Cumbria Local Flood Risk Management Strategy

Statement to Inform Habitats Regulations Assessment

Cumbria County Council

Project number: 60656809

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1. Introduction

Overview of the Cumbria Local Flood Risk Management Strategy

1.1 Cumbria County Council, as a Lead Local Flood Authority (LLFA), is required under Section 9 of the Flood and Water Management Act 2010 to develop, maintain, apply and monitor a Local Flood Risk Management Strategy (LFRMS).

1.2 The county of Cumbria consists of six districts (Allerdale, Barrow-in-Furness, Carlisle, Copeland, Eden and South Lakeland), and in 2020 had a population of 499,781. The county's population is largely rural and sparsely distributed. It has the second lowest population density among English counties at 73.4 people per km2 and has only five towns with a population of over 20,000 (Carlisle, Kendal, Workington, Whitehaven and Barrow-in-Furness).

1.3 Cumbria contains the Lake District National Park (LDNP), considered one of England's most outstanding areas of natural beauty. Much of Cumbria is mountainous, and it contains every peak in England over 3,000 feet (910 m) above sea level, with Scafell Pike at 3,209 feet (978 m) being the highest point of England. Cumbria's largest settlement and only city is Carlisle, in the north of the county and with a population of 108,400 in 2021. Barrow-in-Furness is the largest town in Cumbria and has a significantly smaller population of 67,648.

1.4 The purpose of the Cumbria LFRMS is to help identify the extent and sources of flood risk facing the county and outline the approach to managing the risk.

1.5 The overarching aim of the strategy is to better the understanding, communication and management of flood risk in Cumbria through viable, sustainable and coordinated approaches for the benefit of people, property, land and the environment, both now and in the future.

1.6 The draft Cumbria LFRMS has five policy objectives, which are:

1. Reduction in flood risk to the people of Cumbria.
2. Increased knowledge and awareness of the factors affecting flood risk across Cumbria.
3. Ensure that flood risk management is integrated within the planning process in Cumbria.
4. Facilitate close partnership working between all risk management authorities.
5. Improve community resilience through awareness of flood risk.

1.7 Within the Strategy, a series of county-wide and localised actions have been set out, each designed to meet the above objectives. It is these actions, and alternatives, that shall be assessed later in this Report to determine the possible impacts of the Strategy on European sites.

Legislative context

1.8 Under the Conservation of Habitats and Species Regulations 2017 (as amended) (more commonly referred to as the 'Habitats Regulations'), a network of sites has been designated for the purposes of nature conservation. This network comprises sites known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA). SACs are designated for the protection of habitats and non-avian animal species of conservation concern. SPAs are designated to protect rare or vulnerable species of bird, as well as all regularly occurring migratory bird species. Collectively, SACs and SPAs are often still referred to as 'European sites', as they used to form part of a European-wide network of such sites before Brexit. Now they form part of the National Site Network. Paragraph 181 of the National Planning Policy Framework[1] also clarifies that, in England, the HRA process is also applied to another category of internationally important wildlife site called Ramsar sites.

[1] https://www.gov.uk/guidance/national-planning-policy-framework

1.9 The Habitats Regulations require that any plan or project which is not directly connected with or necessary to the conservation of a European site, and which is likely to have a significant effect on such as site, must be subject to an 'appropriate assessment' of the implications for the conservation objectives of that site. Generally, such plans or projects may only be approved if the 'competent authority' has ascertained, by means of an appropriate assessment, that there will be no adverse effect on the integrity of the European site(s).

1.10 The procedure to be applied is known as 'Habitats Regulations Assessment'[2].

1.11 The UK left the European Union (EU) on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 (the 'Withdrawal Act'). While the UK is no longer a member of the EU, a requirement for Habitats Regulations Assessment will continue as set out in the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[3].

1.12 The competent authority that carries out the HRA is required to apply the precautionary principle[4] to European sites and can only grant consent for a plan or project once it has been ascertained that it will not adversely affect the integrity of the site concerned. However, even if significant adverse effects on the designated site are predicted, and in the absence of a suitable alternative solution, the plan or project can still be carried out in exceptional circumstances where there are deemed sufficient imperative reasons of over-riding public interest (IROPI). In such cases, however, compensatory measures must be implemented.

1.13 Since the Cumbria LFRMS constitutes a 'plan' within the meaning of the Habitats Regulations, it is necessary for a HRA to be completed. This must establish whether the adoption of the Strategy could result in likely significant effects, or adverse effects on the integrity of any European sites.

Structure and purpose of this document

1.14 While the various steps involved in the assessment process must be carried out by a competent authority, consultants or project proponents may provide the information that the competent authority requires to undertake an HRA. This Statement to Inform HRA is therefore written to provide the competent authority – Cumbria County Council – with the information needed to conduct a HRA of the Cumbria LFRMS. It has been prepared with regard to best scientific knowledge and an examination of potential impacts of the LFRMS on European Sites.

1.15 It is structured as follows:

- Section 1 – provides an introduction to the Cumbria LFRMS and the requirements of the Habitats Regulations;
- Section 2 – describes the methodology adopted during the HRA of the Cumbria LFRMS;
- Section 3 – sets out the scope of the HRA and presents baseline information upon which the assessment is based;
- Section 4 – presents the test of likely significant effects on European sites from the Cumbria LFRMS; and,
- Section 5 – conclusion.

1.16 Ultimately, the purpose of this document is to provide a written record of a robust, legally-compliant Habitats Regulations Assessment of the Cumbria Local Flood Risk Management Strategy.

Quality assurance

1.17 This document has been prepared in accordance with the AECOM Integrated Management System (IMS). Our IMS places emphasis on professionalism, technical excellence, quality, as well as covering health,

[2] In the past, the term 'appropriate assessment' has been used to describe both the overall process and a particular stage of that process. The term 'Habitat Regulations Assessment' has come into use in order to refer to the process that leads to an appropriate assessment, thus avoiding confusion. Throughout this document, HRA is used to refer to the overall procedure required by the Habitats Regulations.
[3] These don't replace the 2017 Habitats Regulations but are just another set of amendments.
[4] The precautionary principle, which is referenced in Article 191 of the Treaty on the Functioning of the European Union, has been defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005) as: *"When human activities may lead to morally unacceptable harm* [to the environment] *that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. The judgement of plausibility should be grounded in scientific analysis".*

safety, environment, and sustainability management. All AECOM staff members are committed to maintaining our accreditation to those parts of BS EN ISO 9001:2015 and 14001:2015, as well as BS OHSAS 18001:2007 that are relevant to a consultancy service.

1.18 All ecologists involved in the HRA of Cumbria LFRMS are members, at the appropriate level, of the Chartered Institute of Ecology and Environmental Management (CIEEM) and adhere to their strict Code of Professional Conduct.

2. Methodology

Sources of guidance and information

2.1 In addition to those sources specifically referenced throughout this document, the following sources of guidance and information were used when carrying out the HRA of the Cumbria LFRMS:

- European Commission guidance Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive (EC, 2021);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018);
- general guidance on HRA published by the UK government in February 2021 (https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site);
- the HRA of the 2015 Cumbria Local Flood Risk Management Strategy (Cumbria County Council, 2015a);
- Conservation Objectives and published Supplementary Advice on Conservation Objectives for European sites in Cumbria available from Natural England Designated Sites View (https://designatedsites.naturalengland.org.uk/); and,
- Defra Magic Map (https://magic.defra.gov.uk/magicmap.aspx).

Relevant case law

2.2 Although the UK is no longer part of the European Union (EU), a series of prior rulings of the Court of Justice of the European Union (CJEU) are relevant and have been considered when preparing this document. These rulings and their implications for the HRA of the Cumbria LFRMS are summarised in **Table 1**.

Table 1. Case law relevant to the HRA of the Cumbria LFRMS

Case	Ruling	Relevance to the HRA of the Cumbria LFRMS
People Over Wind and Sweetman v Coillte Teoranta (C-323/17)	The ruling of the CJEU in this case requires that any conclusion of 'no likely significant effect' on a European site must be made prior to any consideration of measures to avoid or reduce harm to the European site. The determination of likely significant effects should not, in the opinion of the CJEU, constitute an attempt at detailed technical analyses. This should be conducted as part of the appropriate assessment.	It is necessary to distinguish between those measures which are intended to avoid or reduce harmful effects on a European site and those elements of the Cumbria LFRMS that may incidentally provide some degree of mitigation, but which are intrinsic or essential parts of the Strategy itself. Intrinsic parts of the Strategy can be considered at the screening stage of HRA. If it can be concluded that a specific element of the Cumbria LFRMS will have no adverse effect on any European site, in the absence of mitigation, it will be possible to conclude 'no likely significant effects', and that element will be 'screened out' of appropriate assessment.
Waddenzee (C-127/02)	The ruling in this case clarified that appropriate assessment must be conducted using best scientific knowledge, and that there must be no reasonable scientific doubt in the conclusions drawn. The Waddenzee ruling also provided clarity on the definition of 'significant effect', which would be any effect from a plan or project which is likely to undermine the conservation objectives of any European site.	This ruling should be read in conjunction with Case C-6/04, below.
Commission of the European Communities v UK (C-6/04)	The opinion of Advocate-General Kokott of 9th June 2005 in this case clarified that, while there must be no reasonable scientific doubt in the conclusions of appropriate assessment, "*it would… hardly be proper to require a greater level of detail in preceding plans [rather than planning applications]*	A balance must be achieved when carrying out HRA of plans such as the LFRMS. In certain cases, it will be necessary for assessment to be carried out in greater detail at subsequent stages (e.g. during the design and consenting stage(s) of a particular project).

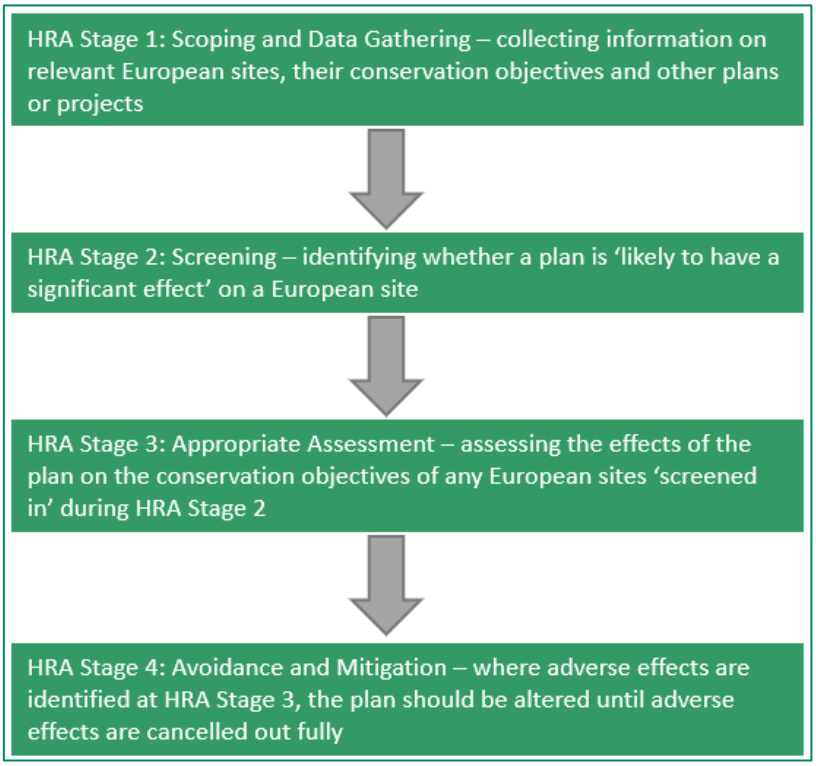
Case	Ruling	Relevance to the HRA of the Cumbria LFRMS
	or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated at one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure".	
Holohan and Others v An Bord Pleanála (C-461/17)	The conclusions of the Court in this case were that consideration must be given during appropriate assessment to: • effects on qualifying habitats and/or species of a SAC or SPA, even when occurring outside of the boundary of a European site, if these are relevant to the site meeting its conservation objectives; and, • effects on non-qualifying habitats and/or species on which the qualifying habitats and/or species depend and which could result in adverse effects on the integrity of the European site.	This relates to the concept of 'functionally-linked habitat', i.e. areas outside of the boundary of a European site which supports its qualifying feature(s). In addition, consideration must be given to non-qualifying features upon which qualifying habitats and/or species rely. These concepts must be included and addressed in the HRA of the LFRMS, to the extent possible for a high-level plan of this type.
T.C Briels and Others v Minister van Infrastructuur en Milieu (C-521/12)	The ruling of the CJEU in this case determined that compensatory measures cannot be used to support a conclusion of no adverse effect on site integrity.	Compensation can only be considered at the relevant stage of HRA and not during appropriate assessment. Compensation must be delivered when appropriate assessment concludes that there will be adverse effects on site integrity.
Sweetman v An Bord Pleanála (C-258/11)	The CJEU ruled that the protection afforded to a European site applies once that site has been formally identified as a candidate European site. Furthermore, the court also concluded that where a plan or project will lead to the permanent loss of a priority habitat (i.e. one which is listed on Annex I of the Habitats Directive[5]) and which is a qualifying feature of a European site, the view should be taken that such a plan or project will adversely affect the integrity of that site.	A candidate SAC / proposed SPA receives the same legal protection as a fully designated site and must be treated as such by HRA. The loss of even a very small area of priority habitat listed on Annex I of the Habitats Directive, where such habitat is a qualifying feature of an SAC, will almost certainly be considered to result in adverse effects on the integrity of that site.

Overview of the HRA process

2.3 **Diagram 1** illustrates the stages of HRA according to Ministry of Housing, Communities and Local Government guidance (https://www.gov.uk/guidance/appropriate-assessment). The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations and any relevant changes to a plan until no significant adverse effects remain.

[5] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, more commonly referred to as the European Union 'Habitats Directive'.

Diagram 1. Stages of HRA



2.4 A summary of the four steps is provided under the following sub-headings.

HRA Stage 1 – scoping and data gathering

2.5 It is necessary to identify which European sites may be relevant to the HRA by virtue of there being potential pathways for impacts arising from a plan.

2.6 There is no pre-defined guidance that dictates the physical scope of a HRA of a plan document in all circumstances. Therefore, in considering the geographic scope of the HRA for the Cumbria LFRMS, the source-pathway-receptor model was used, rather than simply relying on arbitrary 'zones'. The source-pathway-receptor approach is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no likelihood for an effect to occur. Where an impact is predicted to occur, this does not necessarily imply that the effect is significant.

2.7 To further clarify, a source would be an impact which arises due to an action contained within the LFRMS. This could be, for example, waterborne pollution generated during construction activities. A pathway is a connection between the impact source and a European site. An example would be the aforementioned pollution travelling downstream via a watercourse. In the case of HRA, the receptor is a qualifying feature of a European site, or something upon which a qualifying feature relies (e.g. habitat). Accordingly, waterborne pollution (source) generated during construction may travel several hundred metres (or further) downstream via a watercourse (pathway) to the spawning habitat of a fish species which is a qualifying feature of a European site (receptor). Should the impact be sufficiently large, this may cause reduced breeding success of the fish, and have a significant effect, for example where this causes the favourable conservation status of the species to be lost.

2.8 As the Cumbria LFRMS is concerned only with catchments which lie within the county, using the source-pathway-receptor approach, it was considered that only European sites within Cumbria could be linked to any action delivered under the Strategy. Therefore, the scope of this HRA was limited to European sites entirely or partly within the county boundary of Cumbria.

2.9 Once the scope of the HRA has been established, data gathering can take place. This involves collecting information on relevant European sites, their conservation objectives, and any known threats or pressures acting on the sites.

2.10 The scoping and data gathering stages of the HRA of the Cumbria LFRMS are reported in **Section 3** of this document.

HRA Stage 2 – screening

2.11 Following scoping and data gathering, it is necessary to establish whether an appropriate assessment is required. This is often referred to as 'HRA screening'. The purpose of HRA screening is to determine, in view of best available scientific knowledge, whether a plan, either alone or in-combination with other plans or projects, could have likely significant effects on the qualifying features of a European site. For this purpose, and as a result of case law (see Table 1) 'likely' means 'possible'. Moreover, a 'significant' effect is one which could undermine the conservation objectives of a European site (SNH, 2015).

2.12 In relation to the Cumbria LFRMS, the objective is therefore to 'screen out' those elements of the Strategy for which it can be stated, without any detailed appraisal, that significant effects are unlikely on any European site.

2.13 Where likely significant effects cannot be excluded, or if there is reasonable scientific doubt, then an action is 'screened in' and the next stage in the process must be initiated and a detailed appropriate assessment undertaken.

2.14 The screening stage of the HRA of the Cumbria LFRMS is reported in **Section 4** of this document.

HRA Stage 3 – appropriate assessment

2.15 Where it is determined that a conclusion of 'no likely significant effect' cannot be drawn, the analysis must proceed to the next stage of HRA, known as 'appropriate assessment'. Case law has clarified that 'appropriate assessment' is not a technical term. In other words, there are no particular technical analyses, or level of technical analysis, that are classified by law as belonging to appropriate assessment rather than determination of likely significant effects.

2.16 By virtue of the fact that it follows the screening process, there is a clear implication that the analysis will be more detailed than completed at the previous stage. One of the key considerations during appropriate assessment is whether there is available mitigation that would entirely address the potential effect(s). In practice, the appropriate assessment would take any actions in the Strategy that could not be dismissed following the high-level screening analysis and assess the potential for an effect in more detail, with a view to concluding whether there would actually be an adverse effect on site integrity (in other words, disruption of the coherent structure and function of the European site(s)).

HRA Stage 4 – avoidance and mitigation

2.17 Where necessary, measures are recommended for incorporation into the Cumbria LFRMS in order to avoid or mitigate adverse effects on European sites. There is considerable precedent concerning the level of detail that a land use plan document needs to contain regarding mitigation for recreational impacts on European sites. The implication of this precedent is that it is not necessary for all measures that will be deployed to be fully developed prior to adoption of the Cumbria LFRMS, but the Strategy must provide an adequate policy framework within which these measures can be delivered.

2.18 No significant adverse effects from the Cumbria LFRMS on any European site were identified by this HRA. Consequently, no requirement for Stage 4 of the HRA process was required.

A proportionate assessment

2.19 HRA of projects (as opposed to plans) often requires bespoke survey work and novel data generation in order to accurately determine the significance of effects on European sites. In other words, it is necessary to look beyond the risk of an effect occurring, to a justified prediction of the actual likely effect and to the development of avoidance or mitigation measures.

2.20 Advocate-General Kokott[6] has commented regarding HRA in a multi-tiered planning system that "*it would …hardly be proper to require a greater level of detail in preceding plans* [rather than planning applications] *or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated on one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure*" [emphasis added].

2.21 In other words, there is a tacit acceptance that HRA can be tiered and that all impacts are not necessarily appropriate for consideration to the same degree of detail at all tiers. For example, when considering loss of functionally-linked habitat, different levels of investigation are appropriate to land use plans than to subsequent planning applications. The fullest level of detail would be necessary for planning applications as that is the last level at which impacts on European sites can be investigated. In contrast, detailed surveys would normally be disproportionate for a land use plan, given that European sites can be protected in the absence of such surveys by having a strong policy dictating the need for further investigation and prohibiting development until any such surveys are complete.

2.22 In any LFRMS, there are numerous actions for which there is a limit to the degree of assessment that is possible at this level. This is either because:

2.23 the action in question does not contain any specific details describing what will be delivered or where and can therefore literally not be assessed in detail at the plan level; or,

2.24 development of a specific type is identified but the nature of the potential impacts are dependent on exactly how the development will be designed and/or constructed and therefore cannot be assessed in detail at the plan level.

2.25 For example, NatureScot has published guidance (SNH, 2015) that indicates a measure or initiative or measure in a higher tier plan can be screened out without further analysis if:

- they are intended to protect the natural environment;
- they will not themselves lead to development or other change;
- they make provision for change but could have no conceivable effect on a European site;
- they make provision for change but could have no significant effect on a European site; or,
- effects on any particular European site cannot be identified because the measures are too general or lack any spatial definition.

2.26 In these cases, the HRA focusses on setting down-the-line requirements for more detailed assessment at the project level. This is included in the plan to ensure that whatever proposals come forward, they will not result in adverse effects on the integrity of any European site.

