

**Local Flood Risk
Management
Strategy**

2022 to 2027



Cumbria County Council

**New Draft Local Flood
Risk Management
Strategy**

New Strategy Origins and Consultation

- Environment Agency 25 year Plan
- National Flood and Coastal Erosion Risk Management Strategy for England and Newly published RoadMap to 2026.
- Refocus and updated action plan from that of 2015 strategy
 - Extensive flooding in 2015 and for other incidents in previous years and subsequent years.
- Influences of Cumbria Innovation Flood Resilience Project
 - £6.5 M project looking at working with land and communities in different ways, seeking the right way forward across Cumbria to reduce risk of flooding.
- County Council Plan 2018 to 22
- Update Surface Water Management Plan (2021 to 2022)
 - Focus on Potential Vulnerable Areas (PVA's) and sub catchment Areas of Concern (AoC.)
- Communication Plan
 - Member, Officer, Risk Management Authorities and Public Consultation



Serving the people of Cumbria

New Strategy Origins

- Environment Agency 25 year plan
 - Green future for by improving the environment over the next 25 years.
 - By adopting this Plan we will achieve the goals below:-
 - 1. Clean air.
 - 2. Clean and plentiful water.
 - 3. Thriving plants and wildlife.
 - 4. A reduced risk of harm from environmental hazards such as flooding and drought.
 - 5. Using resources from nature more sustainably and efficiently.
 - 6. Enhanced beauty, heritage and engagement with the natural environment.
 - Policies
 - Using and managing land sustainably
 - Recovering nature and enhancing the beauty of landscapes
 - Connecting people with the environment to improve health and wellbeing

National Flood and Coastal Erosion Risk Management Strategy for England

- A nation ready for, and resilient to, flooding and coastal change – today, tomorrow and to the year 2100.
 - Climate resilient places: working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change
 - Today's growth and infrastructure resilient in tomorrow's climate: making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as infrastructure resilient to flooding and coastal change
 - A nation ready to respond and adapt to flooding and coastal change: ensuring local people understand their risk to flooding and coastal change, and know their responsibilities and how to take action

Refocus and updated action plan from that of 2015 strategy

- The aims of the local strategy
- to coordinate the resources available from people and organisations who have interests in flooding to maximise a reduction in local flood risk;
- to promote a wider understanding and awareness of flooding in Cumbria;
- to explain how everyone can play a part in reducing flood risk and “who does what”.

Flood Incidents in Cumbria (2012 to 2021)

The following is the number of section 19 reports produced for properties some internally and some externally in Cumbria since 2012.

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Flood Incidents, less than 5 properties	28	41	14	388	8	20	14	26	36	13	588
Flood Incidents, 5 or more properties	18	5	2	47	2	6	2	0	4	1	87
External Flooding	14	12	2	44	2	13	2	23	24	6	142
	60	58	18	479	12	39	18	49	64	20	817

Cumbria Innovative Flood Resilience project (CiFR)



Serving the people of Cumbria

Work Stream 1 Nature Based Solution (NFM at scale)



- Working rule of 10,000m3 per 1km2
- Utilising all the information gathered from the Cumbria NFM programme
- In addition to the flood benefits evaluating structures for phosphate, nitrogen and carbon
- Will be aiming to trial some new designs, looking at specific return period requirements



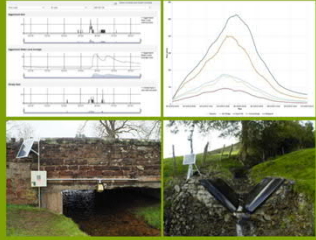
Work Stream 2 Farming and Community Officers




- New variant of National England Catchment Sensitive Farming officers with a flood and community remit
- Trusted intermediary between us and landowners
- To enable long term working on land for flood risk, farm sustainability, water quality and biodiversity
- Will help unlock funding from Countryside Stewardship/Environment Land Management/England Woodland Creation Offer to add value and additional funding to the project
- To help form closer relationships between the land and the towns



Work Stream 3 Monitoring, evaluation, modelling and mapping



- Lancaster University monitoring for hydrograph effects, individual features and water quality
- Gold standard of evidence, 5 minute data sets showing rainfall, level and discharge.
- Monitoring for water quality indicators
- Some monitoring devices already installed and first proof of concept model underway



6 Work Streams within CiFR

Work Stream 4 Community Preparedness and Resilience



- Surveying communities to understand their fears and aspirations (baseline underway)
- Helping communities to better understand their flood risk
- Supporting community preparedness; developing networks between community groups, sharing the knowledge of established community emergency planning groups
- Providing communities with access to funding to improve their capacity, training and equipment
- Taking a place based approach to resilience; improving the relationship with RMAs and emergency responders



