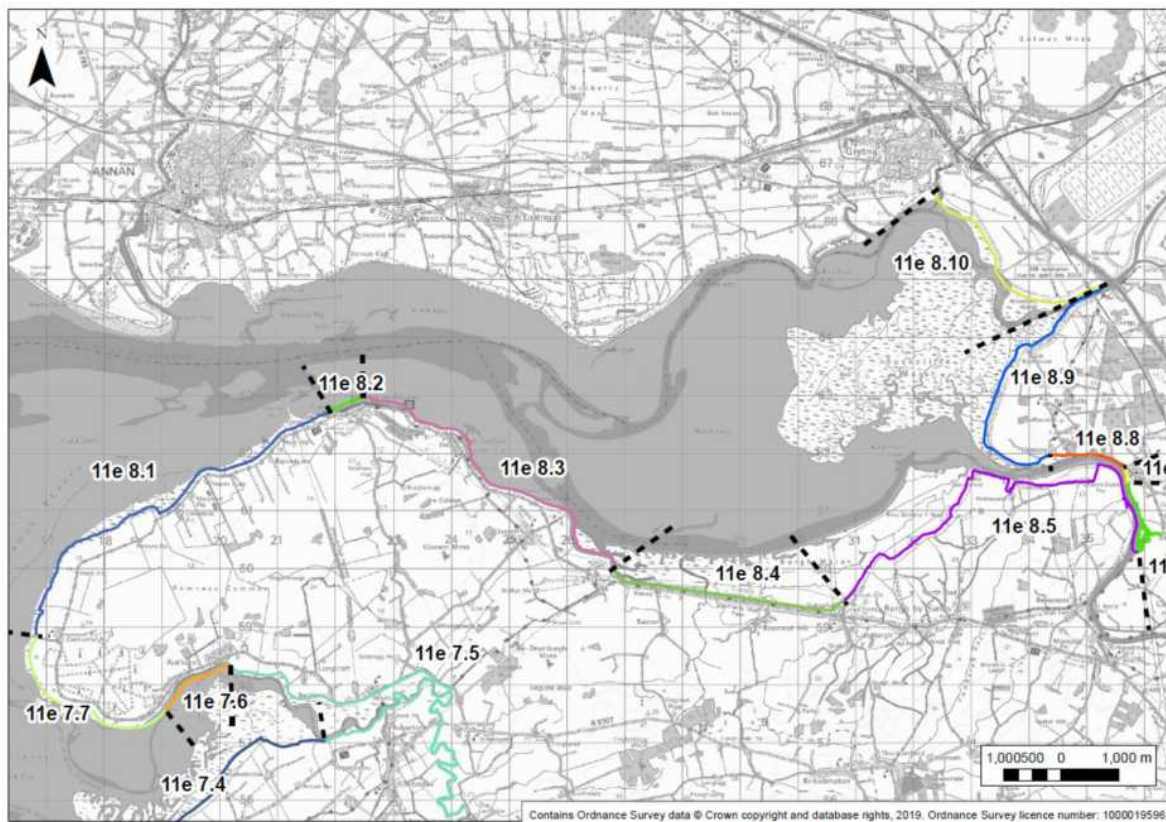








## 11e8 Cardurnock to Scottish Border



Policy area 11e8: Cardurnock to Scottish Border. Baseline mapping © Crown copyright and database rights, 2019. Ordnance Survey licence number: 1000019596.



This policy area includes the following policy units:


Responsibilities	Policy unit number and name	Is it a priority unit?
Allerdale Borough Council, Carlisle City Council, Cumbria County Council, private landowners	11e8.1 Cardurnock to Bowness-on-Solway	no
	11e8.2 Bowness-on-Solway	yes
	11e8.3 Bowness-on-Solway to Drumburgh	no
	11e8.4 Drumburgh to Dykesfield	no
	11e8.5 Dykesfield to Kingmoor (Eden NTL)	no
	11e8.6 Kingmoor to Rockcliffe	no
	11e8.7 Rockcliffe	yes
	11e8.8 Rockcliffe to Demesne Farm	no
	11e8.9 Demesne Farm to Metal Bridge (Esk)	no
	11e8.10 Metal Bridge (Esk) to the River Sark	no

*Greyed out policy units are not within the Carlisle City Council boundary and so are excluded from this report.*

This policy area extends along the southern shoreline of the Solway Firth, from Cardurnock to the River Sark at the border between England and Scotland. It includes the dynamic inner section of the Solway Firth.