2.27 This is the approach which has been taken in this HRA of the Cumbria LFRMS.

In-combination assessment

2.28 In-combination (i.e. cumulative) effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location (CIEEM, 2019).

2.29 It is a requirement of the Habitats Regulations that the impacts of any plan are not considered in isolation but in combination with other plans and projects that may also be affecting the European site(s) in question.

2.30 When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation; i.e. to ensure that those projects or plans (which in themselves may have minor impacts) are not simply dismissed on that basis but are evaluated for any cumulative contribution they may make to an overall significant effect. In practice, in-combination assessment is therefore of greatest relevance when the plan or action would otherwise be screened out because its individual contribution is inconsequential.

[6] Opinion of Advocate General Kokott, 9th June 2005, Case C-6/04. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland, paragraph 49. http://curia.europa.eu/juris/document/document.jsf?docid=58359&doclang=EN.

2.31 However, it is neither practical nor necessary to assess the in-combination effects of the LFRMS within the context of all other plans and projects within the region. No specific projects were identified by AECOM or Cumbria County Council which could act in-combination with the LFRMS to result in significant effects. For the purposes of this HRA, therefore, the in-combination assessment focussed on the relevant plans identified in the Strategic Environmental Assessment (SEA) Environmental Report of the LFRMS (Cumbria County Council, 2015b). These are described in **Table 2**.

Table 2. Description of plans considered for in-combination effects

Plan	Description
Local plans	
United Utilities Water Resources Management Plan 2019	This Plan defines the strategy to achieve a long-term, best value and sustainable plan for water supplies in the north-west of England. This Plan will ensure that there is an adequate supply of water from 2020 to 2045. The HRA for the Plan concluded that the Plan will have no adverse effects, alone or in-combination on any European sites with scheme-level mitigation and avoidance measures established which will be available, achievable and likely to be effective.
Cumbria Minerals and Waste Local Plan	This Plan aims to achieve development of Cumbria while also balancing the need to protect Cumbria's natural and built environment. The HRA for the Plan concluded that the Plan will have no adverse effects on any European sites.
Cumbria Transport Plan Strategy 2011-2026	This Plan aims to have a transport system and highway network in Cumbria that is safe, reliable, available, accessible and affordable for all which supports the following local priorities: • safe, strong and inclusive communities; • health and well-being throughout life; • a sustainable and prosperous economy; • effective connections between people and places; and, • world class environmental quality and in doing so minimises carbon emissions.
Cumbria Biodiversity Action Plan (BAP)	The Cumbria BAP presents a vision for Cumbria which is rich or richer in wildlife than it is today. To realise this vision the plan states the need for a great deal of thought, commitment and working together in partnership over the future. It will require stakeholders to prioritise and set milestones against which to measure environmental progress. Specifically, the objectives of the Cumbria BAP are essentially three-fold, to: • implement national biodiversity targets at the local level; • address local priorities not identified in the UK plan; and, • engender greater awareness and understanding of Cumbria's biodiversity and wider participation in its conservation.
Northumbria River Basin District River Management Plan	This plan fulfils the requirements of the Water Framework Directive (WFD) and contributes to the objectives of other EU directives. The purpose of this river basin management plan is to provide a framework for protecting and enhancing the benefits provided by the water environment. This plan is an update of and replaces the 2009 river basin management plan.
North West River Basin Management Plan	This plan fulfils the requirements of the Water Framework Directive (WFD) and contributes to the objectives of other EU directives. The purpose of this river basin management plan is to provide a framework for protecting and enhancing the benefits provided by the water environment. This plan is an update of and replaces the 2009 river basin management plan. This plan was to updated in 2021 but it has not been published yet.
River Derwent/River Kent and Leven/River Tees/River Tyne Catchment Flood Management Plans (CFMPs)	CFMPs help us to understand the scale and extent of flooding now and in the future and set policies for managing flood risk within the catchment.
Solway Tweed River Basin Management Plan	The River Basin Management Plan for the Solway Tweed river basin district provides the first comprehensive framework for co-ordinating and integrating the management of the water environment in this area. It covers the next 18 years until 2027 but updated plans, including reviews of progress, will be published in 2015 and 2021. A target has been set of 55% of all waters in the Solway Tweed river basin district being in good condition by 2015, increasing to 92% in 2027. This plan was to updated in 2021 but it has not been published yet.
National plans	

Plan	Description
Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services	The strategy presents a comprehensive picture of how the Government are implementing their international and EU commitments with regard to biodiversity. It sets out the strategic direction for biodiversity policy, ascertains priority areas for intervention and details a number of measures through which progress could be tracked.
A Green Future: Our 25 Year Plan to Improve the Environment	This plan will assist the natural world to regain and retain good health. The plan is aiming to reform the agriculture and fisheries management, and how land, rivers and seas are cared for. By adopting this plan, the following will be achieved: • clean air; • clean and plentiful water; • thriving plants and wildlife; • a reduced risk of harm from environmental hazards such as flooding and drought; • using resources from nature more sustainably and efficiently; and, • enhanced beauty, heritage and engagement with the natural environment. In addition environmental pressures will be managed by: • mitigating and adapting to climate change; • minimising waste; • managing exposure to chemicals; and, • enhancing biosecurity.
Working with the Grain of Nature: a Biodiversity Strategy for England	This report references how the creation or restoration of habitats can help flood risk management. It is likely that through wetland creation and managed realignment it will be possible to provide washland storage to help flood alleviation of urban areas, and as compensation for freshwater wetland habitats lost due to coastal squeeze. In the process biodiversity targets set for flood defence operating authorities applicable to all flood defence capital schemes will result in net gains of habitats, such as chalk rivers and saltmarsh.
Future Water: The Government's Water Strategy for England	This strategy sets out how Government wishes for the water sector to look by 2030, and the measures needed to reach the goals. The Government wishes for there to be a sustainable delivery of secure water supplies and an improved and protected water environment.

3. Scoping and data gathering

Impact sources

3.1 When applying the source-pathway-receptor approach, the potential impacts which could arise from the policy actions were considered. As previously discussed, the Cumbria LFRMS contains five policy objectives relating to the activities to be undertaken by the Lead Local Flood Authority (LLFA). These policy objectives are as follows:

- Policy objective 1: Reduction in flood risk to the people of Cumbria.
- Policy objective 2: Increased knowledge and awareness of the factors affecting flood risk across Cumbria.
- Policy objective 3: Ensure that flood risk management is integrated within the planning process across Cumbria.
- Policy objective 4: Facilitate close partnership working between all risk management authorities.
- Policy objective 5: Improve community resilience through awareness of flood risk.

3.2 Although the specific impacts which could arise may differ, broadly speaking, development promoted by the actions contained within the LFRMS could give rise to various categories of impact. The broad categories of impact sources which could have an impact are set out in **Table 3**.

Table 3. Categories of impact source which could arise from the Cumbria LFRMS actions

Impact category	Brief description
Direct loss of habitat	The direct loss of habitat from within the boundary of a European site. This may include the loss of a habitat type which is itself a qualifying feature of a site, or the loss of habitat that is used by qualifying species for commuting, foraging and/or sheltering.
Loss of functionally-linked habitat	The loss of habitat which is outside of the boundary of a European site, but which is critical to its functioning. For example, the loss of habitat outside of an SPA which is used for foraging purposes by qualifying bird species which nest within the SPA.
Waterborne pollution	Including, for example, suspended sediment or run-off of water containing other pollutants such as hydrocarbons or chemicals. Effluent discharges would also be included in this category.
Airborne pollution	This encompasses both dust (i.e. particles of sufficiently large size to coat vegetation and interfere with photosynthesis) and atmospheric pollutants that can be toxic to vegetation or contribute to nitrogen deposition (and thus eutrophication). The latter mainly constitutes oxides of nitrogen (NOx) associated with combustion such as vehicle exhausts, and ammonia (NH_3) associated particularly with industrial processes and agriculture, but also with vehicle exhausts.
Hydrological changes	Impacts which alter the hydrological conditions either within a European site or in an area used by the qualifying features of a European site. For example, reduced flows in a watercourse due to impoundment, or changes to groundwater flows or volumes due to abstraction. These changes can have multiple effects on habitats and species.
Disturbance of qualifying species	This could be physical disturbance, for example due to the movement of vehicles in proximity to qualifying species, or due to noise and/or vibration. The latter may occur at greater distances. Disturbance could arise either during the construction or operational phase of a development. Recreational disturbance caused by increased human presence is also included in this category.
Barriers and/or displacement	Barriers to the movement of qualifying species, which can either be physical (for example a dam in a river) or physiological (for example, the attraction of migratory fish towards the outflow of a hydro-electric scheme). Displacement may also occur due to the presence of new infrastructure (for example a wind farm).
Injury or mortality	The direct injury or mortality of a qualifying species, either during the construction or operation of a new development. For example, injury or death of a bird due to collision with an operational wind turbine.
Changes to predator-prey dynamics	This could arise in multiple ways but such changes could have detrimental impacts on qualifying species. An example may be the installation of perching sites (e.g. new security fencing around infrastructure) in an otherwise open area of habitat used by nesting waders. The provision of features which can be used for perching by raptors can increase predation rates of nesting waders.
Spread of invasive non-native species	Invasive non-native species can have detrimental impacts on native species and habitats. Their spread can occur during construction and operation of a development, and via multiple pathways (for example via watercourses or on the treads of construction machinery).

Impact pathways

3.3 In order for an impact to have an effect on a qualifying feature of a European site, a pathway between the impact source and that feature must exist.

3.4 For each of the types of impact which could arise (as set out in **Table 3**) the maximum distance at which an effect could occur was assessed based on the pathway(s) by which such impacts could reach a European site or its qualifying feature(s). These 'impact pathway buffers' were based on best available research, wherever possible. The adopted impact pathway buffers are set out in **Table 4**.

Table 4. Impact pathway buffers

Impact category	Buffer distance
Direct loss of habitat	Within European site boundary.
Loss of functionally-linked habitat	Depends on the species in question. Natural England (2019) suggest that certain species of geese may forage up to 15-20 km from designated sites for which they are qualifying features. This is likely to be the largest distance at which functionally-linked habitat may be located from a designated site. Impact risk zones (IRZs) are based on the maximum foraging distance of various bird species.
Waterborne pollution	No buffer used – relies on their being a hydrological connection to a European site according to the source-pathway-receptor model.
Airborne pollution	• 50-500 m for dust generation. • 200 m for emissions from road traffic.
Hydrological changes	No buffer used – relies on their being a hydrological connection to a European site according to the source-pathway-receptor model.
Disturbance of qualifying species	500 m for general noise and/or visual disturbance.
Barriers and/or displacement	Not possible to set buffer. Depends on movements of species, which may be very long-distance for those which migrate.
Injury or mortality	Injury or mortality only likely to occur within European site boundary or when species are using functionally-linked habitat. Therefore see row above relating to loss of functionally-linked habitat.
Changes to predator-prey dynamics	Difficult to set a buffer distance. Effects likely to be largest (most significant) where impact occurs within European site boundary. Potential for effects (which may be significant) in functionally-linked habitat.
Spread of invasive non-native species	Generally within 100 m, except where hydrological connectivity could result in spread further afield.

Relevant European sites scoped into HRA

3.5 The likely zone of impact (also referred to as the likely 'zone of influence') of a plan is the geographic extent over which significant ecological effects are likely to occur as a result of the actions promoted by it. The ZoI of the Cumbria LFRMS was taken to encompass all seven river catchments which lie within the county and which are therefore covered by the LFRMS:

- Derwent;
- Eden and Esk;
- South West Lakes;
- Kent and Leven;
- Lune;
- Tees; and,
- Tyne.

3.6 All development or other works delivered under the Cumbria LFRMS will occur within these catchments. Given the likely nature of such activities, which will be associated with waterbodies, it is not considered that there is any possibility of significant effects occurring outside of these catchment areas.

3.7 Relevant European sites scoped into this HRA were therefore all of those which lie wholly or partly within the catchment areas listed above. A summary of the 39 European sites scoped into this HRA on this basis is provided in **Table 5**. Their locations are shown on **Figure 1.**

Table 5. Summary of European sites scoped into HRA

Site name	Qualifying feature(s)
Asby Complex SAC	• Calcium-rich nutrient-poor lakes, lochs and pools • European dry heaths • Dry grasslands and scrublands on chalk or limestone • Purple moor-grass *Molinia caerulea* meadows • Alkaline fens • Calcareous fens* • Hard-water springs depositing lime* • Limestone pavements* • Geyer's whorl snail *Vertigo geyeri* • Slender green feather-moss *Drepanocladus (Hamatocaulis) vernicosus*
Bolton Fell Moss SAC	• Degraded raised bog (still capable of natural regeneration)
Border Mires, Kielder-Butterburn SAC	• Blanket bogs* • Hard-water springs depositing lime* • European dry heaths • Wet heathland with cross-leaved heath *Erica tetralix* • Transition mires and quaking bogs
Borrowdale Woodland Complex SAC	• Siliceous rocky slopes with chasmophytic vegetation • Old sessile oak woods with *Ilex* and *Blechnum* in the UK • Bog woodland*
Clints Quarry SAC	• Great crested newt *Triturus cristatus*
Cumbrian Marsh Fritillary Site SAC	• Marsh fritillary *Eurodryas aurinia*
Drigg Coast SAC	• Estuaries • Mudflats and sandflats not covered by seawater at low tide • *Salicornia* and other annuals colonising mud and sand • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) • Embryonic shifting dunes • Shifting dunes along the shoreline with *Ammophila arenaria* ('White dunes') • Fixed dunes with herbaceous vegetation ('Grey dunes')* • Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)* • Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*) • Humid dune slacks
Duddon Estuary Ramsar site	• Assemblage of migratory waders - Passage • Knot *Calidris canutus islandica* - Wintering • Natterjack toad *Epidalea calamita* • Pintail *Anas acuta* - Wintering • Redshank *Tringa totanus* - Wintering • Waterbird assemblage - Wintering • Wetland invertebrate assemblage • Wetland plant assemblage
Duddon Mosses SAC	• Active raised bogs* • Degraded raised bogs (still capable of natural regeneration)
Esthwaite Water Ramsar site	• Mesotrophic lake • Slender naiad *Najas flexilis* • Wetland invertebrate assemblage • Wetland plant assemblage
Helbeck and Swindale Woods SAC	• *Tilio-Acerion* forests of slopes, screes and ravines*
Irthinghead Mires Ramsar site	• Active blanket bog • Assemblage of *Sphagnum* mosses • Spider *Eboria caliginosa* • Wetland plant assemblage
Lake District High Fells SAC	• Oligotrophic to mesotrophic standing water with vegetation • Northern Atlantic wet heaths with *Erica tetralix* • European dry heaths • Alpine and boreal heaths

Site name	Qualifying feature(s)
	• *Juniperus communis* formations on heaths or calc grasslands • Siliceous alpine and boreal grasslands • Spp. rich *Nardus* grass on siliceous substrate in upland areas • *Hydrophilous* tall herb fringe communities of uplands • Blanket bogs* • Alkaline fens • Siliceous scree of the montane to snow levels (*A. alpinae*) • Calcareous rocky slopes with *chasmophytic* vegetation • Siliceous rocky slopes with *chasmophytic* vegetation • Old sessile oak woods with *Ilex* and *Blechnum* in the UK • Slender green feather-moss
Moor House-Upper Teesdale SAC	• Hard oligo-mesotrophic waters with benthic veg of *Chara* spp. • European dry heaths • Alpine and boreal heaths • *Juniperus communis* formations on heaths or calc grasslands • Calaminarian grasslands of the *Violetalia calaminariae* • Siliceous alpine and boreal grasslands • Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*), (note that this includes the priority feature "important orchid rich sites") • *Molinia* meadows on calcareous, peat or clay-silt soil • Hydrophilous tall herb fringe communities of uplands • Mountain hay meadows • Blanket bogs* • Petrifying springs with tufa formation (*Cratoneurion*)* • Alkaline fens • Alpine pioneer formations of *Caricion bicoloris-atrofuscae** • Siliceous scree of the montane to snow levels • Calcareous screes of the montane to alpine levels • Calcareous rocky slopes with *chasmophytic* vegetation • Siliceous rocky slopes with *chasmophytic* vegetation • Limestone pavements* • Snail *Vertigo genesii* • Marsh saxifrage *Saxifraga hirculus*
Morecambe Bay Ramsar site	• Assemblage of seabirds, gulls and terns - Breeding • Bar-tailed godwit *Limosa lapponica* - Wintering • Curlew *Numenius arquata* - Wintering • Dunlin *Calidris alpina* - Wintering • Grey plover *Pluvialis squatarola* - Wintering • Knot - Wintering • Oystercatcher *Haematopus ostralegus* - Wintering • Pink-footed goose *Anser brachyrhynchus* - Passage • Pintail - Wintering • Redshank - Wintering • Ringed plover *Charadrius hiaticula* - Passage • Shelduck *Tadorna tadorna* - Wintering • Turnstone *Arenaria interpres* - Breeding • Waterbird assemblage - Wintering
Morecambe Bay SAC	• Sandbanks which are slightly covered by sea water all the time • Estuaries • Mudflats and sandflats not covered by seawater at low tide • Coastal lagoons* • Large shallow inlets and bays • Reefs • Perennial vegetation of stony banks • *Salicornia* and other annuals colonising mud and sand • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) • Embryonic shifting dunes • Shifting dunes along the shoreline with *Ammophila arenaria* ('White dunes')

Site name	Qualifying feature(s)
	• Fixed dunes with herbaceous vegetation ('Grey dunes')* • Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)* • Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*) • Humid dune slacks • Great crested newt
Morecambe Bay and Duddon Estuary SPA	• Bar-tailed godwit • Black-tailed godwit *Limosa limosa islandica* • Common tern *Sterna hirundo* • Curlew • Dunlin • Golden plover *Pluvialis apricaria* • Grey plover *Pluvialis squatarola* • Herring gull *Larus argentatus* • Knot • Lesser black-backed gull *Larus fuscus* • Lesser black-backed gull • Little egret *Egretta garzetta* • Little tern *Sterna albifrons* • Mediterranean gull *Larus melanocephalus* • Oystercatcher • Pink-footed goose • Pintail • Redshank • Ringed plover • Ruff *Philomachus pugnax* • Sanderling *Calidris alba* • Sandwich tern *Sterna sandvicensis* • Seabird assemblage • Shelduck • Turnstone • Waterbird assemblage • Whooper swan *Cygnus cygnus*
Morecambe Bay Pavements SAC	• Hard oligo-mesotrophic waters with benthic veg of *Chara* spp. • European dry heaths • *Juniperus communis* formations on heaths or calc grasslands • Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*), (note that this includes the priority feature "important orchid rich sites") • Calcareous fens with *C. mariscus* and species of *C. davallianae** • Limestone pavements* • *Tilio-Acerion* forests of slopes, screes and ravines* • Old sessile oak woods with *Ilex* and *Blechnum* in the UK • Taxus *baccata* woods of the British Isles* • Snail *Vertigo angustior*
Naddle Forest SAC	• Northern Atlantic wet heaths with *Erica tetralix* • European dry heaths • Old sessile oak woods with *Ilex* and *Blechnum* in the UK
North Pennine Dales Meadows SAC	• *Molinia* meadows on calcareous, peat or clay-silt soil • Mountain hay meadows
North Pennine Moors SAC	• Northern Atlantic wet heaths with *Erica tetralix* • European dry heaths • *Juniperus communis* formations on heaths or calc grasslands • *Calaminarian* grasslands of the *Violetalia calaminariae* • Siliceous alpine and boreal grasslands • Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*), (note that this includes the priority feature "important orchid rich sites") • Blanket bogs* • Petrifying springs with tufa formation (*Cratoneurion*)*