Work Stream 4 Blended finance



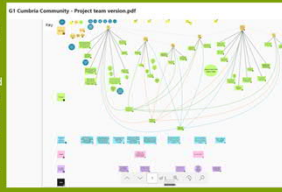

- Developing a set of measures that could be funded via private finance
- Stacking benefits and funding to achieve greater results
- Co-designing interventions to achieve greater range of results or to tackle specific fundable issues
- Demonstrating benefits by having independent academic research



Work Stream 6 Evaluation and Dissemination

Theory of Change is essentially a comprehensive description

Illustration of how and why a desired change is expected to happen in a particular context. It is focused in particular on mapping out or "filling in" what has been described as the "missing middle" between what a program or change initiative does (its activities or interventions) and how these lead to desired goals being achieved. It does this by first identifying the desired long-term goals and then works back from these to identify all the conditions (outcomes) that must be in place (and how these related to one another causally) for the goals to occur. These are all mapped out in an Outcomes Framework.

County Council Plan 2018 to 22

People in Cumbria are healthy and safe

Being healthy and safe is the foundation for wellbeing and pursuing aspirations. We want people to have access to the information and the tools to help keep themselves safe and as healthy as possible for as long as possible.

We want our children, young people and vulnerable adults to be protected from harm and be given the support they need to achieve their ambitions.

When people do need specialist or emergency help they should receive it. So, for example, when someone needs extra help at home, or to move to supported housing, or emergency help in case of flooding.



Places in Cumbria are well-connected and thriving

Connecting people and places is important to wellbeing and thriving communities. In the 21st century, social and digital connections are as important as physical connections. Maintaining and improving our road and rail infrastructure and transport services is important to enable people to access work, learning and business opportunities to fulfil their ambitions. Better digital connections via online and mobile channels across the county are needed now and will be even more vital in the future.

Social connections between people in communities and between communities are maybe even more important today. As the demands on existing public services increase and budgets reduce, the ability of communities to design and deliver their own solutions on their own or jointly with organisations to meet their own particular needs will be increasingly vital to creating thriving communities.



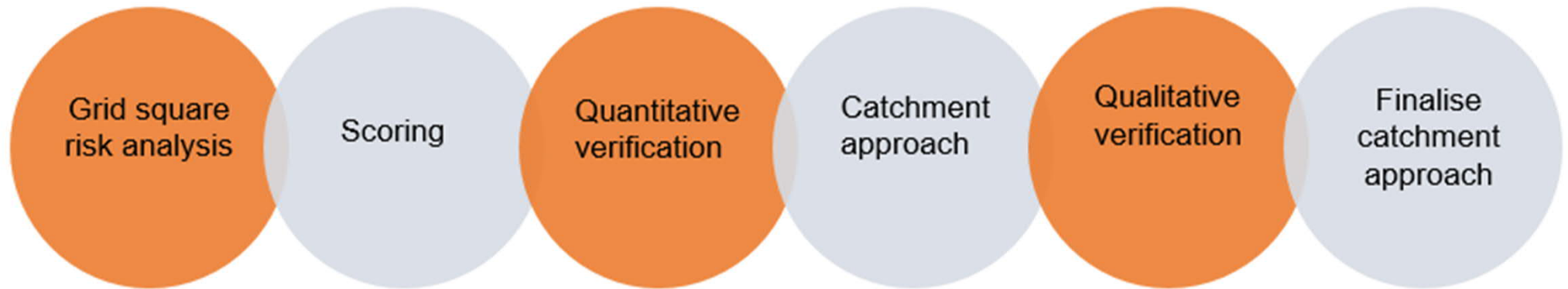
The economy in Cumbria is growing and benefits everyone

A growing and productive economy is important for the county to thrive; however, just as important is that everyone in Cumbria has the opportunity to benefit from economic growth. This means that good quality education and learning opportunities are open to all and people have access to the support they need to maximise their potential.

It also means that everybody should have the opportunity to secure a good job and businesses across Cumbria can be successful. To achieve these things, the county needs to attract investment to create new and good quality business and employment opportunities, as well as new homes.