There are several settlements, including Bowness-on-Solway, Port Carlisle, Drumburgh, Easton, Boustead Hill, Burgh by Sands and Rockcliffe, strung out along the coastal fringe; many of these are located on slightly higher ground and fronted by extensive saltmarsh, which forms an important natural defence, but flood risk remains an issue for others.

There are very limited formal coastal defences in the area and in most locations the Shoreline Management Plan policy is Managed realignment, allowing for continued natural coastal evolution alongside measures to proactively adapt to future coastal changes and environmental opportunities.

 The following sections provide further details for each policy unit 

### 11e8.4 Drumburgh to Dykesfield

The current Shoreline Management Plan policy is Managed realignment from the short term. We do not think that the policy should change at this time as it is in line with national and international environmental designations for the site.

There would, however, be increasing risks of tidal flooding to the main coastal road and it is likely that in the future the road may need to be closed on a more frequent basis, with potential for damage to the road surface.

Erosion is not currently an issue to the road, due to the expanse of saltmarsh, although recent monitoring data does indicate the marsh is narrowing over time due to shoreward advancement of the low water channel. “Green” solutions to manage erosion of the marsh edge if it threatens the road should be considered alongside potential environmental enhancements to create more wetland.

We recommend a number of future activities, such as:

- Continued monitoring of changes in the extent of marsh and intertidal areas.
- Detailed discussion between landowners, Cumbria County Council (including highways), Allerdale Borough Council, Solway Coast AONB, and Natural England to consider potential for land management changes along the coastal fringe, with the view to creating more wetland areas, particularly between Easton and Boustead Hill. Liaison with cross-border organisations, namely Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH) and Historic Environment Scotland (HES) is also recommended.
- Study to assess best options for addressing long term sustainability of the coastal link road.
- Monitoring of risk to historical assets and liaison with Historic England to enable sufficient time for recording and, where appropriate, collection of finds.
- An estuary-wide (and cross-border) study looking at future gains and losses in marsh and flats. This would improve our understanding of how the estuary is changing, identify sites where we might be able to consider future managed realignment and assess impacts on the English and Scottish coasts.

It is important to note that recommended activities may rely on funding and resources being available to take them forward. Recommended schemes will also require more detailed scheme-level appraisal of options and appropriate consents and permissions.

### 11e8.5 Dykesfield to Kingmoor (Eden NTL)

The current Shoreline Management Plan policy is Managed realignment from the short term. We do not think that the policy should change at this time as it is in line with the national and international environmental designations for the site. No formal

coastal or flood defences present along this frontage but private earth embankments are present in places.

There are opportunities to enable expansion of current saltmarsh through a change in land management.

For those properties that remain at flood risk, such as at New Sandside, flood adaptation measures need to be considered to reduce the impact of flooding and ensure safe exit during extreme events.

**We recommend a number of future activities, such as:**

- Continued monitoring of changes in the extent of marsh and intertidal areas.
- Detailed discussion between landowners, Cumbria County Council (including highways), Carlisle City Council, Solway Coast AONB, and Natural England to consider potential for land management changes along the coastal fringe, with the view to creating more wetland areas. Partnership working with cross-border organisations, namely Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH) and Historic Environment Scotland (HES) is also recommended.
- Monitoring of risk to historical assets and liaison with Historic England to enable sufficient time for recording and, where appropriate, collection of finds.
- An estuary-wide (and cross-border) study looking at future gains and losses in marsh and flats. This would improve our understanding of how the estuary is changing, identify sites where we might be able to consider future managed realignment and assess impacts on the English and Scottish coasts.

It is important to note that recommended activities may rely on funding and resources being available to take them forward. Recommended schemes will be subject to more detailed scheme-level appraisal of options and appropriate consents and permissions

## 11e8.6 Kingmoor to Rockcliffe

The current Shoreline Management Plan policy is Managed realignment from the short term. We do not think that the policy should change at this time to allow opportunities to be sought.

The river course is naturally constrained along part of this frontage. But there could be potential for some localised realignment along the southern extent of low-lying peninsula at Cargo and further north at Carr Bed.