Site name	Qualifying feature(s)
	• Alkaline fens • Siliceous scree of the montane to snow levels (*A. alpinae*) • Calcareous rocky slopes with *chasmophytic* vegetation • Siliceous rocky slopes with *chasmophytic* vegetation • H91A0 Old sessile oak woods with Ilex and Blechnum in the UK • S1528 Marsh saxifrage, Saxifraga hirculus
North Pennine Moors SPA	• Golden plover • Hen harrier *Circus cyaneus* • Merlin *Falco columbarius* • Peregrine *Falco peregrinus*
River Derwent and Bassenthwaite Lake SAC	• Oligotrophic to mesotrophic standing water with vegetation • Water courses of plain to montane levels with *R. fluitantis* • Marsh fritillary • Sea lamprey *Petromyzon marinus* • Brook lamprey *Lampetra planeri* • River lamprey *Lampetra fluviatilis* • Atlantic salmon *Salmo salar* • Otter *Lutra lutra* • Floating water-plantain *Luronium natans*
River Eden SAC	• Oligotrophic to mesotrophic standing water with vegetation • Water courses of plain to montane levels with *R. fluitantis* • Alluvial woods with *A. glutinosa*, *F. excelsior** • Freshwater crayfish *Austropotamobius pallipes* • Sea lamprey • Brook lamprey • River lamprey • Atlantic salmon • Bullhead *Cottus gobio* • Otter
River Ehen SAC	• Freshwater pearl mussel *Margaritifera margaritifera* • Atlantic salmon
River Kent SAC	• Water courses of plain to montane levels with *R. fluitantis* • Freshwater pearl mussel • Freshwater crayfish • Bullhead
Roudsea Wood and Mosses SAC	• Active raised bogs* • Degraded raised bogs (still capable of natural regeneration) • *Tilio-Acerion* forests of slopes, screes and ravines* • *Taxus baccata* woods of the British Isles*
Solway Firth SAC	• Sandbanks which are slightly covered by sea water all the time • Estuaries • Mudflats and sandflats not covered by seawater at low tide • Reefs • Perennial vegetation of stony banks • *Salicornia* and other annuals colonising mud and sand • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) • Fixed dunes with herbaceous vegetation ('Grey dunes')* • Sea lamprey • River lamprey
Solway Firth SPA	• Barnacle goose *Branta leucopsis* • Bar-tailed godwit • Curlew • Golden plover • Knot • Oystercatcher • Pink-footed goose • Pintail

Site name	Qualifying feature(s)
	• Redshank • Red-throated diver *Gavia stellata* • Ringed plover • Scaup *Aythya marila* • Waterbird assemblage • Whooper swan
South Solway Mosses SAC	• Active raised bogs* • Degraded raised bogs (still capable of natural regeneration)
Subberthwaite, Blawith and Torver Low Commons SAC	• Transition mires and quaking bogs • Depressions on peat substrates of the *Rhynchosporion*
Tarn Moss SAC	• Transition mires and quaking bogs
Tyne & Nent SAC	• Calaminarian grasslands of the *Violetalia calaminariae*
Ullswater Oakwoods SAC	• Old sessile oak woods with *Ilex* and *Blechnum* in the UK
Upper Solway Flats and Marshes Ramsar site	• Barnacle goose • Bar-tailed godwit • Curlew • Knot • Oystercatcher • Pink-footed goose • Pintail • Redshank • Scaup • Waterbird assemblage • Wetland animal assemblage • Whooper swan
Walton Moss SAC	• Active raised bogs* • Degraded raised bogs (still capable of natural regeneration)
Wast Water SAC	• Oligotrophic to mesotrophic standing water with vegetation
Witherslack Mosses SAC	• Active raised bogs* • Degraded raised bogs (still capable of natural regeneration)
Yewbarrow Woods SAC	• *Juniperus communis* formations on heaths or calc grasslands • Old sessile oak woods with *Ilex* and *Blechnum* in the UK • *Taxus baccata* woods of the British Isles*

* Denotes a priority habitat listed on Annex I of the Habitats Directive.

4. Test of likely significant effects

Screening results

4.1 A screening exercise was applied to the actions that will be addressed in the Cumbria LFRMS. The actions are outlined in **Appendix A**. The aim of the HRA screening stage is to:

- identify actions that, because of their nature, could not conceivably have a negative effect or are not suitable for assessment; and,
- identify actions that are necessary for the conservation management of European and Ramsar sites.

4.2 When carrying out the HRA screening, particular consideration was given to the possible pathways through which impacts may be transmitted to features contributing to the integrity of the European sites (e.g. via groundwater, air and river catchments). A risk-based approach involving the application of the precautionary principle was adopted in the assessment, such that a conclusion of 'no significant effect' was only reached where it was considered very unlikely, based on current knowledge and the information available, that a LFRMS action would have a significant effect on the integrity of a European site.

4.3 All of the actions of the Cumbria LFRMS were assessed and, at the LFRMS level, 208 actions were screened out of further assessment without there being any requirement for future consideration at lower tier(s) in the planning process (see **Appendix B**). These actions were screened out at this level for one or more of the following reasons:

- there are no European sites within the ZoI of the action area;
- there is no existing ecological pathway between the European site and the action area;
- the action is a desk-based exercise so does not involve any physical works;
- the action involves the implementation of sustainable drainage system (SuDS) features which are generally beneficial for the environment; and/or,
- actions are currently on-going so will have been assessed at project level already.

4.4 21 of the actions identified within the LFRMS (see **Appendix C**) could impact upon European sites depending on the precise detail of their design and how they are implemented at lower planning tiers; they could just as easily avoid any potential for effect on European sites depending on the decisions made regarding what specific initiatives to bring forward to meet each action and how to deliver them. At the LFRMS level, since further assessment is impossible until specific proposals are actually devised, the key question regarding these actions is whether the scope and definition of them in the Strategy is sufficiently broad as to provide the scheme designers flexibility to ensure that adverse effects on European sites could be avoided, or adequately mitigated. That further assessment once individual proposals are devised will be done at the project level, which is in line with Advocate General Kokott's advice on tiering of HRA and the use of down-the-line assessment at lower planning tiers (see **Paragraphs 2.19-2.27**).

Down-the-line assessment

4.5 As stated above and in **Appendix C**, the implementation of 21 of the actions contained within the Cumbria LFRMS could impact upon River Eden SAC, River Kent SAC, Morecambe Bay SAC, Morecambe Bay Ramsar site, River Derwent & Bassenthwaite Lake SAC, Borrowdale Woodland Complex SAC, Duddon Estuary Ramsar site and Drigg Coast SAC depending on what initiatives are actually brought forward to deliver those actions and the details of their design and construction. However, all 21 actions are sufficiently broadly defined at the LFRMS level that the potential for likely significant effects on the qualifying features of these sites is entirely dependent on how the schemes is taken forward for planning and detailed design. At this high-level plan stage, it is therefore not possible to determine which elements of these sites may be affected, if any, or whether the effects of the actions will be significant due to the uncertainty about where and how the actions will be implemented and the need for detailed design before impacts can be fully assessed. However, as the LFRMS does not constrain where or how the actions will be implemented, the description of the measure in the plan contains sufficient flexibility to enable the schemes to be devised and delivered in such a way as to avoid adverse effects on European sites. As such, the plan itself will not result in a likely significant effect on any European sites.

4.6 At the scheme level, depending on detailed design, mitigation measures may or may not prove necessary. Most types of actions that have been identified as having the potential to cause hazards would require a HRA as a matter of law or Government policy before they can be implemented. A HRA at this later stage will be able to identify more precisely the nature, scale or location of works associated with the action, and thus its potential effects. The Cumbria LFRMS makes it clear that before any actions in the plan are implemented, they must be subject to the requirements of the HRA and that any plans, projects or permissions required to implement the measures must undergo an 'appropriate assessment' if they are likely to have a significant effect.

4.7 Responsibility for Habitats Regulations Assessment of plans, projects or permissions required to implement the actions in this LFRMS remains with the competent authority. For example, any actions involving work on an ordinary watercourse would not be able to legally go ahead without consent from the LLFA under the Flood and Water Management Act 2010. The LLFA would be the competent authority in this case and could not agree to any actions that would have an adverse effect on any European sites. **Table 6** provides information on the types of actions, potential hazards and control measures that will avoid impact on European sites.

Table 6. Control measures for implementation in relation to actions that may affect European sites

Action	Potential hazards	Control measure
Connecting water bodies, improving flood plain connectivity	• Works may cause physical damage, disturbance and may cause turbidity and lead to smothering as the sediment settles.	• Existing habitat use must be considered and there is a need to ensure that implementation has regard for impacts on European sites through appropriate levels of survey, investigation and impact assessment. • Appropriate timing of works. • Follow established good practice. • Undertake HRA Scoping and Screening with advice from Natural England on all Surface Water Management Plans.
Flow manipulation, water level management	• Changes in water levels, changes in the flow or velocity regime and changes to the physical regime. • Habitat loss resulting from changes in the water environment.	

In-combination assessment

4.8 Local and national plans were assessed to determine the risk of in-combination likely significant effects arising from those plans and the Cumbria LFRMS. The plans listed in **Table 2** are either beneficial for the environment or their plan-level HRA (where available) has determined that there is no potential for likely significant effects on the qualifying features of European sites. Therefore there is no potential for the Cumbria LFRMS to act in-combination with any other currently identified plans or projects.

Mitigation

4.9 In addition to the control measures in Table 6, the following mitigation measures have been identified as potentially being necessary to prevent impacts to the European sites:

- pumping of the watercourse around the site to create a dry working area.; and,
- use of sedimats that could be located downstream of the works to prevent sediments from flowing downstream and all concrete surfaces to be washed prior to reinstating the flow of the watercourse.

4.10 However, the actual necessity for these measures cannot be confirmed until detailed design at lower planning tiers and they are therefore not relied upon in this HRA to support the conclusion of no likely significant effects, except in so much as they are standard approaches to construction in sensitive environments and show that mitigation measures are available if required. Further information is needed about the potential impacts and mitigation at the action areas to be able to fully assess these projects. However, this will be undertaken during consenting with an HRA for each project to be completed, in consultation with Natural England prior to granting consent.

5. Conclusion

5.1 At this high-level plan stage, the detail of where and how the actions contained within the Cumbria LFRMS will be implemented has not yet been developed. This assessment has therefore identified potential hazards associated with implementation of the actions in the LFRMS. Controls will be in place to identify any risks to European sites as the detail of the actions is developed. The LFRMS also states that before any actions in the plan are implemented, they must be subject to the requirements of the Habitats Regulations and that any plans, projects or permissions required to implement the actions must undergo an "appropriate assessment" if they are likely to have a significant effect.

5.2 In conclusion, the LFRMS and its actions are sufficiently broadly defined that the LFRMS will not cause likely significant effects on any European sites, alone or in-combination with other plans and projects. However for 21 actions (as outlined in **Table A.3**, **Appendix A**) HRA at lower tiers in the planning process will be needed to review the conclusion made in this document, on the basis of the information which is available at that time and which will be more detailed than currently available. This will be required on a project-by-project basis. The analysis of available mitigation measures, should they prove necessary once detailed design is completed, does not suggest that potential effects cannot be addressed. Therefore there is no requirement for this LFRMS to progress to the next stage of HRA, i.e. to appropriate assessment.

5.3 This conclusion does not remove the need for later HRA of any other plans, projects or permissions associated with, or arising out of, the actions identified in the LFRMS. Acceptance that the LFRMS is consistent, so far as can be ascertained, with the Habitats Regulations does not guarantee that any plan or project derived from the LFRMS will also be found consistent.

6. References

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6.3 Cumbria County Council (2015b). Local Flood Risk Management Strategy. Annex E Strategic Environmental Assessment (SEA) Environmental Report. March 2015. Available from: https://www.cumbria.gov.uk/planning-environment/flooding/local_flood_risk_management_strategy.asp.

6.4 EC (2021). Assessment of Plans and Projects Significantly Affecting European sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission Environment Directorate-General).

6.5 EC (2018). Commission Notice: Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Brussels, 21.11.2018 (2018) 7621 final.

6.6 Natural England (2019). Impact Risk Zones Guidance Summary. Sites of Special Scientific Interest Notified for Birds. Version 1.1, updated March 2019.

6.7 SNH (2015). Habitats Regulations Appraisal of Plans: Guidance for Plan-Making Bodies in Scotland. Version 3.0, January 2015. Available from: https://www.nature.scot/habitats-regulations-appraisal-plans-guidance-plan-making-bodies-scotland-jan-2015.

6.8 UNESCO (United Nations Educational, Scientific and Cultural Organisation) (2005). The Precautionary Principle. World Commission on the Ethics of Scientific Knowledge and Technology, UNESCO.

7. Figures

Figure 1 – European sites within the ZoI of Cumbria LFRMS

8. List of Acronyms and Abbreviations

AoR Area of Risk

BBC Barrow Borough Council

CBC Copeland Borough Council

CSR2 Compehensive Spending Review 2021-2027

CSR3 Compenhensive Spending Review 2027-2033

Defra Department of the Environment, Food & Rural Affairs

EA Environment Agency

EDC Eden District Council

ERT Eden Rivers Trust

HA Highways Authority

HRA Habitats Regulatios Assessment

ICM Integrated Catchment Model

LFRMS Local Flood Risk Management Strategy

LLFA Lead Local Flood Authority

LVT Lune Valley Trust

MSfWG Making Space for Water Group

NE Natural England

NFM Natural Flood Management

NH National Highways

PLP Property Level Protection

PVA Potentially Vulnerable Area

RMA Risk Management Authority

S19 Section 19 Flood Investigation Report

SAC Special Areas of Conservation

SWMP Surface Water Management Plan

SPA Special Protection Areas

SuDs Sustainable urban Drainage Systems

SWMP Surface Water Management Plan

UU United Utitilies

SuDS Sustainable urban Drainage Systems

WCRT West Cumbria Rivers Trust

YDNP Yorkshire Dales National Park

Appendix A Actions that will be undertaken by LLFA to reduce flood risk locally

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
Carlisle							
Carlisle (PVA11)	AoR104- Carlisle Centre	NY401563	Widespread flooding from the Rivers Eden, Petteril, and Caldew, plus flooding from other watercourses, surface water and drainage systems during Storm Desmond in December 2015 affecting 2,100 properties. Initially surface water and overwhelmed drainage systems affected a number of areas prior to defences being overtopped due to extreme nature of rainfall event. Further investigation is needed to understand how surface water can be better managed and how it is influenced by watercourses in the city.	• Initial Assessment Study was completed in 2017. • EA flood defence improvements.	LLFA, UU, EA, Carlisle City	tbc	All
	AoR131 – Brunton Crescent	NY414558	Widespread flooding from the Rivers Eden, Petteril, and Caldew, plus flooding from other watercourses, surface water and drainage systems during Storm Desmond in December 2015 affecting 2,100 properties. Initially surface water and overwhelmed drainage systems affected a number of areas prior to defences being overtopped due to extreme nature of rainfall event. Further investigation is needed to understand how surface water can be better managed and how it is influenced by watercourses in the city.	• Initial Assessment Study was completed in 2017. • EA flood defence improvements.	LLFA, UU, EA, Carlisle City	tbc	All
	AoR105 – Ivory Close	NY382556	Parham Beck which flows to the north is shallow in nature and prone to exceeding its banks. Flooding was noted upstream on Green Lane and within Heysham Park but no flooding at Ivory Close is noted in the last 5 years.	• Scheme is to begin imminently to provide overflow route and improve outflow from Green Lane into Parham Beck. • The Environment Agency are looking to silt a section of Parham Beck 22/23.	EA	2022-23	P1, P2, P4, P5
	AoR124 – Green Lane	NY372558	Green Lane was flooded in 2019 due to siltation of the culverted ordinary watercourse at the frontage	• Scheme is to begin imminently to provide overflow route and	EA	2022-23	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
			of the dwellings. Cleaned in September 2019 and issues noted at the outfall into Parham Beck.	improve outflow from Green Lane into Parham Beck. • The Environment Agency are looking to silt a section of Parham Beck 22/23.			
	AoR106 – Dalton Avenue	NY382552	There is flooding issues to the carriageway of Dalton Avenue and in 2 properties rear gardens. Likely cause is surface water runoff from completed residential development to the rear which is at a higher level. Discharge through fences to the rear of the gardens.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR107 – Stanhope Road	NY391554	The area frequently floods as a result of main river which runs alongside Stanhope Road and Dalston Road junction. The highway flooding is recorded but a recent development behind the ALDI store on Dalston Road has rectified issues associated with the main river caused the flooding.	• Inclusion of this this as part of EA Caldew scheme. • A study will be required for the drainage infrastructure in the area and resultant works will be required to be undertaken. • Watching brief.	EA	2022-25	P1, P2, P4, P5
	AoR108 – Dunmail Drive	NY387549	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR109 – Skiddaw Road	NY389551	Surface water flood risk associated with sewer network.	• Watching brief.	LLFA	Ongoing	P2. P5
	AoR125 – Chesterholm	NY369554	Flooding of the Yewdale Playing Fields noted due to surface water runoff.	• Carlisle City Council installed new filter drains in September 2021. • Watching brief.	Carlisle City Council, LLFA	Ongoing	P2, P5
	AoR126 – Queensway	NY375547	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR127 – Newtown Road	NZ281450	Surface water flood risk associated with sewer network.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR110 - Durdar Road	NY404513	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area,	• Watching brief.	LLFA	Ongoing	P2, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
			therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.				
	AoR116 - Vallum Close	NY405572	Flooding noted at this location in the past for 3 dwellings. Overland flow is the primary cause of the flooding.	• Placeholder for a future project.	LLFA	tbc	P1, P2, P4, P5
	AoR118 - Oaklands Drive	NY408530	Extensive flooding to 5 properties at this location due to a blocked culvert and overland flows. Flooding close to Durdar Road at Hammonds Pond due to issues with the watercourse outfall into Wire Mire Beck from the Ridings Story Homes estate.	• Initial Assessment Study was completed in 2018. • Story Homes delivered a flood alleviation project in 2019 / 2020 to divert the culvert and prevent overland flows. • Watching brief.	LLFA	Ongoing	P2, P5
	AoR120 - Steele's Bank, Wetheral	NY464542	The overall cause of flooding is most likely a result of localised heavy rainfall and under capacity of the public sewer system along with excessive surface water runoff.	• Initial Assessment Study was completed in 2013. • UU working on a solution but currently not economically viable. • Highways have done work on the combined sewers. Has now lessoned the risk of flooding.	UU, LLFA	tbc	P1, P2, P4, P5
	AoR128 - Currock	NY402554	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR129 - Mayfield Avenue	NY419543	Flooding of two rear gardens resulting from overland flows from Inglewood Junior School. Failure of an existing SuDS scheme is the likely cause due to a lack of maintenance.	• CCC have undertaken drainage investigations work within the school grounds to better understand the cause.	LLFA	tbc	All
	AoR130 – Haig Road	NY419537	Flooding noted at Welsh Road / Hayton Road. Primary cause is all surface water drains into the combined sewer which is designed to a 1 in 30 year capacity. Ground water is also an issue at this location	• Further worked to be done by UU on the combined sewer. PLP suggested for residential properties (Riverside Homes)	UU, Riverside Homes	tbc	P1, P2, P4, P5
	AoR134 – Kingstown Road	NY394596	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR135 – Mount Pleasant Road	NY404538	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area,	• Watching brief.	LLFA	Ongoing	P2, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
			therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.				
	AoR136 - Wigton Road	NY378544	Issues with properties on the Eastern side of Wigton Road which back onto Castlerigg Drive. Combined sewer is taking roof water which it is not designed to accommodate.	• Potential scheme as part of CSR2 to Sustainable Urban Drainage. • UU are undertaking extensive CCTV surveys to understand the number of cross connections in this location.	UU	2022-25	All
	AoR137 – Westrigg Road	NY381542	Historic overland flows from Isabel Field to the north. SuDS scheme installed but had a further issue in 2019.	• SuDs constructed completed. • Watching brief.	LLFA	Ongoing	P2, P5
	AoR111 - Longholme Road	NY424538	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR123 – Silverdale Road	NY427545	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR117 - Viaduct Estate Road	NY396559	Known flooding from main river potential from railway track and exceedance. Link to Caldew EA works.	• Initial Assessment Study was completed in 2013. • Debris in the flap valve has been cleared by the Environment Agency (EA). This report recommends that the asset owner carries out routine inspections to ensure that the flap valve remains free from debris. • Watching brief.	EA, LLFA	Ongoing	P2, P5
	AoR132 - Gosling Drive	NY398582	Historic issues noted from main river from Gosling Syke affecting properties.	• EA have completed works in this area. • Watching brief.	EA, LLFA	Ongoing	P2, P5
	AoR133 – Edentown	NY395574	Last flooding event was within 2015.	• Etterby Terrace (EA funded scheme). • Watching brief.	EA	Ongoing	P2, P5
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Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
	AoR101 - Borland Avenue	NY421552	This area frequently floods from surface water as a result of siltation of culverts.	• There is a need to construct a catch pit to collect silt to be able to less frequently and more readily maintain the culvert. There is also a need to undertake culvert repairs.	LLFA	2022-24	P1, P2, P4, P5
	AoR103 - Thurstonfield	NY314566	The infrastructure was considered to be past asset life and partially collapsed. This leading to properties flooding bi-annually.	• Scheme completed. • Watching brief.	LLFA	2021-22	P2, P5
	AoR102 – Castle Carrock	NY542554	Surcharging of the highway drainage system during extreme precipitation events.	• In heavy rainfall events the drainage system overflows. Ideally incorporate a SUDS system on the village green. • To work with UU to work together on this to take water out and put into the combined sewer.	LLFA, UU	2025-26	All
	AoR115 – Rockcliffe	NY358617	Surface Water flood risk due to an ageing and collapsing drainage network. The main cause of the flooding was the tidal surge up the Solway estuary combined with the low pressure weather system of Storm Eleanor. This resulted in 10 dwellings in the Rockcliffe Coast Road / School Lane area suffering from internal flooding.	• Initial Assessment Study was completed in 2021. • CCC have worked closely with the Environment Agency to understand the full scope of the flooding that has occurred. The Culvert to the north west of the estate needs surveying to determine its integrity including all culverts which feed into the system.	LLFA, EA	2022-23	P1, P2, P4, P5
	AoR141 – Harraby Surface Water Investigation	NY420540	Surface water flooding for rear of properties.	• Scheme to be developed as part of the CSR2 programme.	CCC	2024-26	P1, P2, P4, P5
	AoR142 -The Green, Dalston	NY369500	Residents have currently built a small informal bund. The area is flooding twice annually as a result of under capacity drainage infrastructure and limited storage upstream.	• Scheme to be developed as part of the CSR3 programme.	CCC	2029-31	P1, P2, P4, P5
	AoR140 – Longtown Surface Water Alleviation	NY382686	Significant surface water flooding risk to 87 properties in a deprived area. Studies are required to examine the drainage infrastructure, remove surface water from the combined	• Scheme to be developed as part of the CSR3 programme.	CCC	2027-29	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
			sewers along Old Road which are at capacity and a possible NFM to store surface water on Old Road.				
Brampton (PVA11)	AoR113 - Craw Park	NY533610	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	EA, LLFA	Ongoing	P2, P5
	AoR122 – Moat Side	NY533611	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk. This area is a low point linked to Brampton Beck.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR112 – Dacre Road	NY528616	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk. This area is a low point linked to Brampton Beck.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR114 -Brampton Town Centre Surface Water Scheme	NY528610	Study to Investigate 102 properties at significant Surface Water Flood Risk. Modelling at this location is required and may lead to a future project in this location to reduce the surface water flooding risk.	• Scheme to be developed as part of the CSR3 programme.	CCC	2028-30	P1, P2, P4, P5
Eden							
Keswick (PVA08)	AoR201 - Threlkeld Village	NY320253	This project will consider surface water flooding near to Blease Road in Threlkeld. Cumbria County Council have had several reports of internal flooding and multiple near misses to internal flooding for 5 properties. Up to 32 properties are currently within the 1 in 100 year outline.	• Part of the CSR2 programme. There is a need to consider SUDs features and upland attenuation to reduce flood risk to properties.	LLFA, EA	2021-22	All
	AoR315 - St Kentigerns Close, Keswick	NY261240	The project will look at the potential for NFM and infrastructure improvements in order to attenuate more water upstream of Keswick in the event of heavy rainfall.	• Scheme to be developed as part of the CSR3 programme.	CCC	2027-28	P1, P2, P4, P5
	AoR301 -Brundholme Gardens, Keswick	NY271237	Surface water flooding affecting 4 properties.	• S19 was completed in 2016. • Part of the CSR2 programme. Works almost complete, implementing a new surface	LLFA	2020-22	P1, P2, P4, P5