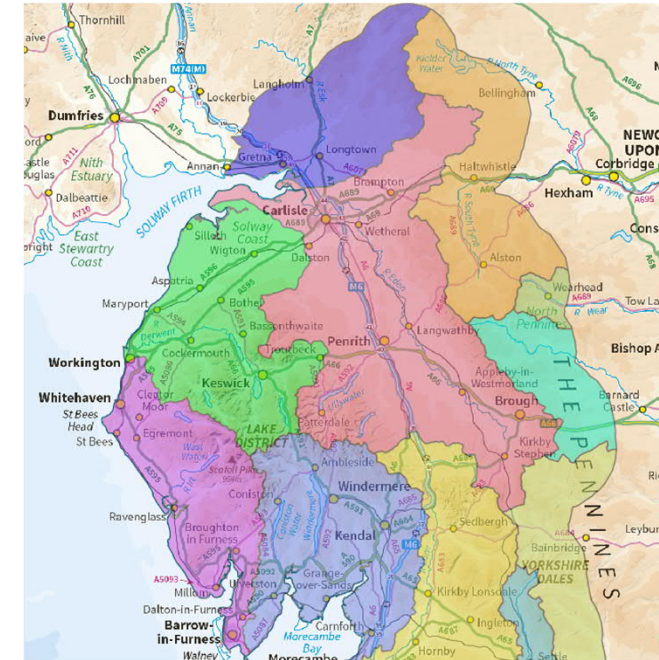
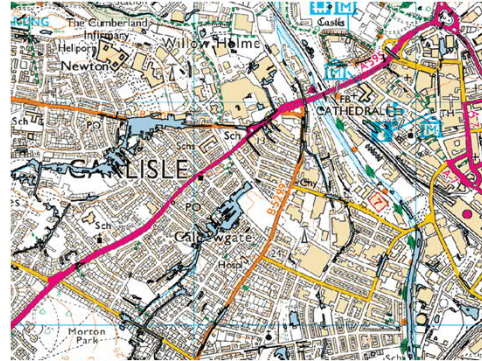
Cumbria SWMP



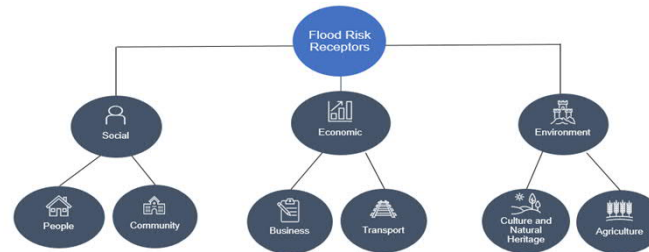
Cumbria SWMP Cont

A source – pathway - receptor - impact approach will be adopted using the following datasets:

- 1% AEP (1 in 100 years) EA surface water mapping
- 1km² grid cells across catchments
- EA National Receptor Database



Flood Risk Receptors and Indicators



Cumbria SWMP

Cont

Flood Risk Receptor Scoring

Category	Sub-category	Indicator
Social	People	No. of residential properties within 1% AEP flood extent
Social	Community	Important facilities within 1% AEP flood extent that could cause community disruption if affected e.g. school, hospital, with various grades of impact
Economic	Business	No. of non-residential properties within 1% AEP flood extent
Economic	Transport	Flooded transport links including roads, railways, and airports with various grades of impact
Environment	Agriculture	Land use providing value within 1% AEP flood extent
Environment	Cultural and Natural Heritage	Areas designated for natural heritage purposes and/or cultural sites such as UNESCO world heritage sites within 1% AEP flood extent

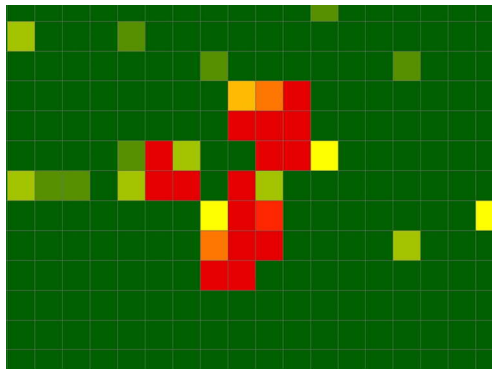
Grid Square Risk Categories

Grid Risk Category	Descriptor of Grid Square Receptor Risk	Grid Square Score
Very High	Four or more categories show a high flood risk, or 1 category shows a very high flood risk	>125
High	Two or more categories show a high flood risk	50-125
Medium	One category shows a high flood risk, or three or more categories show a high flood risk	25-50
Low	Five or more categories at low risk or three or more categories at medium risk	15 - 25
Very Low	Three categories at medium risk or 1 or more at low or very low risk	0 - 15