Both would be relatively small sites near the normal tidal limit so there may be infrequent tidal flooding of the sites and habitat diversity could be limited. It is unlikely that sites could be created to compensate any habitat loss or damage elsewhere in the strategy area. There is potential, however, for these to be developed to create flood storage areas, with potential to reduce flood risk further upstream.

We recommend a number of future activities, such as:

- An estuary-wide (and cross-border) study looking at future gains and losses in marsh and flats. This would improve our understanding of how the estuary is changing and identify sites where we might be able to consider future managed realignment.
- Monitoring of risk to heritage assets, with ongoing liaison with Historic England.

It is important to note that recommended activities may rely on funding and resources being available to take them forward.

### 11e8.7 Rockcliffe (priority unit)

The current Shoreline Management Plan policy here is for Hold the line from the short term, to minimise flood risk to Rockcliffe village.

However, there are currently no formal defences along this frontage, so we have only looked at options involving the construction of defences and given the limited properties at risk from flooding, there is limited economic justification for construction of new embankments.

A more suitable approach is therefore considered to be the introduction of temporary defences or individual property adaptation measures to minimise flood risk.

Should residents wish to jointly finance a more permanent solution, the preferred approach would be a set embankment (either earth or low flood wall) adjacent to the road. It is not anticipated that this would be undertaken in next 10 years but this option may become more attractive in future as flood risks increase with climate change.

We recommend a number of future activities, such as:

- Monitoring risk to the frontage -possible responses to the erosion issue along the adjacent unit (11e8.8) need to be taken into account.
- Consider supporting property level protection schemes.
- An estuary-wide (and cross-border) study looking at future gains and losses in marsh and flats. This would improve our understanding of how the estuary is changing, identify sites where we might be able to consider future managed realignment and assess impacts on the English and Scottish coasts.

It is important to note that recommended activities may rely on funding and resources being available to take them forward.

### 11e8.8 Rockcliffe to Demesne Farm

The current Shoreline Management Plan policy is Managed realignment from the short term with specific mention of the need to seek opportunities to reroute or divert undefended coastal road.

A key issue in this area is the risks to the U1068 road, a narrow country lane which links Rockcliffe and Redhill to Castletown. There has been recent slope erosion along part of this stretch. A previous study has been undertaken (by Opus in 2017), which considered a number of possible options to address the risk - these have been considered in this strategy.

Given the limited economic justification for new defences, the recommended strategic approach is for continued monitoring and management of risk to the road, with closure when it becomes unsafe.

We recommend a number of future activities, such as:

- Monitoring the risk to the road due to bank erosion.
- Asset inspections along the road to look for signs of cracking and evidence of subsidence.
- Continued discussions between Cumbria County Council (who are responsible for the road), Carlisle City Council and Rockcliffe Parish council to discuss sustainability of the road and the possibility of combining works to protect the village (considered in unit 11e8.7 and the road).
- Road closure procedures to be put in place: should there be any further slope movement, it may be necessary to close the road at short notice.
- An estuary-wide (and cross-border) study looking at future gains and losses in marsh and flats. This would improve our understanding of how the estuary is changing, identify sites where we might be able to consider future managed realignment and assess impacts on the English and Scottish coasts.

It is important to note that recommended activities may rely on funding and resources being available to take them forward.

### 11e8.9 Demesne Farm to Metal Bridge (Esk)

The current Shoreline Management Plan policy is Managed realignment from the short term. We do not think that the policy should change at this time as it is in line with national and international environmental designations for the site.

This policy would, however, mean increasing risks of erosion and flooding to the main coastal road. Defences are already in place through the entire length of the frontage, which are believed to be privately managed. These are currently protected by extensive saltmarsh.

There are sites where we could consider realignment for habitat creation. We may need to think about these to offset longer term impacts of building defences elsewhere, but further studies are needed to look at the possible benefits and impacts.

We recommend a number of future activities, such as:

- Monitoring of changes in the extent of marsh and intertidal areas.

- Inspections of coastal defences to update records and provide details of asset properties and potential weaknesses.
- Monitoring of risk to historical assets and liaison with Historic England to enable sufficient time for recording and, where appropriate, collection of finds.
- An estuary-wide (and cross-border) study looking at future gains and losses in marsh and flats. This would improve our understanding of how the estuary is changing, identify sites where we might be able to consider future managed realignment and assess impacts on the English and Scottish coasts.