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				system completely bypassing Brundholme Gardens.			
Penrith (PVA10)	AoR202 Pooley Bridge	NY470244	Flooding issues due to wave action associated during strong winds and prolonged heavy rainfall.	• S19 Report was completed in 2017. • As part of programme, hard engineering or NFM measures are required to be considered and implemented.	LLFA, EA	2020-22	P1, P2, P4, P5
	AoR225 - Penrith Town Centre Surface Water	NY514303	Reduction of surface water flood risk to properties by undertaking infrastructure improvements.	• Infrastructure improvements required. Scheme to be developed as part of the CSR3 programme.	CCC	2027-29	P1, P2, P4, P5
	AoR223 -Stainton, Penrith Surface Water Scheme	NY485280	Reduction of surface water flood risk through the introductions of SuDS features.	• Scheme to be developed as part of the CSR3 programme.	CCC	2027-29	P1, P2, P4, P5
	AoR227 - Cliburn Surface Water Scheme	NY587247	This project will look to use a combination of SuDS and NFM features to attenuate water away from properties.	• Scheme to be developed as part of the CSR3 programme.	CCC	2027-28	P1, P2, P4, P5
	AoR224 - Renwick, Cumbria	NY597434	Property level protection will be installed on 9 properties to reduce the risk of internal flooding from a surcharging Ordinary Watercourse at the north end of the village.	• Scheme to be developed as part of the CSR3 programme.	CCC	2029-30	P1, P2, P4, P5
	AoR228 - Temple Sowerby Surface Water Scheme	NY610271	The project will consider ways to reduce surface water flood risk to properties through SuDS features.	• Scheme to be developed as part of the CSR3 programme.	CCC	2031-33	P1, P2, P4, P5
Gamblesby, Glassonby, Plumpton (PVA11)	AoR203 – Gamblesby	NY609395	Magnitude of storm event couldn't handle the volume of water. Sheeting off land. Watercourses have been diverted so caused exceedance and channels have been constructed quite narrow. Eastern side of village, the channel very narrow. One resident will not allow access to widen it, just put in a parking area - but not his land, has abandoned car, trailer/rubbish etc to consider widening that section.	• S19 Report was completed in 2014. • Some NFM done with ERT in the catchment above and some improvement done on A686 by Highways to redirect waterflow to original catchment. Small scale interventions. • Watching brief	LLFA, ERT	Ongoing	P1, P2, P4, P5
	AoR204 – Glassonby	NY576387	Surface Water Flooding Some work been done by Highways, acts as a corridor and channels through Glassonby. Channel towards a few properties and put in traffic	• S19 Report was completed in 2014 • Part of the CSR2 programme. A requirement to assess SUDs and	LLFA, ERT	2024-25	All

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			cushions/gullies to collect it. Thought some NFM may help. Meeting with ERT approx 12 months ag, looking at similar project. Liaise with ERT. Will be difficult for upstream attention due to village layout. Have not had any repeat issues since the highways interventions above.	NFM to reduce flood risk to properties.			
	AoR205 – Plumpton	SP598483	Flooding during heavy rainfall event creating large volumes of surface water that overwhelms watercourse and in particular the culverted section from the B6413 to the A6. East side. Petteril Terrace, part of the EA and looking at issues.	• S19 Report was completed in 2016. • Previous worked has taken place to clear culvert. Part of the CSR2 programme. There requires to be consideration of NFM, bunds etc.	LLFA, EA	2024-25	P1, P2, P4, P5
Nent (PVA12)	AoR207 – Chapel Terrace AoR208 - Bruntley Meadows AoR209 - Overburn	NY782439 NY719460 NY720463	In 2013, 39 properties in 7 areas across Alston were affected by flooding from Main River, ordinary watercourses, surface water and surcharging drainage systems. This is linked to surface water runoff down carriageways. A historic Mill Race to which drainage feeds is likely to be main driver of flood risk in the area.	• Initial Assessment Study was completed in 2020. • CSR2 scheme ongoing, possible tree planting still to be implemented.	LLFA, EA	2017-23	P1, P2, P4, P5
	AoR210 – Station Road	NY717465	Surface water flooding affecting a number of properties in heavy rainfall.	• Some repairs were carried out following Flood Investigations and the site will continued to be monitored. Partly considered with EDC along with adhoc repairs and modification and no longer had any issues at this site. • Watching brief.	LLFA, UU, EDC	2017-23	P2, P5
	AoR211 – Nentsbury	NY759451	Surface water flooding and overtopping from Ordinary watercourse.	• Water improvements worked have been completed by the Coal Authority and make improvements as part of their scheme. Further Natural Flood Management interventions required. • Watching brief as improvements completed by the Coal Authority.	LLFA, Coal Authority	2025-26	P2, P5

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Greystoke (PVA13)	AoR213 - Greystoke	NY440308	Greystoke has been affected by localised surface water flooding in the past at Howard Park. 4 residential properties as well as gardens and roads have been flooded frequently (2 – 5 years). Looking at NFM with Rivers Trust and Natural England - NFM and storage. ERT doing some NFM between Greystoke and Johnby Hall. Working with Local Landowner to consider more works on Greystoke Castle.	• S19 Report was completed in 2016 • Part of the CSR2 programme. Upsizing of culvert through Howard Park. NFM solutions to provide upland storage and slow the flow. Maintenance of ordinary watercourse.	LLFA, NE, ERT	2020-22	P1, P2, P4, P5
Shap (PVA14)	AoR214 – Shap	NY562153	Culverted system overwhelmed by volume of water during extreme flood events resulting in surface water flooding.	• S19 Report was completed in 2016. • Currently at appraisal stage of the scheme. Project currently ongoing as part of the CSR2 programme. The project is seeking to provide upstream storage to reduce the flow towards the village.	LLFA	2021-24	P1, P2, P4, P5
Sedburgh/Kirkby/Lonsdale/Tebay (PVA18)	AoR215 – Tebay	NY618044	On the 5 December 2015 an extreme rainfall event (Storm Desmond) caused flooding in Tebay. It was in the Old Tebay part of the village that flooding to 13 properties took place. The flooding was caused by the cumulative effect of Storm Desmond and the three proceeding storms, which caused the ordinary watercourse Tebay Gill Beck to the south east of Old Tebay bursting its banks, the main river Lune spilling into the same area from the north and finally surface water from overwhelmed highway drainage on the local roads.	• Initial Assessment Study was completed in 2016. • Part of the CSR2 programme. Bunds are required to limit the exceedance of water from channel and overland towards properties. Potential partnership working opportunities with YDNP and Lune Valley Trust.	LLFA, YDNP, LVT	2023-24	P1, P2, P4, P5
Kirkby Stephen (PVA19)	AoR216 – South Road/Birkbeck Gardens	NY770075 NY772076	Surface water flooding affecting properties from overland flow from fields, overwhelming the drainage system.	• Initial Assessment Study was completed in 2016. Appraisal completed in 2021. • Exceedance of Culvert capacity and part of the CSR2 programme. EA consultation as currently done through MSfWG meetings and working with UU.	EA, LLFA, UU	2021-23	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
	AoR220 – Station Yard	NY769075	Surface water flooding affecting properties from overland flow from fields, overwhelming the drainage system.	• Initial Assessment Study was completed in 2016. Appraisal completed in 2021. • Part of the CSR2 Programme. NFM to be explored.	LLFA	2021-23	P1, P2, P4, P5
	AoR218 – High Street	NY773083	Main river issue. Exceedance of Croglam Beck in heavy rainfall.	• Initial Assessment Study was completed in 2016. Appraisal completed in 2021. • Following the appraisal, the EA to review this area of Kirkby Stephen.	EA, LLFA	2021-23	P1, P2, P4, P5
	AoR222 – Pennine View Caravan Park	NY771074	Surface water flooding affecting properties from overland flow from fields, overwhelming the drainage system.	• Initial Assessment Study was completed in 2016. Appraisal completed in 2021. • Part of the CSR2 programme. Culvert improvements taking place 2022.	LLFA	2021-23	P1, P2, P4, P5
Allerdale							
Maryport (PVA09)	AoR309 – Gill Beck	NY052360	During Storm Desmond, small watercourses became inundated with roads becoming major flow routes for floodwater leading to the flooding of approximately 50 properties. Maryport has two small watercourses that join the larger River Ellen before flowing out to sea, Eel Syke and Gill Beck.	S19 Report was completed in 2017. Main river issues, the EA are monitoring this area. Watching brief.	EA, LLFA	2023-26	P2, P5
	AoR306 – Main Road	NY025348	During Storm Desmond, small watercourses became inundated with roads becoming major flow routes for floodwater leading to the flooding of approximately 50 properties. Maryport has two small watercourses that join the larger River Ellen before flowing out to sea, Eel Syke and Gill Beck.	• S19 Report was completed in 2017. • Watching brief.	LLFA	Ongoing	P2, P5
	AoR306 – Grasslot Street	NY033358	Grasslot Street is at pluvial and fluvial risk as a product of undersized poor condition drainage infrastructure. The last significant event occurred in December 2015 during storm Desmond. The onset of flooding is consider to be a circa 1 in 30 year event.	• S19 Report was completed in 2017. • Currently part of the CSR2 programme to review NFM improvements. There is a need to improve flows to reduce flood risk.	LLFA	2026-28	P1, P2, P4, P5
Flimby (PVA09)	AoR302 – Flimby	NY020338	During Storm Desmond, watercourses became inundated with road becoming major flow routes for floodwater leading to the flooding of	• S19 report was completed in 2017.	LLFA, EA	2020-22	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
			approximately 100 properties. Rainwater poured off the hillside, washing away footpaths in Flimby Great Wood, and inundating watercourses and surface water systems through Flimby before flowing out to sea.	• Part of the CSR2 programme. This project will consider all areas at surface water flood risk that were not considered as a part of the Flimby scheme undertaken by the EA. Flimby regularly floods and works is required to improve upland storage through NFM measures and to undertake works to the existing surface water network. • Fothergill watching brief.			
Seaton (PVA09)	AoR308 – Seaton	NY018311	During Storm Desmond, small watercourses became inundated with roads becoming major flow routes and failure in infrastructure becoming compromised this resulting in the internal flooding of 9 properties	• S19 Report was completed in 2017 • EA completed work to Ling Beck. Minor works been completed by CCC on Lowca Lane. • Watching brief.	LLFA, EA	Ongoing	P2, P5
Ewanrigg (PVA09)	AoR306 – Ewanrigg	NY042355	Flooding of roads and grassland.	• Working with developer. Separate surface water system to ordinary watercourse.	LLFA	tbc	P1, P2, P4, P5
Hindrigg (PVA09)	AoR304 – Beech Hill	NY152428	Small degree of flooding from surface water ponding in the past. 5 properties affected. The car park and roads flooded previously.	• Watching brief	LLFA	Ongoing	P2, P5
Cockermouth & Workington (PVA09)	AoR314 – Workington Flood Risk Study	NX997282	There have been multiple near misses in relation to Surface Water flooding in Workington. The surface water flood maps also show multiple locations which are at significant and very significant flood risk. There is a need to consider the impacts of climate change on the surface water network to understand SuDs and infrastructure upgrade requirements.	• Scheme to be developed as part of the CSR3 programme.	CCC	2031-32	P1, P2, P4, P5

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Copeland							
Cleator Moor (PVA05)	AoR406 – Parkside	NY032153	Surface water and fluvial	• Watching brief and monitor through MSfWG	LLFA	Ongoing	P2, P5
	AoR403 – William Morris Avenue / Orchard Place	NY024148	Issues with ground water and surface water run off during weather events, low lying properties next to the carriageway suffer from flooding and water running from high ground enters the rear properties on the frontage of the B5295.	• Appraisal ongoing to understand surface water flood reduction.	LLFA	2021-23	P1, P2, P4, P5
	AoR401 – Norbeck Park, Cleator Moor	NY012154	Historical issues with the culvert inlets to the main rivers which was resolved through work undertaken by the EA.	• Appraisal ongoing to understand surface water flood reduction.	EA, LLFA	2021-23	P1, P2, P4, P5
Egremont (PVA05)	AoR408 - Greenmoor Road	NY008111	Surface water flood risk associated with the combined sewer systems results in frequent flooding.	• Currently on CSR2. To work with UU to determine action on this scheme.	UU, LLFA	2022-24	P1, P2, P4, P5
Woodend (PVA05)	AoR407 – Woodend	NY219272	Woodend Farm suffered from flooding on 30th August 2012 and again 17th October 2012. The main cause of the flood was that an Ordinary Watercourse is restricted by a culvert which carries the watercourse under a road outside Woodend Farm. A major contributing factor is that surface water is brought to the same location by the roads and fields.	• S19 report was completed in 2013. • Interventions from Highways have previously taken place. Watching Brief. To be monitored by MSfWG.	LLFA	Ongoing	P2, P5
Lingla Beck (PVA05)	AoR402 – Mill Street	NY033172	Past flooding due to debris building up in Lingla Beck, reducing capacity to manage high flows.	• Maintenance schedule to be agreed.	LLFA	tbc	P1, P2, P4, P5
Ennerdale Bridge (PVA05)	AoR409 – Kirkland Road	NY070161	Properties suffer flooding due to close proximity to water course, which when runs with high volumes surcharges back up the surface water system causing carriageway flooding which then effects properties nearby.	• Undertake an appraisal to understand if any surface water flooding reductions can be made.	LLFA, EA	2022-24	P1, P2, P4, P5
Whitehaven (PVA06)	AoR410 – Victoria Road	NX982191	Surface Water flooding from the fields being Victoria Road, Whitehaven during a rainfall event on the 17th October 2012. Heavy prolonged rainfall onto saturated steeply sloping ground caused the following. The resulting surface water runoff overwhelmed any land drainage that was in place at the bottom of the sloping ground and flowed through gardens and between properties onto the road, causing some flooding on the other side. Pluvial flooding rather than fluvial	• S19 report was completed in 2014. • Working with National Highways to determine action on this scheme.	LLFA, NH	tbc	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
	AoR411 – Whitehaven North	-	Multiple flooding mechanisms contribute in this area, Fluvial, Pluvial and also tidal flooding, main rivers and minor water courses outfall into or near harbour, under right conditions this can lead to multiple areas being affected through surface water flows and surcharging of drainage systems.	• Agreement in place with Whitehaven harbour commission to monitor harbour water levels to minimise flooding upstream during weather events, various partnership working with EA, UU and CBC to monitor and reduce risk of flooding. • Watching brief through MSfWG.	LLFA, UU, EA	Ongoing	P2, P5
	AoR412 – Hensingham	NX987167	Historical issues with culverts and local highway drainage, various investigations with partnership have taken place to reduce impact of flooding in this area.	• Partnership working with UU, HA, CBC and developers to try and reduce flooding impacts. • Currently working up scheme for this area.	LLFA, UU, HA, CBC	tbc	P1, P2, P4, P5
	AoR413 – Whitehaven Centre	-	Historical issues with UU surface water system in this area, surcharging in storm events which causes highway flooding which impacts properties below road level.	• Partnership working with UU, HA to reduce impact of flooding. UU are working up a scheme for this area.	LLFA, UU, HA, CBC	tbc	P1, P2, P4, P5
	AoR414 – Meadow Road	NX983156	Historically surface water and overland flows would affect the highway and have potential to impact on properties.	• Various small works have been undertaken by landowners and CBC to reduce risk. • Watching brief through MSfWG.	LLFA, CBC	Ongoing	P2, P5
	AoR415 – Mirehouse West	NX983154	Historic issues with the main river of Pow Beck caused property flooding in the 2000's.	• Maintenance projects have been undertaken since which have resolved the issues. • Watching brief through partnership working with EA and CBC. Part of the CSR3 programme.	LLFA	2027-29	P2, P5
	AoR418 – Rosebank	NX988166	Historic issues in this area believed to be connected with a culvert on Egremont Rd which was blocked causing surcharging of the system upstream on Rosebank.	• Highway Authority repaired damaged section of culvert and this appears to have resolved the issue.	LLFA	Ongoing	P2, P5