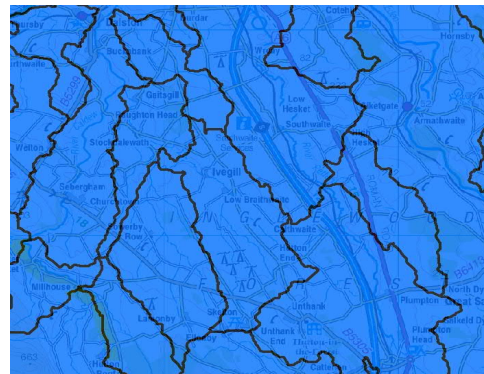
Cumbria SWMP Cont

Risk + Catchment = Potential Vulnerable Area Approach

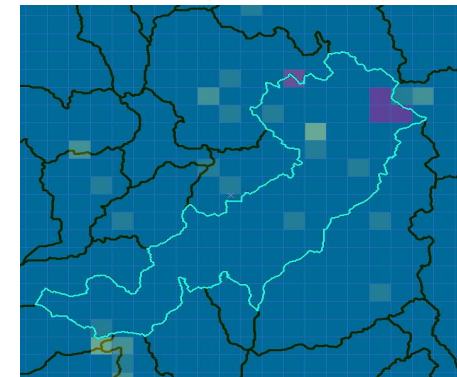
The identification of PVAs allows flood risk to be managed in a more holistic and joined up manner with connected impacts and benefits able to be assessed at a catchment scale



Classification of Risk

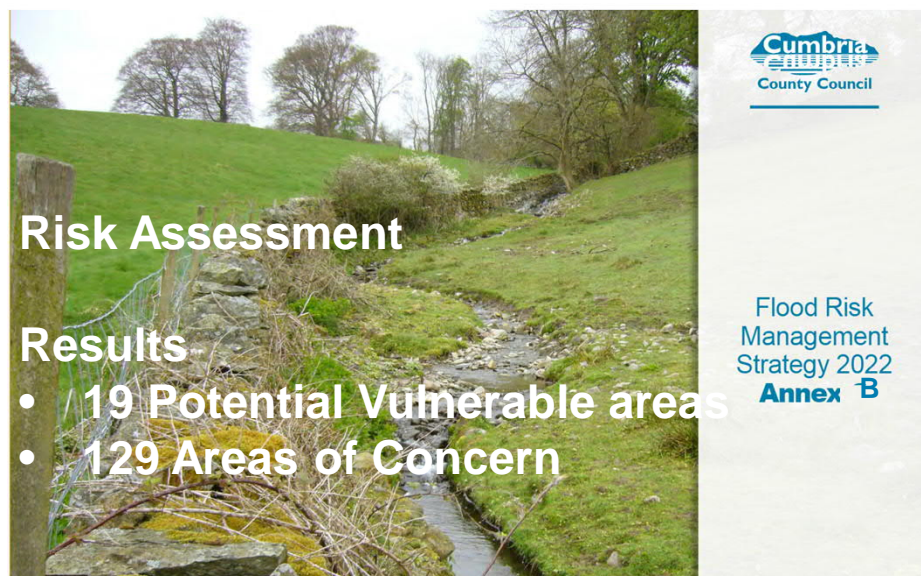


Catchment Areas



Potentially Vulnerable Area

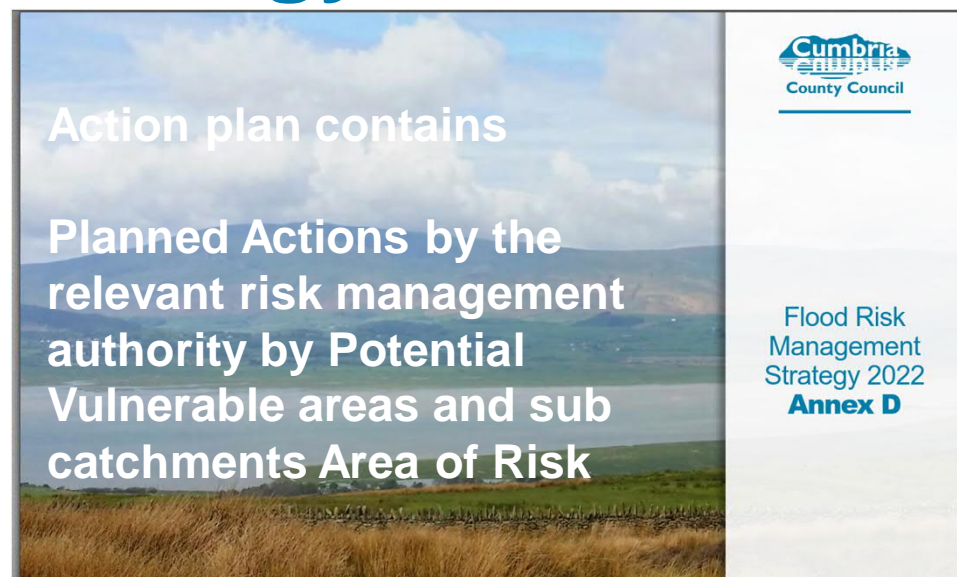
Annex B Looks at Risk Assessment and Annex D provides main Strategy Action Plan