It is important to note that recommended activities may rely on funding and resources being available to take them forward.

### 11e8.10 Metal Bridge (Esk) to the River Sark

The current Shoreline Management Plan policy is Managed realignment from the short term. This is in line with the national and international environmental designations for the site. Although we do not think that the policy should change at this time, further studies are needed to look at how we continue to protect the M6 motorway and railway. We also need better understanding of how managed realignment could both benefit and impact the wider area.

We recommend a number of future activities, such as:

- Continued monitoring of changes in the extent of marsh and intertidal areas.
- Inspections of coastal defences to update records and provide details of asset properties and potential weaknesses.
- Detailed discussion between landowners, Cumbria County Council (including highways), Carlisle City Council, Solway Coast AONB, and Natural England to consider potential for land management changes along the coastal fringe, with the view to creating more wetland areas. Due to proximity to Scottish border, discussions should also involve the Dumfries and Galloway Council, Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH) and Historic Environment Scotland (HES).
- Monitoring of risk to historical assets and liaison with Historic England to enable sufficient time for recording and, where appropriate, collection of finds.
- An estuary-wide (and cross-border) study looking at future gains and losses in marsh and flats. This would improve our understanding of how the estuary is changing, identify sites where we might be able to consider future managed realignment and assess impacts on the English and Scottish coasts.

It is important to note that recommended activities may rely on funding and resources being available to take them forward. Recommended schemes will also require more detailed scheme-level appraisal of options and appropriate consents and permissions.



Appendix B: Summary of actions assigned to Carlisle City Council as Lead Authority			
Policy Unit Name (Location)	Strategic objective	Preferred strategic approach	Action Description (subject to funding and resource availability)
Dykesfield to Kingmoor (Eden NTL)	Allow area to function as naturally as possible and look for environmental opportunities to enhance site.	Managed realignment - no formal coastal or flood defences present but private earth embankments are present in places. Environmental opportunities under the MR policy could allow potential for habitat enhancements here to mitigate impacts of defences elsewhere in the designated site.	Discussion between stakeholders to consider management changes along the coastal fringe to create more wetland
Rockcliffe	Reduce risk of erosion and flooding to properties at Rockcliffe, whilst minimising impacts on the surrounding area.	<p>Given the limited properties at risk from flooding, there is limited economic justification for construction of new embankments and a more suitable approach is the introduction of temporary defences or individual adaptation measures to minimise flood risk (Option 4).</p> <p>Should residents wish to finance a more permanent solution, the preferred approach would be a set embankment (either earth or low flood wall) (Option 3) adjacent to the road. It is not anticipated that this would be undertaken in next 10 years</p>	Consider supporting property level protection schemes
Rockcliffe to Demesne Farm	Allow area to function as naturally as possible and look for environmental opportunities to enhance site, whilst recognising a potential erosion risk to coastal road (and UU asset).	Managed realignment - monitoring and management of risk to the minor road, with closure when becomes unsafe.	Asset inspections
Demesne Farm to Metal Bridge (Esk)	Allow area to function as naturally as possible and look for environmental opportunities to enhance site.	Managed realignment - there are privately managed embankments protected by extensive saltmarsh. Environmental opportunities under the MR policy could allow potential for habitat enhancements here to mitigate impacts of defences elsewhere in the designated site.	Asset inspections of coastal defences to update records and provide details of asset properties and potential weaknesses

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Metal Bridge (Esk) to the River Sark	Allow area to function as naturally as possible and look for environmental opportunities to enhance site, whilst considering any long term risk to M6 motorway and railway.	Managed realignment -with potential to hold the line at a set back location in future to manage flood risk to the railway and roads. Environmental opportunities under the MR policy could allow potential for habitat creation here to mitigate impacts of defences elsewhere in the designated site.	Asset inspections of coastal defences to update records and provide details of asset properties and potential weaknesses.
Metal Bridge (Esk) to the River Sark	Allow area to function as naturally as possible and look for environmental opportunities to enhance site, whilst considering any long term risk to M6 motorway and railway.	Managed realignment -with potential to hold the line at a set back location in future to manage flood risk to the railway and roads. Environmental opportunities under the MR policy could allow potential for habitat creation here to mitigate impacts of defences elsewhere in the designated site.	Discussion between stakeholders to consider management changes along the coastal fringe to create more wetland