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				• Watching brief through MSfWG.			
	AoR434 – Duke Street	NX975182	Localised drained connected to the culvert struggles to cope with exceedance during in storm events and floods the area as the culvert connects to the harbour.	• Agreement in place with Whitehaven harbour commission to monitor harbour water levels to minimise flooding upstream during weather events, various partnership working with EA, UU and CBC to monitor and reduce risk of flooding. • Recent survey identified maintenance that requires to be undertaken. A maintenance schedule to be reviewed and agreed.	LLFA, EA, UU, CBC	2025-27	P1, P2, P4, P5
	AoR437 - Snebra Beck, Whitehaven	NX979168	Surface water flooding during heavy rainfall events.	• Investigate NFMs and drainage infrastructure improvements required. Scheme to be developed as part of the CSR3 programme.	CCC	2030-32	P1, P2, P4, P5
	AoR438 - Lakeland Avenue, Woodhouse, Whitehaven	NX968162	The project will look at local improvements to drainage infrastructure and SuDS features.	• Scheme to be developed as part of the CSR3 programme.	CCC	2030-32	P1, P2, P4, P5
	AoR439 - Honister Road, Whitehaven	NX985154	The area suffers from frequent flood as a result of under capacity and poor condition drainage infrastructure. Can lead to frequent onset of flooding to highway and properties where there are low level thresholds.	• Scheme to be developed as part of the CSR3 programme.	CCC	2030-32	P1, P2, P4, P5
	AoR440 - Coach Road, Whitehaven	NX975174	Flood risk at Coach Road is from a UU combined sewer and highway sewers. Flood risk is also linked to high levels on Pow Beck.	• Scheme to be developed as part of the CSR3 programme.	CCC	2027-28	P1, P2, P4, P5
Parton (PVA06)	AoR420 – Parton	NX979205	Historic flooding issues in the past (20 years). Tidal flooding, fluvial and pluvial.	• Potential for culvert improvements and need to deal with high water levels in the drainage network as a result of high tides and Storm events.	LLFA	2023-25	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
Sandwith (PVA06)	AoR416– Sandwith	NX964146	Sandwith suffered flooding during the excessive rainfall events of the 22nd June and the 30th August 2012. The main cause of the flooding appears to be from surface water runoff from fields previously saturated by a succession of rainfall events, some with durations of nearly 24 hours. Changes in land management practises contributed significantly to flooding in some areas. Blocked highway drainage also contributed to the flooding but this is not usual under the circumstances. The drainage is designed to drain the highway and has insufficient capacity to deal with runoff from large areas of land.	• S19 report was completed in 2014. • Dealing with on a small scale work for our programme. Construction of a swales and tabletop in highway to divert surface water flows away from vulnerable properties.	LLFA	tbc	P1, P2, P4, P5
Moresby Park (PVA06)	AoR417 – Moresby Park	NX999186	Historic flooding issues at Station House, School Brow, Moresby parks. Surface water systems capacity isn't large enough which outfalls through a sandstone culvert underground across new private estate to watercourse heading to low Moresby. The Culvert manhole surcharges and enters the foul system causing flooding at various point within Moresby Parks including Station House.	• CCC working with potential developer on a proposed site at School Brow to install an overflow pipe from the culvert manhole through the new development site and outfall into an attenuation pond before linking up with the watercourse that's runs to Low Moresby. Designs need to be finalised but this should reduce surcharging of the culvert manhole and stop surface water overflow getting into the foul system.	LLFA	tbc	P1, P2, P4, P5
Ravenglass (PVA06)	AoR426 – Ravenglass	SD084962	Heavy rainfall had led to overland flows running onto carriageway and then making its way down towards the lowest point at the railway bridge leading to property flooding, surface water outfalls onto beach which can be hindered by hightides and relies on flap valve to prevent tidal surcharging of the system.	• Section 19 report completed in 2012. Various small works undertaken since 2012 through Highway Authority to replace pipework and flap valves in local area, further works to take place 2022 with further interventions to reduce flood risk.	LLFA	2021-23	P1, P2, P4, P5
Bootle (PVA15)	AoR421 – Mill Street	SD108882	Flooding from river overtopping. NFM has been done however flooding is still an issue.	• Currently arranging CCTV to understand the culvert in this area. • Currently further assessing this area to understand	LLFA, EA, WCRT	tbc	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
				issues. Following results of the assessment, a future scheme will be considered in Partnership with WCRT.			
	AoR422 – Annaside	SD090866	Fluvial concerns.	• Watching brief	LLFA	2023-26	P2, P5
	AoR436 – River Annas, Bootle	SD085872	Surface water run-off from the lake district fells in significant rainfall events travels to the River Annas via overland flow. The river in circa a 1 in 20 year event breaches it's banks near to Hinninghouse Bridge flood farmland and properties.	• There is a need to consider NFM solutions to attenuate peak flow in order to avoid property flooding.	LLFA	2024-26	P1, P2, P4, P5
Millom & Haverigg (PVA16)	AoR427 – Holborn Hill AoR430 – Millom Centre AoR432 – Finch / Settle Street	SD169803 SD172803 SD171804	In Sept 2017 an intense rainfall event occurred. The rain overwhelmed the drainage systems and surface water began to rise, flooding an estimated 255 residential properties.	• S19 Report was completed in 2018. Initial Assessment was completed in 2020. • Currently part of the CSR2 programme. Construction of new flood prevention system to improvements to Surface Water Flood Risk which is combined with the public sewer system.	LLFA, UU	2021-23	P1, P2, P4, P5
	AoR428 - Mainsgate Road AoR431 - Wasdale/Oxford Street	SD174796 SD178796 SD175797	In Sept 2017 an intense rainfall event occurred. The rain overwhelmed the drainage systems and surface water began to rise, flooding an estimated 255 residential properties.	• S19 Report was completed in 2018. Initial Assessment was completed in 2020. • Currently part of the CSR2 programme. Construction of new flood prevention system to improvements to Surface Water Flood Risk which is combined with the public sewer system.	LLFU, UU	2021-23	P1, P2, P4, P5
	AoR429 - Moor Park	SD168800	In Sept 2017 an intense rainfall event occurred. The rain overwhelmed the drainage systems and surface water began to rise, flooding an estimated 255 residential properties.	• S19 Report was completed in 2018. Initial Assessment was completed in 2020. • Currently part of the CSR2 programme. Construction of new flood prevention system to improvements to Surface Water Flood Risk which is combined with the public sewer system.	LLFU, UU	2021-23	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
South Lakeland							
Ulverston (PVA02)	AoR506 – Kennedy Street	SD303779	Very flat and low lying area with high groundwater. No apparent discharge for Kennedy Street drain and all surface water discharges into the UU combined system. Potential issues with the hydraulic capacity of the UU system.	• Watching brief.	EA, LLFA	Ongoing	P2, P5
	AoR560 – Beckside Road, Ulverston Surface Water	SD284788	Increase culvert capacity under Old Hall Road (30m length).	• Scheme to be developed as part of the CSR3 programme.	CCC	2028-29	P1, P2, P4, P5
Bowness-on-Windermere (PVA03)	AoR532 - St Martin's Parade AoR548 - Crag Brow	SD403969 SD403969	Surface water flood risk shown by modelling. No confirmed reports of surface water flooding. Uncharted culverted watercourse likely to be present.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR533 - South Terrace	SD405971	On route of culverted watercourse and has previously experienced flooding from culvert exceedance and surface water.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR524 – Lake Road / Thornbarrow Road	SD405971 SD412976	Exceedance of culverted Main River has exceeded into connected drainage systems (private, public, and highway).	• Watching brief.	LLFA, UU	Ongoing	P2, P5
	AoR524 - Lake Road / Craig Walk	SD405971	Complex series of culverted Main River and Ordinary Watercourses come together at this location. Exceedance has caused flooding.	• Part of the CSR3 programme. Look for opportunities to provide improvements to culverted watercourses.	LLFA	2027-29	P1, P2, P4, P5
	AoR525 – Mountain Ash Court	SD408989	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR550 – Patterdale Road	SD406993	Overland flow from fells to the north partnered with watercourse exceedance has resulted in past flooding.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR558 – Bellman Close, Windermere	SD394940	Localised drainage infrastructure improvements and SuDS features.	• Scheme to be developed as part of the CSR3 programme.	CCC	2028-29	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
Ambleside (PVA03)	AoR504 – Greenbank, Ambleside Surface Water Flooding	NY375048	Surface water flooding from runoff coming off upper field which runs through the wall into the student flats area across the garden through fences into other gardens.	• S19 Report was completed in 2017 • Design currently being progressed with EA and landowner.	EA, LLFA	2022-24	P1, P2, P4, P5
Kendal (PVA04)	AoR540 – Collin Road	SD511912	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR541 – Bellingham Road	SD512909	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR537 - Blind Beck	SD514921	Surface water flooding has occurred around Blind Beck which is a karstic watercourse that usually has a dry channel and flows underground. Highly urbanised channel disconnected from any floodplain.	• Review catchment of watercourse, channel of watercourse, and routes for surface water to connect to channel. A study if required to be undertaken to understand improvements required to be made to the culvert.	LLFA	tbc	P1, P2, P4, P5
	AoR539 – Romney Road	SD515915	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR539 – Highgate	SD515922	On the 28th June 2012 an extreme rainfall event caused flooding in the Highgate and Kirkland area of Kendal. Nine commercial properties and parts of the Highgate and Kirkland sections of the A6 were affected by the surface water flooding. The A6 became impassable to vehicles for a time. The highway and public sewer drainage systems became overwhelmed with the surface water flow to the Highgate and Kirkland areas as it is likely their design criteria was exceeded by the rainfall event.	• S19 Report was completed in 2013. • Cleaning and improvement works have been carried out by both United Utilities and CCC Highways following the event, but it is unlikely that existing drainage systems would be able to cope with a rainfall event of this intensity. • Part of the CSR2 programme. Exceedance flood routing to be reviewed.	LLFA, EA	2022-24	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
	AoR543- Sandylands	SD525932	Initial flooding from Stock Beck occurred as the capacity of the underground culverted watercourse system was exceeded, followed by overtopping of the Stock Beck Flood Storage Basin.	• S19 report was completed in 2018 • EA project to be completed in 2023. Following this, watching brief.	EA	2023	P2, P5
	AoR542 – Hallgarth	SD509942	Surface water runoff from multiple directions comes together and joins sewer causing surface water and sewer flooding.	• S19 report was completed in 2013 • Part of the CSR2 programme. Reviewing works to create a storage area to accommodate run off from extra highway gullies.	UU, LLFA, Highways	tbc	P1, P2, P4, P5
	AoR503 - Carus Green, Kendal	SD513951	Flooding due to exceedance of culverted watercourse.	• S19 Report was completed in 2016. • Project ongoing to deliver flood relief culvert, watching brief thereafter.	LLFA	2020-22	P1, P2, P4, P5
	AoR508 – Lowther Park, Kendal	SD527923	Surface water flood risk from overland flows ponding in low lying area affecting up to 49 properties in the area. Flooding has also occurred due to infiltration into the public sewer.	• S19 Report was completed in 2016 • Part of the CSR2 programme. Project to reduce surface water flood risk through the adoption of SUDs measures and improvements to infrastructure.	LLFA	2023-24	P1, P2, P4, P5
	AoR512 - Rinkfield, Kendal	SD519909	Flood risk to properties if surface water in field exceeds. Contributions to flood risk from drainage exceedance.	• S19 Report was completed in 2016 • Watching brief. Project in design phase.	LLFA	2023-25	P1, P2, P4, P5
	AoR554 - Low Garth	SD508940	Surface water flooding affecting 16 properties due to exceedance of drainage network.	• Currently in Design and construction phase - complete by end of July. Upsizing of existing of surface water pipework and new pipework. Construction of SuDS pond.	CCC	2020-22	P1, P2, P4, P5
	AoR552 - Vicarage Drive, Kendal	SD515916	Properties affected by surface water flooding due to culvert in poor condition.	• Scheme to be developed as part of the CSR2 programme.	CCC	2026-27	P1, P2, P4, P5
	AoR555 - Lindale Surface Water Scheme	SD416805	Ongoing surface water investigation is being undertaken in area. There is a moderate flood risk to properties. There is a need for local SuDS improvements.	• Requirement for local SuDS improvements. Scheme to be developed as part of the CSR3 programme.	CCC	2027-29	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
	AoR556 - Fairfield, Flookburgh	SD366760	Improvements to highway drainage.	• Scheme to be developed as part of the CSR3 programme.	CCC	2028-29	P1, P2, P4, P5
	AoR551 -Yewbarrow Terrace, Grange over Sands	SD410781	The project will look to consider a seepage cut-off and overland cut-off route to exclude flood water from the vicinity of the properties. This may be achieved through Property Level Protection.	• Scheme to be developed as part of the CSR3 programme.	CCC	2027-29	P1, P2, P4, P5
	AoR507 - Kents Bank Road, Grange over Sands	SD402771	Surcharging combined system due to hydraulic capacity and highway drainage going into the combined system.	• This is on the CSR2 programme. It is likely SUDs features will be employed in order to reduce surface water in to the sewer system.	LLFA	2023-25	P1, P2, P4, P5
	AoR510 - Middleshaw	SD415976	There has been overtopping of a watercourse 'Middleshaw Beck' on frequent occasions resulting in flooding of one property.	• Possibly remove restrictions of watercourses or provide exceedance routes. PLP.	LLFA	2025-26	P1, P2, P4, P5
Grasmere (PVA04)	AoR513 – Rydal, Grasmere	NY363063	Surface water flood risk from overland flow route from fields, along with blocked watercourse.	• S19 Report was completed in 2016 • Scheme has been designed, delivery planned for 2022 .	LLFA	2021-22	P1, P2, P4, P5
Burton in Kendal (PVA17)	AoR546 – Burton in Kendal	SD530764	Surface water and ordinary watercourses from land to east causing flooding at various locations.	• Project in design phase for conveyance of flow away from Burton in Kendal. Look at NFM project to reduce flow into Burton in Kendal.	LLFA, Highways	2024-26	P1, P2, P4, P5
	AoR514 – The Tannery, Burton in Kendal	SD528766	Flooding was a result of the extreme rainfall over a short period of time resulting in overland surface water flows from rural areas above the village, ground water and existing pipework/culverts become overwhelmed.	• Outline design complete.	LLFA	2024-26	P1, P2, P4, P5
	AoR514 – Beetham	SD497794	During significant events the water depth in the river does not allow the surface water to discharge. This leads to backing up of water in the surface water network leading to flooding of 12 properties.	• S19 report complete 2021. • The scheme is currently in development. The project currently ongoing as part of the CSR2 programme.	LLFA	2021-23	P1, P2, P4, P5
	AoR553 – Queens Square, Kirkby Stephen	SD610787	Abbotgate Culvert	• Scheme to be developed as part of the CSR3 programme.	LLFA	2027-28	P1, P2, P4, P5
Holme (PVA17)	AoR544 – Mayfield Avenue	SD522790	Groundwater flooding reported. Possibly related to perched soakaways and	• Study required to understand any groundwater issues.	LLFA	tbc	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
			confinement from development platform related to previous development.				
	AoR545 – Milnthorpe Road	SD521788	Surface water flood risk shown by modelling. Culverted watercourse capacity issues.	• Watching brief.	LLFA, Highways	Ongoing	P2, P5
	AoR511 - North Road	SD524789	Groundwater flooding through karstic limestone and issues with culverted watercourse (stone culvert) under North Rd.	• S.19 report completed 2018. • Part of the CSR2 programme to re-route highways culvert to be completely under road. • Following completion, watching brief.	LLFA	2021-22	P1, P2, P4, P5
Sedbergh / Kirby / Lonsdale / Tebay (PVA18)	AoR505 - Guldrey Rd, Sedbergh	SD651920	Surface water flooding due to run-off from upper fells towards Guldrey Lane and Rd area.	• Initial Assessment Study was completed in 2017. • Project being progressed as part of CRS2.	LLFA	2022-23	P1, P2, P4, P5
	AoR509 – Main Street, Kirkby Lonsdale	SD611786	Legacy drainage capacity issues. Urban location.	• Placeholder for a future project.	LLFA	2026-27	P1, P2, P4, P5
	AoR501 - Biggins Road, Kirkby Lonsdale	SD606784	Culvert exceedance and surface water runoff from fields gets conveyed by the public highway and can't get back into discontinuous drainage system.	• Potential for NFM upstream. Culvert route is unknown so could be plotted and improved where necessary. Exceedance flood routing. PLP and resilience measures for school and supermarket.	LLFA	2026-27	P1, P2, P4, P5
Barrow							
Barrow (PVA01)	AoR604 – Silverdale Street	SD202693	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR607 - Harrel Lane	SD213704	AoR on line of an historic watercourse which is partially culverted and partially within the UU surface water sewer. Exceedance occurs into combined system and onto the highway causing flooding to several properties.	• Scheme progressing. Investigation and modelling initially to explore options.	LLFA, UU	CSR2	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
	AoR608 - Abbots Vale	SD212694	AoR on line of an historic watercourse which is partially culverted and partially within the UU surface water sewer. No recent reports of flooding.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR612 - Wheatclose Road	SD207712	On line of historic watercourse, Problem has occurred during heavy rainfall, but not since 2012, gullies unable to cope with amount of water. UU upsized Combined system from 225 to 300mm, however flooding has returned. Unmapped culvert could be the key.	• Further investigation required into sewer hydraulic capacity with UU and Highways.	LLFA, UU	tbc	P1, P2, P4, P5
	AoR606 – Longway	SD216689	Very flat, hydraulic capacity of combined system, also high water table. Short term flooding and to road only not property.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR609 - Flass Lane	SD218697	No recent reports of localised flooding but most likely sewer capacity / sewer flooding had caused backing up onto road. Appears that mapping does not account for positive surface water drainage.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR623 - Friars Lane	SD215695	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Part of CSR3 programme to consider SuDs and local infrastructure improvements.	LLFA	2027-29	All
	AoR610 – West Avenue	SD206701	Historic flooding to the south side of West Avenue from sewer hydraulic inadequacy. UU have carried out an improvement to increase capacity. Highway improvements and flood gate barriers fitted. No recent reports of road flooding, but flooding to the garden of house on the north side reported more recently.	• Investigation into surface water from the north.	LLFA, UU	tbc	P1, P2, P4, P5
	AoR619 – Hindpool Road	SD192695	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P1, P2, P4, P5
	AoR620 - North Road	SD189689	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR622 - Holebeck Road	SD222695	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
	AoR601 - Black Butts Lane	SD180681	Regular flooding of Black Butts Lane due to sewer hydraulic inadequacy.	• Further investigation with UU and Highways to see if there is a local improvement. Ultimate solution may revolve around Walney Channel rising main study.	LLFA, UU	tbc	P1, P2, P4, P5
	AoR624 – Ewan Close	SD211701	Surface water flooding of up to 57 properties due to overland flow and sew capacity.	• Currently at options appraisal stage of the scheme. Project currently ongoing as part of the CSR2 programme.	CCC	2021-22	P1, P2, P4, P5
Dalton-in-Furness (PVA01)	AoR613 - Market Street	SD229740	Widespread integrated flooding across town including fluvial flooding, surface water ponding and exceedance of combined drainage network.	• Further investigation required.	LLFA, UU	tbc	P1, P2, P4, P5
	AoR614 - King Street	SD233743	Widespread integrated flooding across town including fluvial flooding from the Poaka Beck, surface water ponding and exceedance of combined drainage network.	• Further investigation required.	LLFA	tbc	P1, P2, P4, P5
	AoR616 - Newton Road, Dalton	SD230715	Flooding to west side of road from 2012 localised storm. Water flooded from east of Newton Road to the west , contributed from tripped out pumping station. No flooding reports since.	• Watching brief.	LLFA	Ongoing	P2, P5
	AoR602 - Greystone Lane	SD232735	Road flooding from pond which has no natural outlet so is pumped to a UU combined system.	• Needs further investigation to provide sustainable SW drainage route from development site to west of pond.	LLFA, UU	tbc	P1, P2, P4, P5
Walney Island (PVA01)	AoR617 – Amphitrite Street	SD178676	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	LLFA	Ongoing	P2, P5
Coastal							
Coastal (PVA20)	AoR5701 - A5087 Newbiggin Protection	SD269692	Options for highway protection	• An initial assessment to be completed as part of the CSR2 coastal programme.	CCC	2023-24	P1, P2, P4, P5
	AoR3701 - Silloth Groyne Replacement	NY110540	Protection to promenade	• Initial assessment completed. Ongoing work progressing options as part of the CSR2 coastal programme.	CCC	2020-22	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
	AoR3702 - Solway Firth Erosion Study	NY074458	Investigating erosion risk to infrastructure and habitats	• Ongoing work progressing options as part of the CSR2 coastal programme.	CCC	2021-23	P1, P2, P4, P5
	AoR4702 - Seascale Coastal Erosion Protection	NY036009	Study to investigate options for coastal protection	• Initial assessment completed. Project currently ongoing as part of the CSR2 coastal programme.	CBC	2022-25	P1, P2, P4, P5
	AoR4703 - St Bees Coastal Erosion Protection	NX960117	Study to investigate options for coastal protection	• Initial assessment completed. Ongoing work progressing options as part of the CSR2 coastal programme.	CBC	2022-24	P1, P2, P4, P5
	AoR5702 - Morecambe Bay Erosion Study	SD350700	Investigating erosion risk to infrastructure and habitats	• Project currently ongoing as part of the CSR2 coastal programme.	CCC	2020-23	P1, P2, P4, P5
	AoR5703 - South Ulverston Integrated Flood Risk Management Scheme	SD303779	Surface water, river and coastal flood risk studies. Environment Agency project	• Initial assessment ongoing. Project currently ongoing as part of the CSR2 coastal programme.	EA	2020-24	P1, P2, P4, P5
	AoR4701 - Millom & Haverigg Flood Alleviation	SD175802	Study to include coastal flooding risk as well as surface water flooding	• Ongoing work progressing options as part of the CSR2 coastal programme.	CCC	2021-23	P1, P2, P4, P5
	AoR3703 - Harrington North Shore Coastal Erosion Protection	NX988257	Protection to coastal path, former landfill site and railway	• Initial assessment completed. Ongoing work progressing options as part of the CSR2 coastal programme.	CCC	2020-24	P1, P2, P4, P5
	AoR4704 - Whitehaven Harbour Flood Defence Capital Replacement Works	NX970184	Repairs to harbour walls	• Project currently ongoing as part of the CSR2 coastal programme.	CBC	2020-22	P1, P2, P4, P5
	AoR6701 - South Walney Landfill Site Protection	SD197640	Coastal protection to former landfill site	• Project currently ongoing as part of the CSR2 coastal programme.	CCC	2021-23	P1, P2, P4, P5
	AoR3704 - Workington Former Steel Works Site Coastal Erosion Scheme	NX985272	Coastal protection to development site	• Initial assessment ongoing. • Project currently ongoing as part of the CSR2 coastal programme.	CCC	2022-26	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
	AoR6702 - Roa Island	SD232649	Implement the recommendations of the Roa Island Shorelink Study	• Project currently ongoing as part of the CSR2 coastal programme.	BBC	2021-24	P1, P2, P4, P5
	AoR6703 - West Shore Park, Walney	SD170701	Develop a managed realignment strategy in readiness for when the current temporary defences are due to be removed	• Project currently ongoing as part of the CSR2 coastal programme.	CCC	2025-27	P1, P2, P4, P5
	AoR3705 - Oldside Landfill Workington	NX994304	Coastal protection to former landfill site	• Project currently ongoing as part of the CSR2 coastal programme.	CCC	2022-24	P1, P2, P4, P5
	AoR3706 - Dubmill Point Coastal Erosion	NY076454	Investigate viability of B5300 realignment inland	• Project currently ongoing as part of the CSR2 coastal programme.	CCC	2022-24	P1, P2, P4, P5
	AoR3707 - Allonby to Seacroft Farm Erosion Protection	NY080441	Investigate protection to wastewater and highway infrastructure	• Integrate with Allerdale Coastal Processes Study & Allonby Beach Management Study. Project currently ongoing as part of the CSR2 coastal programme.	CCC	2023-26	P1, P2, P4, P5
	AoR3708 - Siddick to Risehow (Flimby)	NY021340	Coastal protection to rail infrastructure. Watercourse outfall/beach management	• Project currently ongoing as part of the CSR2 coastal programme.	CCC	2027-30	P1, P2, P4, P5
	AoR3709 - Siddick to Risehow (Siddick)	NY003319	Coastal protection to Wastewater infrastructure.	• Project currently ongoing as part of the CSR2 coastal programme.	CCC	2027-30	P1, P2, P4, P5
	AoR3710 - Siddick to Risehow (Siddick)	NY008324	Coastal protection to windfarm infrastructure	• Project currently ongoing as part of the CSR2 coastal programme.	CCC	2027-30	P1, P2, P4, P5
	AoR3711 - Bowness on Solway Erosion Reduction	NY222627	Investigate options to protect private properties	• Project currently ongoing as part of the CSR2 coastal programme.	CCC	2024-27	P1, P2, P4, P5
	AoR4705 - Parton Combined Flood and Coastal Erosion Risk Study	NX978206	Tidal, fluvial & pluvial flood risk investigation	• Project currently ongoing as part of the CSR2 coastal programme.	CBC	2023-29	P1, P2, P4, P5
	AoR4706 - Stubb Place and Eskmeals Coastal Erosion Protection	SD080908	Short-term protection to highway access to MoD site whilst long-term solution is investigated	• Project currently ongoing as part of the CSR2 coastal programme.	CBC	2023-25	P1, P2, P4, P5