Risk Assessment Results

- 19 Potential Vulnerable areas
- 129 Areas of Concern

Cumbria County Council
Flood Risk Management Strategy 2022
Annex B

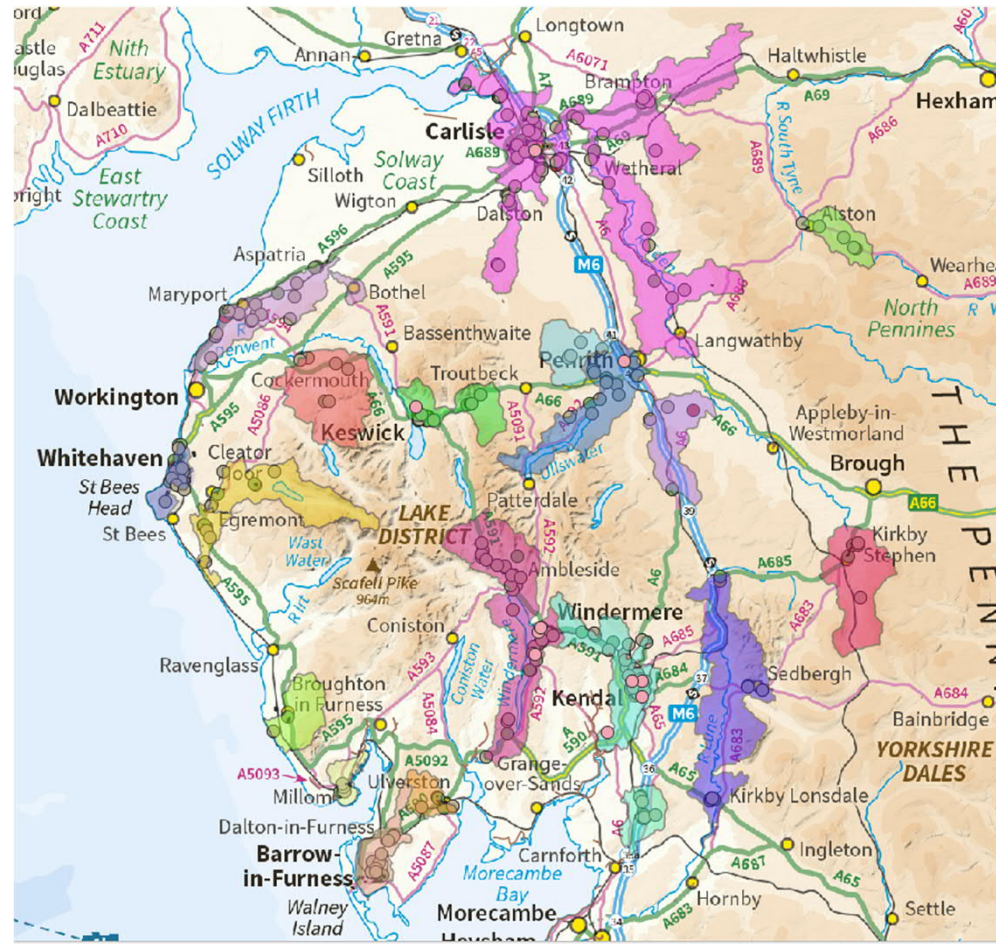


Action plan contains Planned Actions by the relevant risk management authority by Potential Vulnerable areas and sub catchments Area of Risk