Action number	Area of risk	Grid reference	Issue	Actions and progress	Lead organisation	Timescale	Policies served
	AoR3712 - Anthorn to Cardurnock Coastal Erosion	NY180574	Green Estuary stabilization techniques to be investigated	• Project currently ongoing as part of the CSR2 coastal programme.	CCC	2023-25	P1, P2, P4, P5
	AoR4707 - Whitehaven Rock Armour Capital Maintenance	NX972188	Reinstatement of rock armour	• Project currently ongoing as part of the CSR2 coastal programme.	CBC	2025-27	P1, P2, P4, P5

Appendix B Cumbria LFRMS actions that do not require further investigation at a lower tier of the planning system

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
Carlisle					
Carlisle (PVA11)	AoR131 – Brunton Crescent	NY414558	Widespread flooding from the Rivers Eden, Petteril, and Caldew, plus flooding from other watercourses, surface water and drainage systems during Storm Desmond in December 2015 affecting 2,100 properties. Initially surface water and overwhelmed drainage systems affected a number of areas prior to defences being overtopped due to extreme nature of rainfall event. Further investigation is needed to understand how surface water can be better managed and how it is influenced by watercourses in the city.	• Initial Assessment Study was completed in 2017. • EA flood defence improvements.	There does not appear to be any European sites within the ZoI of this area. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites, however this action will be assessed further at a project level.
	AoR105 – Ivory Close	NY382556	Parham Beck which flows to the north is shallow in nature and prone to exceeding its banks. Flooding was noted upstream on Green Lane and within Heysham Park but no flooding at Ivory Close is noted in the last 5 years.	• Scheme is to begin imminently to provide overflow route and improve outflow from Green Lane into Parham Beck. • The Environment Agency are looking to silt a section of Parham Beck 22/23.	This area appears to be over 800 m from River Eden SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR124 – Green Lane	NY372558	Green Lane was flooded in 2019 due to siltation of the culverted ordinary watercourse at the frontage of the dwellings. Cleaned in September 2019 and issues noted at the outfall into Parham Beck.	• Scheme is to begin imminently to provide overflow route and improve outflow from Green Lane into Parham Beck. • The Environment Agency are looking to silt a section of Parham Beck 22/23.	This area appears to be over 900 m from River Eden SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR106 – Dalton Avenue	NY382552	There is flooding issues to the carriageway of Dalton Avenue and in 2 properties rear gardens. Likely cause is surface water runoff from completed residential development to the rear which is at a higher level. Discharge through fences to the rear of the gardens.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	AoR107 – Stanhope Road	NY391554	The area frequently floods as a result of main river which runs alongside Stanhope Road and Dalston Road junction. The highway flooding is recorded but a recent development behind the ALDI store on Dalston Road has rectified issues associated with the main river caused the flooding.	• Inclusion of this this as part of EA Caldew scheme. • A study will be required for the drainage infrastructure in the area and resultant works will be required to be undertaken. • Watching brief.	This area appears to be over 300 m from River Eden SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR108 – Dunmail Drive	NY387549	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR109 – Skiddaw Road	NY389551	Surface water flood risk associated with sewer network.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR125 – Chesterholm	NY369554	Flooding of the Yewdale Playing Fields noted due to surface water runoff.	• Carlisle City Council installed new filter drains in September 2021. • Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR126 – Queensway	NY375547	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR127 – Newtown Road	NZ281450	Surface water flood risk associated with sewer network.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR110 - Durdar Road	NY404513	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	AoR116 - Vallum Close	NY405572	Flooding noted at this location in the past for 3 dwellings. Overland flow is the primary cause of the flooding.	• Placeholder for a future project.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR118 - Oaklands Drive	NY408530	Extensive flooding to 5 properties at this location due to a blocked culvert and overland flows. Flooding close to Durdar Road at Hammonds Pond due to issues with the watercourse outfall into Wire Mire Beck from the Ridings Story Homes estate.	• Initial Assessment Study was completed in 2018. • Story Homes delivered a flood alleviation project in 2019 / 2020 to divert the culvert and prevent overland flows. • Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR120 - Steele's Bank, Wetheral	NY464542	The overall cause of flooding is most likely a result of localised heavy rainfall and under capacity of the public sewer system along with excessive surface water runoff.	• Initial Assessment Study was completed in 2013. • UU working on a solution but currently not economically viable. • Highways have done work on the combined sewers. Has now lessoned the risk of flooding.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR128 - Currock	NY402554	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR129 - Mayfield Avenue	NY419543	Flooding of two rear gardens resulting from overland flows from Inglewood Junior School. Failure of an existing SuDS scheme is the likely cause due to a lack of maintenance.	• CCC have undertaken drainage investigations work within the school grounds to better understand the cause.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR130 – Haig Road	NY419537	Flooding noted at Welsh Road / Hayton Road. Primary cause is all surface water drains into the combined sewer which is designed to a 1 in 30 year capacity. Ground water is also an issue at this location	• Further worked to be done by UU on the combined sewer. PLP suggested for residential properties (Riverside Homes)	There does not appear to be any European sites within the ZoI of this area. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites, however this action will be assessed further at a project level.
	AoR134 – Kingstown Road	NY394596	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area,	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
			therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.		significant effects to European sites/Ramsar sites.
	AoR135 – Mount Pleasant Road	NY404538	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR136 - Wigton Road	NY378544	Issues with properties on the Eastern side of Wigton Road which back onto Castlerigg Drive. Combined sewer is taking roof water which it is not designed to accommodate.	• Potential scheme as part of CSR2 to Sustainable Urban Drainage. • UU are undertaking extensive CCTV surveys to understand the number of cross connections in this location.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR137 – Westrigg Road	NY381542	Historic overland flows from Isabel Field to the north. SuDS scheme installed but had a further issue in 2019.	• SuDs constructed completed. • Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR111 - Longholme Road	NY424538	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR123 – Silverdale Road	NY427545	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR117 - Viaduct Estate Road	NY396559	Known flooding from main river potential from railway track and exceedance. Link to Caldew EA works.	• Initial Assessment Study was completed in 2013. • Debris in the flap valve has been cleared by the EA. This report recommends that the asset owner carries out routine inspections to ensure that the flap valve remains free from debris. • Watching brief.	This action is an inspection / desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	AoR132 - Gosling Drive	NY398582	Historic issues noted from main river from Gosling Syke affecting properties.	• EA have completed works in this area. • Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR133 – Edentown	NY395574	Last flooding event was within 2015.	• Etterby Terrace (EA funded scheme). • Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR101 - Borland Avenue	NY421552	This area frequently floods from surface water as a result of siltation of culverts.	• There is a need to construct a catch pit to collect silt to be able to less frequently and more readily maintain the culvert. There is also a need to undertake culvert repairs.	There does not appear to be any European sites within the ZoI of this area. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites, however this action will be assessed further at a project level.
	AoR103 - Thurstonfield	NY314566	The infrastructure was considered to be past asset life and partially collapsed. This leading to properties flooding bi-annually.	• Scheme completed. • Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR102 – Castle Carrock	NY542554	Surcharging of the highway drainage system during extreme precipitation events.	• In heavy rainfall events the drainage system overflows. Ideally incorporate a SUDS system on the village green. • To work with UU to work together on this to take water out and put into the combined sewer.	There does not appear to be any European sites within the ZoI of this area. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites, however this action will be assessed further at a project level.
	AoR0115 – Rockcliffe	NY358617	Surface Water flood risk due to an ageing and collapsing drainage network. The main cause of the flooding was the tidal surge up the Solway estuary combined with the low pressure weather system of Storm Eleanor. This resulted in 10 dwellings in the Rockcliffe Coast Road / School Lane area suffering from internal flooding.	• Initial Assessment Study was completed in 2021. • CCC have worked closely with the Environment Agency to understand the full scope of the flooding that has occurred. The Culvert to the north west of the estate needs surveying to determine its integrity including all culverts which feed into the system.	This action is an investigation and desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	AoR141 – Harraby Surface Water Investigation	NY420540	Surface water flooding for rear of properties.	• Scheme to be developed as part of the CSR2 programme.	There does not appear to be any European sites within the ZoI of this area. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites, however this action will be assessed further at a project level.
	AoR140 – Longtown Surface Water Alleviation	NY382686	Significant surface water flooding risk to 87 properties in a deprived area. Studies are required to examine the drainage infrastructure, remove surface water from the combined sewers along Old Road which are at capacity and a possible NFM to store surface water on Old Road.	• Scheme to be developed as part of the CSR3 programme.	This action is an inspection / desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites, however this action will be assessed further at a project level.
Brampton (PVA11)	AoR113 - Craw Park	NY533610	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR122 – Moat Side	NY533611	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk. This area is a low point linked to Brampton Beck.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR112 – Dacre Road	NY528616	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk. This area is a low point linked to Brampton Beck.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR114 - Brampton Town Centre Surface Water Scheme	NY528610	Study to Investigate 102 properties at significant Surface Water Flood Risk. Modelling at this location is required and may lead to a future project in this location to reduce the surface water flooding risk.	• Scheme to be developed as part of the CSR3 programme.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites, however this action will be assessed further at a project level.
South Lakeland					
Ulverston (PVA02)	AoR506 – Kennedy Street	SD303779	Very flat and low lying area with high groundwater. No apparent discharge for Kennedy Street drain and all surface water discharges into the UU combined system.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
			Potential issues with the hydraulic capacity of the UU system.		
	AoR560 – Beckside Road, Ulverston Surface Water	SD284788	Increase culvert capacity under Old Hall Road (30m length).	• Scheme to be developed as part of the CSR3 programme.	This action involves minor works, thus there is no potential for likely significant effects to European sites/Ramsar sites. This action will also be assessed further at a project level.
Bowness-on-Windermere (PVA03)	AoR532 - St Martin's Parade AoR548 - Crag Brow	SD403969 SD403969	Surface water flood risk shown by modelling. No confirmed reports of surface water flooding. Uncharted culverted watercourse likely to be present.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR533 - South Terrace	SD405971	On route of culverted watercourse and has previously experienced flooding from culvert exceedance and surface water.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR524 – Lake Road / Thornbarrow Road	SD405971 SD412976	Exceedance of culverted Main River has exceeded into connected drainage systems (private, public, and highway).	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR524 - Lake Road / Craig Walk	SD405971 SD406971	Complex series of culverted Main River and Ordinary Watercourses come together at this location. Exceedance has caused flooding.	• Part of the CSR3 programme. Look for opportunities to provide improvements to culverted watercourses.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR525 – Mountain Ash Court	SD408989	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR550 – Patterdale Road	SD406993	Overland flow from fells to the north partnered with watercourse exceedance has resulted in past flooding.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR558 – Bellman Close, Windermere	SD394940	Localised drainage infrastructure improvements and SuDS features.	• Scheme to be developed as part of the CSR3 programme.	There does not appear to be any European sites within the ZoI of this area. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites, however this action will be assessed further at a project level.
Ambleside (PVA03)	AoR504 – Greenbank,	NY375048	Surface water flooding from runoff coming off upper field which runs through the wall into the	• S19 Report was completed in 2017	This action is a desk-based exercise and does not involve any physical works. Therefore,

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	Ambleside Surface Water Flooding		student flats area across the garden through fences into other gardens.	• Design currently being progressed with EA and landowner.	there is no potential for likely significant effects to European sites/Ramsar sites.
Kendal (PVA04)	AoR540 – Collin Road	SD511912	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR541 – Bellingham Road	SD512909	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR537 - Blind Beck	SD514921	Surface water flooding has occurred around Blind Beck which is a karstic watercourse that usually has a dry channel and flows underground. Highly urbanised channel disconnected from any floodplain.	• Review catchment of watercourse, channel of watercourse, and routes for surface water to connect to channel. A study if required to be undertaken to understand improvements required to be made to the culvert.	This area appears to be over 300 m from River Kent SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR539 – Romney Road	SD515915	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR539 – Highgate	SD515922	On the 28th June 2012 an extreme rainfall event caused flooding in the Highgate and Kirkland area of Kendal. Nine commercial properties and parts of the Highgate and Kirkland sections of the A6 were affected by the surface water flooding. The A6 became impassable to vehicles for a time. The highway and public sewer drainage systems became overwhelmed with the surface water flow to the Highgate and Kirkland areas as it is likely their design criteria was exceeded by the rainfall event.	• S19 Report was completed in 2013. • Cleaning and improvement works have been carried out by both United Utilities and CCC Highways following the event, but it is unlikely that existing drainage systems would be able to cope with a rainfall event of this intensity. • Part of the CSR2 programme. Exceedance flood routing to be reviewed.	This area appears to be over 150 m from River Kent SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	AoR543 - Sandylands	SD525932	Initial flooding from Stock Beck occurred as the capacity of the underground culverted watercourse system was exceeded, followed by overtopping of the Stock Beck Flood Storage Basin.	• S19 report was completed in 2018. • EA project to be completed in 2023. Following this, watching brief.	This area appears to be over 500 m from River Kent SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR542 – Hallgarth	SD509942	Surface water runoff from multiple directions comes together and joins sewer causing surface water and sewer flooding.	• S19 report was completed in 2013. • Part of the CSR2 programme. Reviewing works to create a storage area to accommodate run off from extra highway gullies.	This area appears to be over 500 m from River Kent SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR508 – Lowther Park, Kendal	SD527923	Surface water flood risk from overland flows ponding in low lying area affecting up to 49 properties in the area. Flooding has also occurred due to infiltration into the public sewer.	• Surface water flood risk from overland flows ponding in low lying area affecting up to 49 properties in the area. Flooding has also occurred due to infiltration into the public sewer.	This area appears to be over 900 m from River Kent SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR512 - Rinkfield, Kendal	SD519909	Flood risk to properties if surface water in field exceeds. Contributions to flood risk from drainage exceedance.	• S19 Report was completed in 2016 • Watching brief. Project in design phase.	This area appears to be over 125 m from River Kent SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR554 - Low Garth	SD508940	Surface water flooding affecting 16 properties due to exceedance of drainage network.	• Currently in Design and construction phase - complete by end of July. Upsizing of existing of sw pipework and new pipework. Construction of SuDS pond.	This area appears to be over 600 m from River Kent SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR552 - Vicarage Drive, Kendal	SD515916	Properties affected by surface water flooding due to culvert in poor condition.	• Scheme to be developed as part of the CSR2 programme.	This area appears to be over 145 m from River Kent SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	AoR555 - Lindale Surface Water Scheme	SD416805	Ongoing surface water investigation is being undertaken in area. There is a moderate flood risk to properties. There is a need for local SuDS improvements.	• Requirement for local SuDS improvements. Scheme to be developed as part of the CSR3 programme.	The implementation of SUDs features is generally beneficial for the environment, therefore there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR510 - Middleshaw	SD415976	There has been overtopping of a watercourse 'Middleshaw Beck' on frequent occasions resulting in flooding of one property.	• Possibly remove restrictions of watercourses or provide exceedance routes. PLP.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Grasmere (PVA04)	AoR513 – Rydal, Grasmere	NY363063	Surface water flood risk from overland flow route from fields, along with blocked watercourse.	• S19 Report was completed in 2016 • Scheme has been designed, delivery planned for 2022.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Burton in Kendal (PVA17)	AoR546 – Burton in Kendal	SD530764	Surface water and ordinary watercourses from land to east causing flooding at various locations.	• Project in design phase for conveyance of flow away from Burton in Kendal. Look at NFM project to reduce flow into Burton in Kendal.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR514 – The Tannery, Burton in Kendal	SD528766	Flooding was a result of the extreme rainfall over a short period of time resulting in overland surface water flows from rural areas above the village, ground water and existing pipework/culverts become overwhelmed.	• Outline design complete.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR553 - Queens Square, Kirkby Lonsdale	SD610787	Abbotsgate culvert	• Scheme to be developed as part of the CSR3 programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Holme (PVA17)	AoR544 – Mayfield Avenue	SD522790	Groundwater flooding reported. Possibly related to perched soakaways and confinement from development platform related to previous development.	• Study required to understand any groundwater issues.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR545 – Milnthorpe Road	SD521788	Surface water flood risk shown by modelling. Culverted watercourse capacity issues.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	AoR511 - North Road	SD524789	Groundwater flooding through karstic limestone and issues with culverted watercourse (stone culvert) under North Rd.	• S.19 report completed 2018. • Part of the CSR2 programme to re-route highways culvert to be completely under road. • Following completion, watching brief.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Sedbergh / Kirby / Lonsdale / Tebay (PVA18)	AoR505 - Guldrey Rd, Sedbergh	SD651920	Surface water flooding due to run-off from upper fells towards Guldrey Lane and Rd area.	• Initial Assessment Study was completed in 2017. • Project being progressed as part of CRS2.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR509 – Main Street, Kirkby Lonsdale	SD611786	Legacy drainage capacity issues. Urban location.	• Placeholder for a future project.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR501 - Biggins Road, Kirkby Lonsdale	SD606784	Culvert exceedance and surface water runoff from fields gets conveyed by the public highway and can't get back into discontinuous drainage system.	• Potential for NFM upstream. Culvert route is unknown so could be plotted and improved where necessary. Exceedance flood routing. PLP and resilience measures for school and supermarket.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
Eden					
Keswick (PVA08)	AoR201 - Threlkeld Village	NY320253	This project will consider surface water flooding near to Blease Road in Threlkeld. Cumbria County Council have had several reports of internal flooding and multiple near misses to internal flooding for 5 properties. Up to 32 properties are currently within the 1 in 100 year outline.	• Part of the CSR2 programme. There is a need to consider SUDs features and upland attenuation to reduce flood risk to properties.	This area appears to be 300 m from River Derwent & Bassenthwaite Lake SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Penrith (PVA10)	AoR225 - Penrith Town Centre Surface Water	NY514303	Reduction of surface water flood risk to properties by undertaking infrastructure improvements.	• Infrastructure improvements required. • Scheme to be developed as part of the CSR3 programme.	This area appears to be over 1 km from River Eden SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
					sites/Ramsar sites. This action will be assessed further at a project level.
	AoR223 - Stainton, Penrith Surface Water Scheme	NY485280	Reduction of surface water flood risk through the introductions of SuDS features.	• Scheme to be developed as part of the CSR3 programme.	The implementation of SUDs features is generally beneficial for the environment, therefore there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR227 - Cliburn Surface Water Scheme	NY587247	This project will look to use a combination of SuDS and NFM features to attenuate water away from properties.	• Scheme to be developed as part of the CSR3 programme.	The implementation of SUDs features is generally beneficial for the environment, therefore there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR224 - Renwick, Cumbria	NY597434	Property level protection will be installed on 9 properties to reduce the risk of internal flooding from a surcharging Ordinary Watercourse at the north end of the village.	• Scheme to be developed as part of the CSR3 programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR228 - Temple Sowerby Surface Water Scheme	NY610271	The project will consider ways to reduce surface water flood risk to properties through SuDS features.	• Scheme to be developed as part of the CSR3 programme.	The implementation of SUDs features is generally beneficial for the environment, therefore there is no potential for likely significant effects to European sites/Ramsar sites.
Gamblesby, Glassonby, Plumpton (PVA11)	AoR203 – Gamblesby	NY609395	Magnitude of storm event couldn't handle the volume of water. Sheeting off land. Watercourses have been diverted so caused exceedance and channels have been constructed quite narrow. Eastern side of village, the channel very narrow. One resident will not allow access to widen it, just put in a parking area - but not his land, has abandoned car, trailer/rubbish etc to consider widening that section.	• S19 Report was completed in 2014. • Some NFM done with ERT in the catchment above and some improvement done on A686 by Highways to redirect waterflow to original catchment. Small scale interventions. • Watching brief	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR204 – Glassonby	NY576387	Surface Water Flooding Some work been done by Highways, acts as a corridor and channels through Glassonby. Channel towards a few properties and put in traffic cushions/gullies to collect it. Thought some NFM may help. Meeting with ERT approx 12 months ag, looking at similar project. Liaise with ERT. Will be difficult for upstream attention	• S19 Report was completed in 2014 • Part of the CSR2 programme. A requirement to assess SUDs and NFM to reduce flood risk to properties.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
			due to village layout. Have not had any repeat issues since the highways interventions above.		
	AoR205 – Plumpton	SP598483	Flooding during heavy rainfall event creating large volumes of surface water that overwhelms watercourse and in particular the culverted section from the B6413 to the A6. East side. Petteril Terrace, part of the EA and looking at issues.	• S19 Report was completed in 2016. • Previous work has taken place to clear culvert. Part of the CSR2 programme. There requires to be consideration of NFM, bunds etc.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Nent (PVA12)	AoR207 – Chapel Terrace AoR208 - Bruntley Meadows AoR209 - Overburn	NY782439 NY719460 NY720463	In 2013, 39 properties in 7 areas across Alston were affected by flooding from Main River, ordinary watercourses, surface water and surcharging drainage systems. This is linked to surface water runoff down carriageways. A historic Mill Race to which drainage feeds is likely to be main driver of flood risk in the area.	• Initial Assessment Study was completed in 2020. • CSR2 scheme ongoing, possible tree planting still to be implemented.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR210 – Station Road	NY717465	Surface water flooding affecting a number of properties in heavy rainfall.	• Some repairs were carried out following Flood Investigations and the site will continued to be monitored. Partly considered with EDC along with adhoc repairs and modification and no longer had any issues at this site. • Watching brief.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR211 – Nentsbury	NY759451	Surface water flooding and overtopping from Ordinary watercourse.	• Water improvements worked have been completed by the Coal Authority and make improvements as part of their scheme. Further Natural Flood Management interventions required. • Watching brief as improvements completed by the Coal Authority.	This area appears to be 300 m from Tyne & Nent SAC, with no existing ecological pathway. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
Greystoke (PVA13)	AoR213 - Greystoke	NY440308	Greystoke has been affected by localised surface water flooding in the past at Howard Park. 4 residential properties as well as gardens and roads have been flooded frequently (2 – 5 years). Looking at NFM with Rivers Trust and Natural England - NFM and storage. ERT doing some NFM between Greystoke and Johnby Hall. Working with Local Landowner to consider more works on Greystoke Castle.	• S19 Report was completed in 2016 • Part of the CSR2 programme. Upsizing of culvert through Howard Park. NFM solutions to provide upland storage and slow the flow. Maintenance of ordinary watercourse.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Shap (PVA14)	AoR226 - Croglin, Croglin Beck Cumbria	NY574472	Properties are affected by a combination of flooding from an Ordinary Watercourse and surface water. An appraisal to investigate the potential benefits of upsizing a drain/culvert through the village is required.	• Scheme to be developed as part of the CSR3 programme.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Sedburgh/Kirby/Lonsdale/Tebay (PVA18)	AoR215 – Tebay	NY618044	On the 5 December 2015 an extreme rainfall event (Storm Desmond) caused flooding in Tebay. It was in the Old Tebay part of the village that flooding to 13 properties took place. The flooding was caused by the cumulative effect of Storm Desmond and the three proceeding storms, which caused the ordinary watercourse Tebay Gill Beck to the south east of Old Tebay bursting its banks, the main river Lune spilling into the same area from the north and finally surface water from overwhelmed highway drainage on the local roads.	• Initial Assessment Study was completed in 2016. • Part of the CSR2 programme. Bunds are required to limit the exceedance of water from channel and overland towards properties. Potential partnership working opportunities with YDNP and Lune Valley Trust.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Kirkby Stephen (PVA19)	AoR216 – South Road/Birkbeck Gardens	NY770075 NY772076	Surface water flooding affecting properties from overland flow from fields, overwhelming the drainage system.	• Initial Assessment Study was completed in 2016. Appraisal completed in 2021. • Exceedance of Culvert capacity and part of the CSR2 programme. EA consultation as currently done through MSfWG meetings and working with UU.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR220 – Station Yard	NY769075	Surface water flooding affecting properties from overland flow from fields, overwhelming the drainage system.	• Initial Assessment Study was completed in 2016. Appraisal completed in 2021.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
				• Part of the CSR2 Programme. NFM to be explored.	
	AoR218 – High Street	NY773083	Main river issue. Exceedance of Croglam Beck in heavy rainfall.	• Initial Assessment Study was completed in 2016. Appraisal completed in 2021. • Following the appraisal, the EA to review this area of Kirkby Stephen.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
Barrow					
Barrow (PVA01)	AoR604 – Silverdale Street	SD202693	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR607 - Harrel Lane	SD213704	AoR on line of an historic watercourse which is partially culverted and partially within the UU surface water sewer. Exceedance occurs into combined system and onto the highway causing flooding to several properties.	• Scheme progressing. Investigation and modelling initially to explore options.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR608 - Abbots Vale	SD212694	AoR on line of an historic watercourse which is partially culverted and partially within the UU surface water sewer. No recent reports of flooding.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR612 - Wheatclose Road	SD207712	On line of historic watercourse, Problem has occurred during heavy rainfall, but not since 2012, gullies unable to cope with amount of water. UU upsized Combined system from 225 to 300mm, however flooding has returned. Unmapped culvert could be the key.	• Further investigation required into sewer hydraulic capacity with UU and Highways.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR606 – Longway	SD216689	Very flat, hydraulic capacity of combined system, also high water table. Short term flooding and to road only not property.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR609 - Flass Lane	SD218697	No recent reports of localised flooding but most likely sewer capacity / sewer flooding had caused backing up onto road. Appears that mapping	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
			does not account for positive surface water drainage.		significant effects to European sites/Ramsar sites.
	AoR623 - Friars Lane	SD215695	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Part of CSR3 programme to consider SuDs and local infrastructure improvements.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR610 – West Avenue	SD206701	Historic flooding to the south side of West Avenue from sewer hydraulic inadequacy. UU have carried out an improvement to increase capacity. Highway improvements and flood gate barriers fitted. No recent reports of road flooding, but flooding to the garden of house on the north side reported more recently.	• Investigation into surface water from the north.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR619 – Hindpool Road	SD192695	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR620 - North Road	SD189689	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR622 - Holebeck Road	SD222695	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR601 - Black Butts Lane	SD180681	Regular flooding of Black Butts Lane due to sewer hydraulic inadequacy.	• Further investigation with UU and Highways to see if there is a local improvement. Ultimate solution may revolve around Walney Channel rising main study.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR624 – Ewan Close	SD211701	Surface water flooding of up to 57 properties due to overland flow and sew capacity.	• Currently at options appraisal stage of the scheme. Project currently ongoing as part of the CSR2 programme.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
					sites. This action will be assessed further at a project level.
Dalton-in-Furness (PVA01)	AoR613 - Market Street	SD229740	Widespread integrated flooding across town including fluvial flooding, surface water ponding and exceedance of combined drainage network.	• Further investigation required.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR614 - King Street	SD233743	Widespread integrated flooding across town including fluvial flooding from the Poaka Beck, surface water ponding and exceedance of combined drainage network.	• Further investigation required.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR616 - Newton Road, Dalton	SD230715	Flooding to west side of road from 2012 localised storm. Water flooded from east of Newton Road to the west , contributed from tripped out pumping station. No flooding reports since.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
	AoR602 - Greystone Lane	SD232735	Road flooding from pond which has no natural outlet so is pumped to a UU combined system.	• Needs further investigation to provide sustainable SW drainage route from development site to west of pond.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
Walney Island (PVA01)	AoR17 – Amphitrite Street	SD178676	Originally flagged during the SWMP Strategic Assessment. No previous flooding in this area, therefore action not prioritised for delivery in this SWMP cycle based on lower predicted risk.	• Watching brief.	This action is a desk-based exercise and does not involve any physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites.
Allerdale					
Maryport (PVA09)	AoR309 – Gill Beck	NY052360	During Storm Desmond, small watercourses became inundated with roads becoming major flow routes for floodwater leading to the flooding of approximately 50 properties. Maryport has two small watercourses that join the larger River Ellen before flowing out to sea, Eel Syke and Gill Beck.	• S19 Report was completed in 2017. • Main river issues, the EA are monitoring this area. • Watching brief.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR306 – Main Road	NY025348	During Storm Desmond, small watercourses became inundated with roads becoming major flow routes for floodwater leading to the flooding of approximately 50 properties. Maryport has two small watercourses that join the larger River	• S19 Report was completed in 2017. • Watching brief.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
			Ellen before flowing out to sea, Eel Syke and Gill Beck.		sites. This action will be assessed further at a project level.
	AoR306 – Grasslot Street	NY033358	Grasslot Street is at pluvial and fluvial risk as a product of undersized poor condition drainage infrastructure. The last significant event occurred in December 2015 during storm Desmond. The onset of flooding is considered to be a circa 1 in 30 year event.	• S19 Report was completed in 2017. • Currently part of the CSR2 programme to review NFM improvements. There is a need to improve flows to reduce flood risk.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Flimby (PVA09)	AoR302 – Flimby	NY020338	During Storm Desmond, watercourses became inundated with road becoming major flow routes for floodwater leading to the flooding of approximately 100 properties. Rainwater poured off the hillside, washing away footpaths in Flimby Great Wood, and inundating watercourses and surface water systems through Flimby before flowing out to sea.	• S19 report was completed in 2017. • Part of the CSR2 programme. This project will consider all areas at surface water flood risk that were not considered as a part of the Flimby scheme undertaken by the EA. Flimby regularly floods and works is required to improve upland storage through NFM measures and to undertake works to the existing surface water network. • Fothergill watching brief.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Seaton (PVA09)	AoR308 – Seaton	NY018311	During Storm Desmond, small watercourses became inundated with roads becoming major flow routes and failure in infrastructure becoming compromised this resulting in the internal flooding of 9 properties	• S19 Report was completed in 2017 • EA completed work to Ling Beck. Minor works been completed by CCC on Lowca Lane. • Watching brief.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Ewanrigg (PVA09)	AoR307 – Ewanrigg	NY042355	Flooding of roads and grassland.	• Working with developer. Separate surface water system to ordinary watercourse.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Hindrigg (PVA09)	AoR304 – Beech Hill	NY152428	Small degree of flooding from surface water ponding in the past. 5 properties affected.	• Watching brief	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
			The car park and roads flooded previously.		significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Cockermouth & Workington (PVA09)	AoR314 – Workington Flood Risk Study	NX997282	There have been multiple near misses in relation to Surface Water flooding in Workington. The surface water flood maps also show multiple locations which are at significant and very significant flood risk. There is a need to consider the impacts of climate change on the surface water network to understand SuDs and infrastructure upgrade requirements.	• Scheme to be developed as part of the CSR3 programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Copeland					
Cleater Moor (PVA05)	AoR406 – Parkside	NY032153	Surface water and fluvial	• Watching brief and monitor through MSfWG	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR403 – William Morris Avenue / Orchard Place	NY024148	Issues with ground water and surface water run off during weather events, low lying properties next to the carriageway suffer from flooding and water running from high ground enters the rear properties on the frontage of the B5295.	• Appraisal ongoing to understand surface water flood reduction.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR409 – Norbeck Park, Cleator Moor	NY012154	Historical issues with the culvert inlets to the main rivers which was resolved through work undertaken by the EA.	• Appraisal ongoing to understand surface water flood reduction.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Egremont (PVA05)	AoR408 - Greenmoor Road	NY008111	Surface water flood risk associated with the combined sewer systems results in frequent flooding.	• Currently on CSR2. To work with UU to determine action on this scheme.	This work is currently ongoing and will have been assessed at the project level already.
Woodend (PVA05)	AoR407 – Woodend	NY219272	Woodend Farm suffered from flooding on 30th August 2012 and again 17th October 2012. The main cause of the flood was that an Ordinary Watercourse is restricted by a culvert which carries the watercourse under a road outside Woodend Farm. A major contributing factor is that surface water is brought to the same location by the roads and fields.	• S19 report was completed in 2013. • Interventions from Highways have previously taken place. Watching Brief. To be monitored by MSfWG.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
Lingla Beck (PVA05)	AoR402 – Mill Street	NY033172	Past flooding due to debris building up in Lingla Beck, reducing capacity to manage high flows.	• Maintenance schedule to be agreed.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Ennerdale Bridge (PVA05)	AoR409 – Kirkland Road	NY070161	Properties suffer flooding due to close proximity to water course, which when runs with high volumes surcharges back up the surface water system causing carriageway flooding which then effects properties nearby.	• Undertake an appraisal to understand if any surface water flooding reductions can be made.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Whitehaven (PVA06)	AoR410 – Victoria Road	NX982191	Surface Water flooding from the fields being Victoria Road, Whitehaven during a rainfall event on the 17th October 2012. Heavy prolonged rainfall onto saturated steeply sloping ground caused the following. The resulting surface water runoff overwhelmed any land drainage that was in place at the bottom of the sloping ground and flowed through gardens and between properties onto the road, causing some flooding on the other side. Pluvial flooding rather than fluvial	• S19 report was completed in 2014. • Working with National Highways to determine action on this scheme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR411 – Whitehaven North	-	Multiple flooding mechanisms contribute in this area, Fluvial, Pluvial and also tidal flooding, main rivers and minor water courses outfall into or near harbour, under right conditions this can lead to multiple areas being affected through surface water flows and surcharging of drainage systems.	• Agreement in place with Whitehaven harbour commission to monitor harbour water levels to minimise flooding upstream during weather events, various partnership working with EA, UU and CBC to monitor and reduce risk of flooding. • Watching brief through MSfWG.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR412 – Hensingham	NX987167	Historical issues with culverts and local highway drainage, various investigations with partnership have taken place to reduce impact of flooding in this area.	• Partnership working with UU, HA, CBC and developers to try and reduce flooding impacts. • Currently working up scheme for this area.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	AoR413 – Whitehaven Centre	-	Historical issues with UU surface water system in this area, surcharging in storm events which causes highway flooding which impacts properties below road level.	• Partnership working with UU, HA to reduce impact of flooding. UU are working up a scheme for this area.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR414 – Meadow Road	NX983156	Historically surface water and overland flows would affect the highway and have potential to impact on properties.	• Various small works have been undertaken by landowners and CBC to reduce risk. • Watching brief through MSfWG.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR415 – Mirehouse West	NX983154	Historic issues with the main river of Pow Beck caused property flooding in the 2000's.	• Maintenance projects have been undertaken since which have resolved the issues. • Watching brief through partnership working with EA and CBC. Part of the CSR3 programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR418 – Rosebank	NX988166	Historic issues in this area believed to be connected with a culvert on Egremont Rd which was blocked causing surcharging of the system upstream on Rosebank.	• Highway Authority repaired damaged section of culvert and this appears to have resolved the issue. • Watching brief through MSfWG.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR434 – Duke Street	NX975182	Localised drained connected to the culvert struggles to cope with exceedance during in storm events and floods the area as the culvert connects to the harbour.	• Agreement in place with Whitehaven harbour commission to monitor harbour water levels to minimise flooding upstream during weather events, various partnership working with EA, UU and CBC to monitor and reduce risk of flooding. • Recent survey identified maintenance that requires to be undertaken. A maintenance schedule to be reviewed and agreed.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	AoR437 - Snebra Beck, Whitehaven	NX979168	Surface water flooding during heavy rainfall events.	• Investigate NFMs and drainage infrastructure improvements required. • Scheme to be developed as part of the CSR3 programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR438 - Lakeland Avenue, Woodhouse, Whitehaven	NX968162	The project will look at local improvements to drainage infrastructure and SuDS features.	• Scheme to be developed as part of the CSR3 programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR439 - Honister Road, Whitehaven	NX985154	The area suffers from frequent flood as a result of under capacity and poor condition drainage infrastructure. Can lead to frequent onset of flooding to highway and properties where there are low level thresholds.	• Scheme to be developed as part of the CSR3 programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR440 - Coach Road, Whitehaven	NX975174	Flood risk at Coach Road is from a UU combined sewer and highway sewers. Flood risk is also linked to high levels on Pow Beck.	• Scheme to be developed as part of the CSR3 programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Parton (PVA06)	AoR420 – Parton	NX979205	Historic flooding issues in the past (20 years). Tidal flooding, fluvial and pluvial.	• Potential for culvert improvements and need to deal with high water levels in the drainage network as a result of high tides and Storm events.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Sandwith (PVA06)	AoR416 – Sandwith	NX964146	Sandwith suffered flooding during the excessive rainfall events of the 22nd June and the 30th August 2012. The main cause of the flooding appears to be from surface water runoff from fields previously saturated by a succession of rainfall events, some with durations of nearly 24 hours. Changes in land management practises contributed significantly to flooding in some areas. Blocked highway drainage also contributed to the flooding but this is not usual under the circumstances. The drainage is designed to drain the highway and has insufficient capacity to deal with runoff from large areas of land.	• S19 report was completed in 2014. • Dealing with on a small scale work for our programme. Construction of a swales and tabletop in highway to divert surface water flows away from vulnerable properties.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
Moresby Park (PVA06)	AoR417 – Moresby Park	NX999186	Historic flooding issues at Station House, School Brow, Moresby parks. Surface water systems capacity isn't large enough which outfalls through a sandstone culvert underground across new private estate to watercourse heading to low Moresby. The Culvert manhole surcharges and enters the foul system causing flooding at various point within Moresby Parks including Station House.	• CCC working with potential developer on a proposed site at School Brow to install an overflow pipe from the culvert manhole through the new development site and outfall into an attenuation pond before linking up with the watercourse that's runs to Low Moresby. Designs need to be finalised but this should reduce surcharging of the culvert manhole and stop surface water overflow getting into the foul system.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Bootle (PVA015)	AoR421 – Mill Street	SD108882	Flooding from river overtopping. NFM has been done however flooding is still an issue.	• Currently arranging CCTV to understand the culvert in this area. • Currently further assessing this area to understand issues. Following results of the assessment, a future scheme will be considered in Partnership with WCRT.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR422 – Annaside	SD090866	Fluvial concerns.	• Watching brief	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR436 – River Annas, Bootle	SD085872	Surface water run-off from the lake district fells in significant rainfall events travels to the River Annas via overland flow. The river in circa a 1 in 20 year event breaches it's banks near to Hinninghouse Bridge flood farmland and properties.	• There is a need to consider NFM solutions to attenuate peak flow in order to avoid property flooding.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
Coastal					
PVA20 – Coastal	AoR5701 - A5087 Newbiggin Protection	SD269692	Options for highway protection	• An initial assessment to be completed as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
					sites. This action will be assessed further at a project level.
	AoR3702 - Solway Firth Erosion Study	NY074458	Investigating erosion risk to infrastructure and habitats	• Ongoing work progressing options as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR4702 - Seascale Coastal Erosion Protection	NY036009	Study to investigate options for coastal protection	• Initial assessment completed. Project currently ongoing as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR4703 - St Bees Coastal Erosion Protection	NX960117	Study to investigate options for coastal protection	• Initial assessment completed. Ongoing work progressing options as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR5702 - Morecambe Bay Erosion Study	SD350700	Investigating erosion risk to infrastructure and habitats	• Project currently ongoing as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR5703 - South Ulverston Integrated Flood Risk Management Scheme	SD303779	Surface water, river and coastal flood risk studies. Environment Agency project	• Initial assessment ongoing. Project currently ongoing as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR4701 - Millom & Haverigg Flood Alleviation	SD175802	Study to include coastal flooding risk as well as surface water flooding	• Ongoing work progressing options as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR3703 - Harrington North	NX988257	Protection to coastal path, former landfill site and railway	• Initial assessment completed. Ongoing work progressing options as part	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
	Shore Coastal Erosion Protection			of the CSR2 coastal programme.	European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR4704 - Whitehaven Harbour Flood Defence Capital Replacement Works	NX970184	Repairs to harbour walls	• Project currently ongoing as part of the CSR2 coastal programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR3704 - Workington Former Steel Works Site Coastal Erosion Scheme	NX985272	Coastal protection to development site	• Initial assessment ongoing. • Project currently ongoing as part of the CSR2 coastal programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR6703 - West Shore Park, Walney	SD170701	Develop a managed realignment strategy in readiness for when the current temporary defences are due to be removed	• Project currently ongoing as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR3705 - Oldside Landfill Workington	NX994304	Coastal protection to former landfill site	• Project currently ongoing as part of the CSR2 coastal programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR3706 - Dubmill Point Coastal Erosion	NY076454	Investigate viability of B5300 realignment inland	• Project currently ongoing as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR3707 - Allonby to Seacroft Farm Erosion Protection	NY080441	Investigate protection to wastewater and highway infrastructure	• Integrate with Allerdale Coastal Processes Study & Allonby Beach Management Study. Project currently ongoing as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR3708 - Siddick to Risehow (Flimby)	NY021340	Coastal protection to rail infrastructure. Watercourse outfall/beach management	• Project currently ongoing as part of the CSR2 coastal programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to