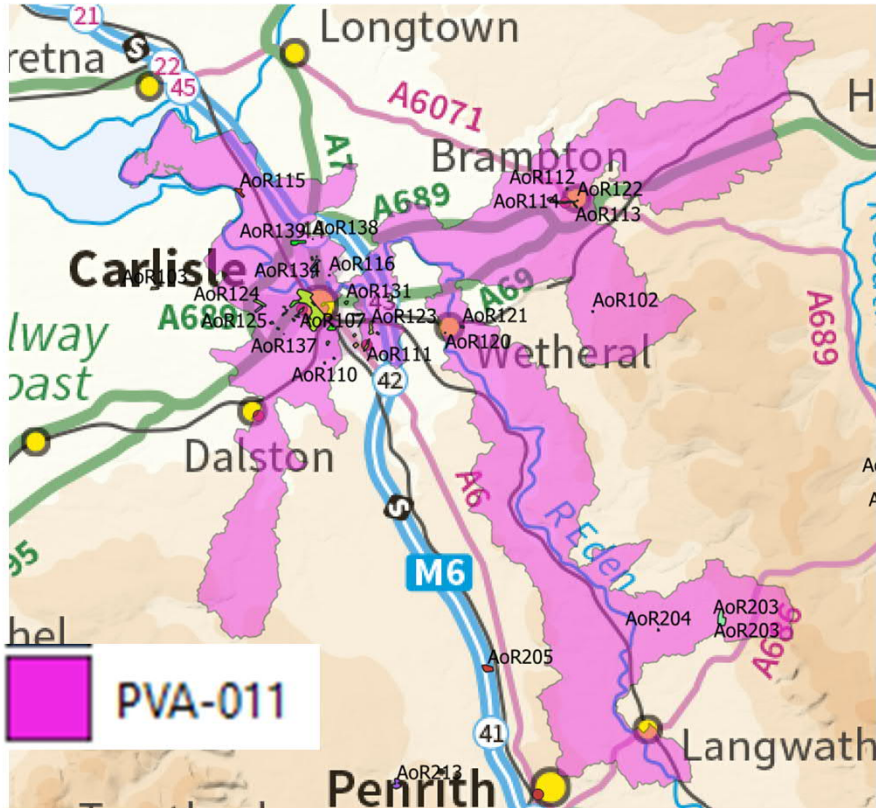
Cumbria County Council
Flood Risk Management Strategy 2022
Annex D

19 No Potential Vulnerable Areas for Cumbria

✓	☐	PVAs
✓	☐	PVA-001
✓	☐	PVA-002
✓	☐	PVA-003
✓	☐	PVA-004
✓	☐	PVA-005
✓	☐	PVA-006
✓	☐	PVA-007
✓	☐	PVA-008
✓	☐	PVA-009
✓	☐	PVA-010
✓	☐	PVA-011
✓	☐	PVA-012
✓	☐	PVA-013
✓	☐	PVA-014
✓	☐	PVA-015
✓	☐	PVA-016
✓	☐	PVA-017
✓	☐	PVA-018
✓	☐	PVA-019



Potential Vulnerable Area



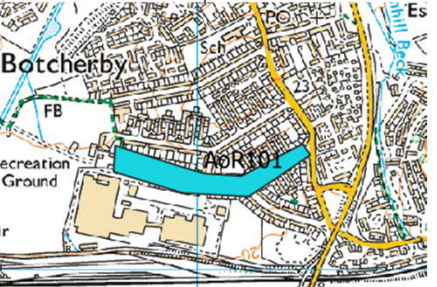
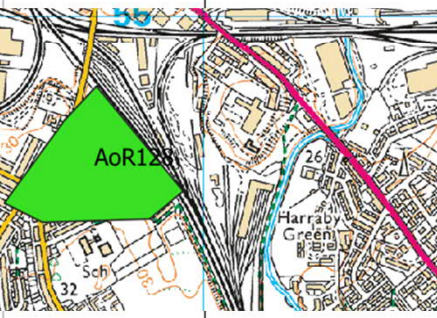
Areas of Risk
41No

Areas of Risk for Carlisle

Description	AoR	Description	AoR
Borland Avenue	AoR101	Sandy Lane	AoR121
Castle Carrock	AoR102	Moat Side	AoR122
Thurstonfield	AoR103	Silverdale Road	AoR123
Carlisle Centre South	AoR104	Green Lane	AoR124
Ivory Close	AoR105	Chesterholm	AoR125
Dalton Avenue	AoR106	Queensway	AoR126
Stanhope Road	AoR107	Newtown Rd	AoR127
Dunmail Drive	AoR108	Currock	AoR128
Skiddaw Road	AoR109	Mayfield Avenue	AoR129
Durdar Road	AoR110	Haig Road	AoR130
Longholme Road	AoR111	Brunton Crescent	AoR131
Daore Road	AoR112	Gosling Drive	AoR132
Craw Park	AoR113	Edentown	AoR133
Brampton Centre	AoR114	Kingstown Road	AoR134
Rockcliffe	AoR115	Mount Pleasant Road	AoR135
Vallum Close	AoR116	Wigton Road	AoR136
Viaduct Estates Road	AoR117	Westrigg Road	AoR137
Oaklands Drive	AoR118	California Road	AoR138
Huntsman Lane	AoR119	Westmoor Road	AoR139
Steele's Bank	AoR120		

Table D.2. Actions/measures that will be undertaken by the LLFA to reduce flood risk locally

The actions below have been taken from the Surface Water Management Plan - Action Plan.

Carlisle (PVA11)								
Action No	Area of Risk	Grid Reference	Issue Final	Actions and Progress Final	Lead Organisation	Timescale	Policies Served	
PVA011 - Carlisle	AoR101 - 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	
								
	AoR128 - 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	
								
	AoR102 - Ivorv Close	NY382556	Parham Beck which flows to the north is shallow in	Scheme is to begin imminently to	FA	CSR2	P1. P2. P4. P5	

New Strategy for 2022 to 2027

- **Main Document**

- Introduction
- Flooding in Cumbria
- Flood and Risk management Roles
- Objectives of Managing local flood risk
 - Policy Objective 1 (P1). Reduction in flood risk to the people of Cumbria.
 - Policy Objective 2 (P2). Increased knowledge and awareness of the factors affecting flood risk across Cumbria.
 - Policy Objective 3 (P3). Ensure that flood risk management is integrated within the planning process in Cumbria
 - Policy Objective 4 (P4). Facilitate close partnership working between all risk management authorities
 - Policy Objective 5 (P5). Improve Community Resilience through awareness of flood risk.
- Measures supporting the Cumbria Local Flood Risk Management Strategy
- Local Flood Risk Management Strategy Action Plan
- Next steps

New Strategy for 2022 to 2027

Public Summary

- **Public Summary**
 - Foreword
 - Executive Summary
 - Introduction
 - Flooding in Cumbria
 - Flood risk management roles in Cumbria
 - Objectives of managing local flood risk
 - Measures supporting the Cumbria Local Flood Risk Management Strategy
 - Local Flood Risk Management Strategy Action Plan
 - Next steps



New Strategy for 2022 to 2027

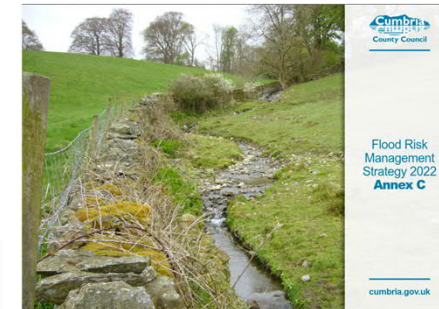
Appendices and Annexes

- **Appendices**

- 1 References
- 2 Glossary
- 3 Useful Information

- **Annexes**

- Annex A Governance and Partnership Arrangements
- Annex B Risk Assessment
- Annex C LLFA Duties Under the Flood and Water Management Act 2010
- Annex D Action Plan
- Annex E Strategic Environmental Assessment
- Annex F Habitats Regulations Assessment
- Annex G Water Framework Directive Assessment
- Annex H Equality Impact Assessment



Communication Plan

Member and Officer Consultation

Engagement with Members

- 6 No Local Committee meetings
 - 5 Highway Working Groups and 1 Local committee
 - June to September meetings

Engagement Internally/Strategic partners

- 6 No Making Space for Water Groups
 - EA, UU, Highways
 - Initial meetings already started regarding detailed action plan (ongoing)
 - Individual sessions planned to confirm Risk Management Authorities agreement to there data
- Senior Management Team (SMT)
 - Highways presentation planned and sharing of documents via teams (July)



Serving the people of Cumbria

Public Consultation

Engagement with the Public

- 6 No District Locations across Cumbria
 - 5 No Library Locations and 1 no shared location with EA in Kendal
- Web site to show
 - Full and Summary Documents
 - Mapping
 - Potential Vulnerable Areas
 - Areas of Concern
- Online Questionnaires for feedback

The screenshot shows the Cumbria County Council website. The header includes the council's logo and a search bar with the text "e.g. blue badge" and "in General information". The main navigation menu is on the left, with "Local flood risk management strategy" highlighted. The main content area is titled "Local Flood Risk Management Strategy" and contains several paragraphs of text and a list of downloadable documents. The documents listed are:

- Local Flood Risk Management Strategy Public Summary pdf 2,289kb
- Local Flood Risk Management Strategy pdf 1,457kb
- Annex A Governance and Partnership Arrangements pdf 736kb
- Annex B Risk Assessment pdf 1,815kb
- Annex C LLFA Duties Under the Flood and Water Management Act 2010 pdf 801kb
- Annex D Action Plan pdf 675kb
- Annex E Strategic Environmental Assessment Environmental Report pdf 4,949kb
- Annex F Habitats Regulations Assessment Scoping and Screening Report pdf 4,173kb
- Annex G Water Framework Directive Assessment pdf 1,991kb
- Annex H Equality Impact Assessment pdf 141kb

At the bottom of the page, there is a note: "This Strategy was adopted by Cumbria County Council on 26th March 2015 following public consultation in November-December 2014. As a 'living document', the Strategy along with the Action Plan and supporting assessments will be updated regularly. The next Cumbria Local Flood Risk Management Strategy to receive formal approval from Cumbria County Council will be published in 2021 following..."