Action number	Area of risk	Grid reference	Issue	Actions and progress	Reason for screening out
					European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR3709 - Siddick to Risehow (Siddick)	NY003319	Coastal protection to Wastewater infrastructure.	• Project currently ongoing as part of the CSR2 coastal programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR3710 - Siddick to Risehow (Siddick)	NY008324	Coastal protection to windfarm infrastructure	• Project currently ongoing as part of the CSR2 coastal programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR3711 - Bowness on Solway Erosion Reduction	NY222627	Investigate options to protect private properties	• Project currently ongoing as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR4705 - Parton Combined Flood and Coastal Erosion Risk Study	NX978206	Tidal, fluvial & pluvial flood risk investigation	• Project currently ongoing as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR3712 - Anthorn to Cardurnock Coastal Erosion	NY180574	Green Estuary stabilization techniques to be investigated	• Project currently ongoing as part of the CSR2 coastal programme.	This action is a desk-based exercise and does not involve any initial physical works. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.
	AoR4707 - Whitehaven Rock Armour Capital Maintenance	NX972188	Reinstatement of rock armour	• Project currently ongoing as part of the CSR2 coastal programme.	There are no European sites/Ramsar sites within the ZoI of this project. Therefore, there is no potential for likely significant effects to European sites/Ramsar sites. This action will be assessed further at a project level.

Appendix C Cumbria LFRMS actions requiring further investigation at a lower tier of the planning system

Action No.	Area of risk	Grid reference	Issue	Actions and progress	Likely effects if action implemented	Is the action likely to have significant effects on European Site(s)	Potential measures that may help to avoid or mitigate potential effects, and recommendations for LFRMS
Carlisle							
Carlisle (PVA11)	AoR104 - Carlisle Centre	NY401563	Widespread flooding from the Rivers Eden, Petteril, and Caldew, plus flooding from other watercourses, surface water and drainage systems during Storm Desmond in December 2015 affecting 2,100 properties. Initially surface water and overwhelmed drainage systems affected a number of areas prior to defences being overtopped due to extreme nature of rainfall event. Further investigation is needed to understand how surface water can be better managed and how it is influenced by watercourses in the city.	• Initial Assessment Study was completed in 2017. • EA flood defence improvements.	Reduced flood risk.	This area is 200 m south of River Eden SAC. Given the proximity to the SAC and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	This action should be assessed fully at project level and project-specific recommendations should be made.
	AoR142 -The Green, Dalston	NY369500	Residents have currently built a small informal bund. The area is flooding twice annually as a result of under capacity drainage infrastructure and limited storage upstream.	• Scheme to be developed as part of the CSR3 programme.	Reduced flood risk.	This area is directly west of River Eden SAC. Given the proximity to the SAC and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	This action should be assessed fully at project level and project-specific recommendations should be made.

Action No.	Area of risk	Grid reference	Issue	Actions and progress	Likely effects if action implemented	Is the action likely to have significant effects on European Site(s)	Potential measures that may help to avoid or mitigate potential effects, and recommendations for LFRMS
Eden							
Keswick (PVA08)	AoR315 - St Kentigerns Close, Keswick	NY261240	The project will look at the potential for NFM and infrastructure improvements in order to attenuate more water upstream of Keswick in the event of heavy rainfall.	• Scheme to be developed as part of the CSR3 programme.	Reduced flood risk.	This area is located within proximity to River Derwent & Bassenthwaite Lake SAC, and Borrowdale Woodland Complex SAC. Given the proximity to the SACs and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	This action should be assessed fully at project level and project-specific recommendations should be made.
	AoR301 - Brundholme Gardens, Keswick	NY271237	Surface water flooding affecting 4 properties.	• S19 was completed in 2016. • Part of the CSR2 programme. Works almost complete, implementing a new surface system completely bypassing Brundholme Gardens.	Reduced flood risk.	This area is located within proximity to River Derwent & Bassenthwaite Lake SAC, and Borrowdale Woodland Complex SAC. Given the proximity to the SACs and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	This action should be assessed fully at project level and project-specific recommendations should be made.

Action No.	Area of risk	Grid reference	Issue	Actions and progress	Likely effects if action implemented	Is the action likely to have significant effects on European Site(s)	Potential measures that may help to avoid or mitigate potential effects, and recommendations for LFRMS
Kirkby Stephen (PVA19)	AoR222 - Pennine View Caravan Park	NY771074	Surface water flooding affecting properties from overland flow from fields, overwhelming the drainage system.	• Initial Assessment Study was completed in 2016. Appraisal completed in 2021. • Part of the CSR2 programme. Culvert improvements taking place 2022.	Reduced flood risk.	This area is directly west of River Eden SAC. Given the proximity to the SAC and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	This action should be assessed fully at project level and project-specific recommendations should be made.
Penrith (PVA10)	AoR202 - Pooley Bridge	NY470244	Flooding issues due to wave action associated during strong winds and prolonged heavy rainfall.	• S19 Report was completed in 2017. • As part of programme, hard engineering or NFM measures are required to be considered and implemented.	Reduced flood risk	This area is located directly adjacent to River Eden SAC. Given the proximity to the SAC and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	This action should be assessed fully at project level and project-specific recommendations should be made.
Shap (PVA10)	AoR214 – Shap	NY562153	Culverted system overwhelmed by volume of water during extreme flood events resulting in surface water flooding.	• S19 Report was completed in 2016. • Currently at appraisal stage of the scheme. Project currently ongoing as part of the CSR2	Reduced flood risk.	It is anticipated that this action will involve the creation of an offline storage area, therefore there will be possibility for likely significant effects to European sites/Ramsar sites such as River Eden SAC. This action will be assessed further at a project level.	This action should be assessed fully at project level and project-specific recommendations should be made.

Action No.	Area of risk	Grid reference	Issue	Actions and progress	Likely effects if action implemented	Is the action likely to have significant effects on European Site(s)	Potential measures that may help to avoid or mitigate potential effects, and recommendations for LFRMS
				programme. The project is seeking to provide upstream storage to reduce the flow towards the village.			
Copeland							
Millom & Haverigg (PVA16)	AoR427 – Holborn Hill AoR430 – Millom Centre AoR432 – Finch / Settle Street	SD169803 SD172803 SD171804	In Sept 2017 an intense rainfall event occurred. The rain overwhelmed the drainage systems and surface water began to rise, flooding an estimated 255 residential properties.	• S19 Report was completed in 2018. Initial Assessment was completed in 2020. • Currently part of the CSR2 programme. Construction of new flood prevention system to improvements to Surface Water Flood Risk which is combined with the public sewer system.	Reduced flood risk.	This area is located within proximity to Morecambe Bay SAC and Duddon Estuary Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided. .	This action should be assessed fully at project level and project-specific recommendations should be made.
	AoR428 - Mainsgate Road AoR431 - Wasdale/Oxford Street	SD174796 SD178796 SD175797	In Sept 2017 an intense rainfall event occurred. The rain overwhelmed the drainage systems and surface water began to rise, flooding an estimated 255 residential properties.	• S19 Report was completed in 2018. Initial Assessment was completed in 2020. • Currently part of the CSR2 programme. Construction of new flood prevention system to improvements to Surface Water Flood Risk which is combined with the public sewer system.	Reduced flood risk.	This area is located within proximity to Morecambe Bay SAC and Duddon Estuary Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	This action should be assessed fully at project level and project-specific recommendations should be made.

Action No.	Area of risk	Grid reference	Issue	Actions and progress	Likely effects if action implemented	Is the action likely to have significant effects on European Site(s)	Potential measures that may help to avoid or mitigate potential effects, and recommendations for LFRMS
	AoR429 - Moor Park	SD168800	In Sept 2017 an intense rainfall event occurred. The rain overwhelmed the drainage systems and surface water began to rise, flooding an estimated 255 residential properties.	• S19 Report was completed in 2018. Initial Assessment was completed in 2020. • Currently part of the CSR2 programme. Construction of new flood prevention system to improvements to Surface Water Flood Risk which is combined with the public sewer system.	Reduced flood risk.	This area is located within proximity to Morecambe Bay SAC and Duddon Estuary Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	This action should be assessed fully at project level and project-specific recommendations should be made.
Ravenglass (PVA06)	AoR426 – Ravenglass	SD084962	Heavy rainfall had led to overland flows running onto carriageway and then making its way down towards the lowest point at the railway bridge leading to property flooding, surface water outfalls onto beach which can be hindered by hightides and relies on flap valve to prevent tidal surcharging of the system.	• Section 19 report completed in 2012. Various small works undertaken since 2012 through Highway Authority to replace pipework and flap valves in local area, further works to take place 2022 with further interventions to reduce flood risk.	Reduced flood risk.	This area is located directly adjacent to Drigg Coast SAC. Given the proximity to the SAC and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	This action should be assessed fully at project level and project-specific recommendations should be made.
South Lakeland							
Burton in Kendal (PVA17)	AoR547 - Beetham	SD497794	During significant events the water depth in the river does not allow the surface water to discharge. This leads to backing up of water in the surface water network leading to flooding of 12 properties.	• S19 report complete 2021. • The scheme is currently in development. The project currently ongoing as part of	Reduced flood risk.	This area is located within proximity to Morecambe Bay SAC, Morecambe Bay Pavements SAC and Morecambe Bay Ramsar site. Given the proximity to the SACs and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential	This action should be assessed fully at project level and project-specific recommendations should be made.

Action No.	Area of risk	Grid reference	Issue	Actions and progress	Likely effects if action implemented	Is the action likely to have significant effects on European Site(s)	Potential measures that may help to avoid or mitigate potential effects, and recommendations for LFRMS
				the CSR2 programme.		impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	
Kendal (PVA04)	AoR503 - Carus Green, Kendal	SD513951	Flooding due to exceedance of culverted watercourse.	• S19 Report was completed in 2016. • Project ongoing to deliver flood relief culvert, watching brief thereafter.	Reduced flood risk.	This area is located adjacent to River Kent SAC. Given the proximity to the SAC and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided.	This action should be assessed fully at project level and project-specific recommendations should be made.
	AoR556 - Fairfield, Flookburgh	SD366760	Improvements to highway drainage.	• Scheme to be developed as part of the CSR3 programme.	Reduced flood risk.	This area is located within proximity to Morecambe Bay SAC and Morecambe Bay Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided. .	This action should be assessed fully at project level and project-specific recommendations should be made.

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	AoR551 - Yewbarrow Terrace, Grange over Sands	SD410781	The project will look to consider a seepage cut-off and overland cut-off route to exclude flood water from the vicinity of the properties. This may be achieved through Property Level Protection.	• Scheme to be developed as part of the CSR3 programme.	Reduced flood risk.	This area is located within proximity to Morecambe Bay SAC and Morecambe Bay Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided. .	This action should be assessed fully at project level and project-specific recommendations should be made.
	AoR507 - Kents Bank Road, Grange over Sands	SD402771	Surcharging combined system due to hydraulic capacity and highway drainage going into the combined system.	• This is on the CSR2 programme. It is likely SUDs features will be employed in order to reduce surface water in to the sewer system.	Reduced flood risk.	This area is located within proximity to Morecambe Bay SAC and Morecambe Bay Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided. .	This action should be assessed fully at project level and project-specific recommendations should be made.
Coastal							
Coastal (PVA20)	AoR3701 - Silloth Groyne Replacement	NY110540	Protection to promenade	• Initial assessment completed. Ongoing work progressing options as part of the CSR2 coastal programme.	Reduced flood risk.	This area is located within proximity to Morecambe Bay SAC and Morecambe Bay Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential	This action should be assessed fully at project level and project-specific recommendations should be made.

Action No.	Area of risk	Grid reference	Issue	Actions and progress	Likely effects if action implemented	Is the action likely to have significant effects on European Site(s)	Potential measures that may help to avoid or mitigate potential effects, and recommendations for LFRMS
						impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided. .	
	AoR3703 - Harrington North Shore Coastal Erosion Protection	NX988257	Protection to coastal path, former landfill site and railway	• Initial assessment completed. Ongoing work progressing options as part of the CSR2 coastal programme.	Protection to infrastructure.	This area is located within proximity to Morecambe Bay SAC and Morecambe Bay Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided. .	This action should be assessed fully at project level and project-specific recommendations should be made.
	AoR6701 - South Walney Landfill Site Protection	SD197640	Coastal protection to former landfill site	• Project currently ongoing as part of the CSR2 coastal programme.		This area is located within proximity to Morecambe Bay SAC and Duddon Estuary Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided. .	This action should be assessed fully at project level and project-specific recommendations should be made.

Action No.	Area of risk	Grid reference	Issue	Actions and progress	Likely effects if action implemented	Is the action likely to have significant effects on European Site(s)	Potential measures that may help to avoid or mitigate potential effects, and recommendations for LFRMS
	AoR6702 - Roa Island	SD232649	Implement the recommendations of the Roa Island Shorelink Study	• Project currently ongoing as part of the CSR2 coastal programme.	Recommendations implemented as per Roa Island Shorelink Study.	This area is located within proximity to Morecambe Bay SAC and Morecambe Bay Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided. .	This action should be assessed fully at project level and project-specific recommendations should be made.
	AoR4706 - Stubb Place and Eskmeals Coastal Erosion Protection	SD080908	Short-term protection to highway access to MoD site whilst long-term solution is investigated	• Project currently ongoing as part of the CSR2 coastal programme.	Protection to highway access.	This area is located within proximity to Morecambe Bay SAC and Duddon Estuary Ramsar site. Given the proximity to the SAC and Ramsar site and the early stages of design, further investigation will have to be done at a lower tier level because the potential impacts depend on detailed design and construction methods that will not be available until the scheme level. However at the LFRMS level there is no reason to conclude detailed design and the application of standard construction controls at the scheme level would not enable effects on European sites to be avoided. .	This action should be assessed fully at project level and project-specific recommendations should be made.

List of Acronyms and Abbreviations

AEP Annual Exceedance Probability

AoR Area of Risk

BBC Barrown Borough Council

CBC Copeland Borough Council

CSR2 Compehensive Spending Review 2021-2027

CSR3 Compenhensive Spending Review 2027-2033

Defra Department of the Environment, Food & Rural Affairs

EA Environment Agency

EDC Eden District Council

ERT Eden Rivers Trust

HA Highways Authority

HRA Habitats Regulatios Assessment

ICM Integrated Catchment Model

LFRMS Local Flood Risk Management Strategy

LLFA Lead Local Flood Authority

LVT Lune Valley Trust

MSfWG Making Space for Water Group

NE Natural England

NFM Natural Flood Management

NH National Highways

PLP Property Level Protection

PVA Potentially Vulnerable Area

RMA Risk Manageent Authroity

S19 Section 19 Flood Investiagtion Report

SAC Special Areas of Conservation

SWMP Surface Water Management Plan

SPA Special Protection Areas

SuDs Sustainable urban Drainage Systems

SWMP Surface Water Management Plan

UU United Utitilies

SuDS Sustainable urban Drainage Systems

WCRT West Cumbria Rivers Trust

YDNP Yorkshire Dales National Park