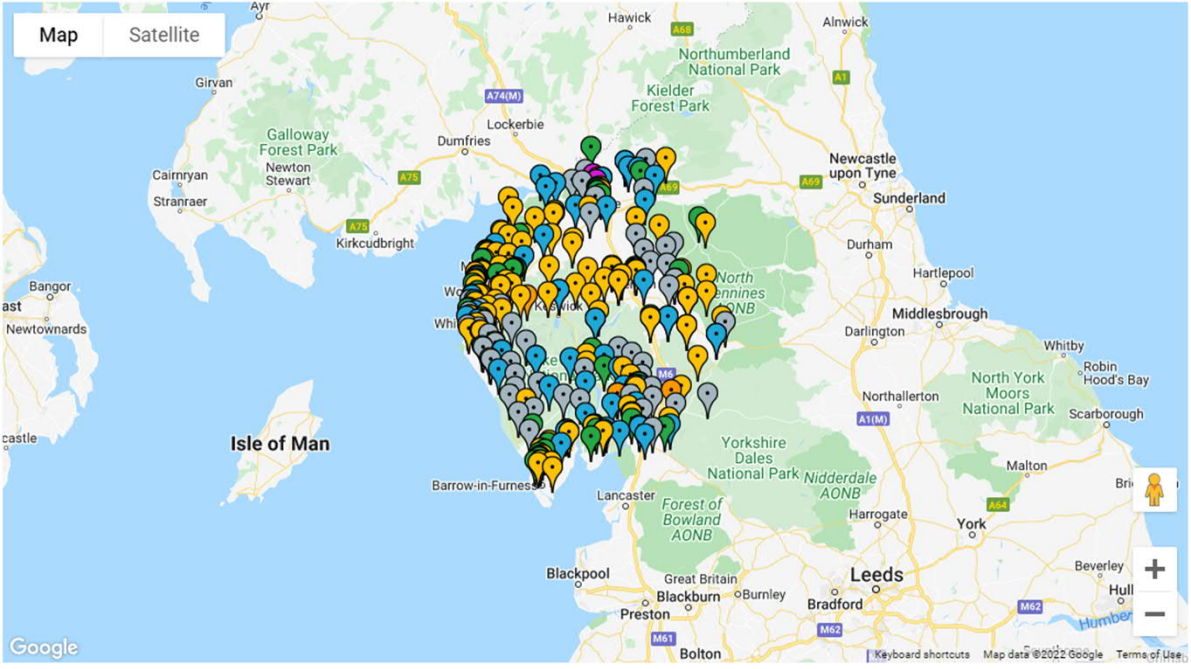



Serving the people of Cumbria







Public Consultation cont


Potential Vulnerable Area and Areas of Risk seen via mapping


This interactive map will help you find local support who can offer advice and help - including obtaining essential food and medicine supplies, during the CO










PVA  **PVAs**

-  PVA-001
-  PVA-002
-  PVA-003
-  PVA-004
-  PVA-005
-  PVA-006

AOR  **LFRMS_SWMP**

 **Areas Of Risk**

-  AoR101
-  AoR102
-  AoR103
-  AoR104
-  AoR105
-  AoR106
-  AoR107

Residents Association



Serving the people of Cumbria

Public Consultation cont

1. Do you think we have achieved the objectives in 2015?
 - a. Reduction in flood risk to the people of Cumbria
 - b. Increased knowledge and awareness of the factors affecting flood risk across Cumbria
 - c. Ensure that flood risk management is integrated within the planning process in Cumbria
 - d. Facilitate close partnership working between all risk management authorities
 - e. Improve Community Resilience through awareness of flood risk
2. Do you think there is anything else that we can do to meet the objectives?
3. What are your views on the Local Flood Risk Management Strategy Action Plan?
 - a. Carlisle Area
 - b. Eden
 - c. Allerdale
 - d. Copeland
 - e. South Lakes
 - f. Barrow
4. Are there any areas that have not been included in our Action Plan that should be?
5. Would you like to make any other comments?
6. Are you responding as:
 - An organisation
 - A member of the public
- If 'other' please specify
- If responding as an organisation please provide your details below

Online Web
Questionnaires
for feedback

Initi



Serving the people of Cumbria

Questions



Serving the people of Cumbria