

# Cumbria Flood & Coast Forum Report

20<sup>th</sup> October 2022

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Time: 0930 – 1600hrs  
Location: The Castle Green Hotel, Kendal  
Reporting and facilitation: 3KQ Ltd

## Summary

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### Aim and Objectives

The aim of this forum event was to “reconnect around flood and coastal risk and resilience in Cumbria”.

A wide range of organisations and people came together for the day to:

- Celebrate successes and achievements from the last two years.
- Share learning and practical solutions.
- Give attendees an opportunity to create new connections to progress their work.
- Look forward to how they might work together collectively into the future.

### Attendees

86 people attended the forum from 44 organisations (listed on pages 20-21). When asked what type of organisation they were representing, most respondents were from Community groups/NGOs (38%) or Local Authorities (31%), followed by Government departments/Agencies (21%) and Businesses (10%).

### Policy update

Representatives from Cumbria County Council and the Environment Agency presented an overview of flood and coastal risk, in the context of Cumbria’s local challenges and opportunities, and within the wider regional and national framework. Stakeholders were invited to ask questions via Slido<sup>1</sup>, and these were ranked by the number of people who indicated their support for each question. Topics ranged from funding to community engagement, and clarification was sought on the parameters used for predicting the impacts of climate change. Questions and answers are listed in full on pages 3-4.

### Breakout sessions

Stakeholders were invited to choose two out of four breakout sessions (Coastal, Place-making, Nature-based solutions, Emergency preparedness and response). A short summary of each discussion, followed by a detailed record of the breakout questions and answers can be found on pages 5-18.

There was a commitment to find a way to share the coastal strategy and other research more widely – possibly through the Flood Hub website. Also, to engage more with a broader range of communities.

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<sup>1</sup> Using Slido - [www.slido.com](https://www.slido.com) – online polling software

The place-making discussion underscored the importance of community engagement, a bottom-up approach and community buy-in.

For nature-based solutions, feedback emphasised the importance of partnerships, appropriate funding mechanisms, the need to deliver at scale and to remember to celebrate successes.

Discussion within the emergency preparedness and response breakout group focussed on community resilience. There was an awareness that, although there was a lot of good work happening, there were still “hard-to-reach” isolated rural communities with a lack of effective communications. Getting support and resources directly to community groups continues to be a priority.

### **Exhibition stands**

A range of organisations displayed visual information and materials at exhibition stands around the main function room. These are listed in full on p.23.

### **Looking ahead, next steps**

A County Council representative presented an overview of the upcoming Local Government Reorganisation for Cumbria and the implications for local services.

Finally, there was a request for people to feed in case studies and ideas, particularly within the four areas of interest covered by the workshops, to assist in future events and communications.

63% of attendees said they found the day “Very worthwhile” and 38% “Quite worthwhile”.

When asked about the benefits of attending, the majority (77%) cited networking and connecting with others, with learning and increased understanding also mentioned by several attendees. In other comments, participants requested more events in the future and that it would have been good to have the chance to attend more of the workshops.

## 1. Policy Update

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Angela Jones, Executive Director Economy and Infrastructure, Cumbria County Council, gave an overview<sup>2</sup> of how the Council have been dealing with the challenges facing the county, including the cost-of-living crisis, storm events and Local Government Reorganisation. She also highlighted the opportunities arising from funding coming into the county for projects such as the Local Nature Recovery Strategy and Cumbria's Coastal Community Forest.

There followed an update presentation from Stewart Mounsey, Area Flood Risk Manager, on the Environment Agency's National Flood Strategy and National Roadmap. The Strategy aims to increase resilience to climate change for communities and infrastructure. The Roadmap is an action plan to fund work to reduce flood and coastal erosion risk and includes a £6m Innovative Resilience programme being led by Cumbria County Council..

### Questions and answers following the Policy Update

Q: What does a 47% increase in peak flows actually look like on the ground?

A: These are significantly greater than Storm Desmond levels. The full implications of these scenarios are not yet fully assessed for Cumbria and need to be built into any strategic planning.

*There was a suggestion that a separate dedicated (probably online) session might be useful to discuss this further*

Q: Lots of press around cuts in public finance. Any suggestion/thoughts on how this will impact on EA/CCC work around flood defence or routine maintenance?

A: Not sure yet of the implications. There are significant challenges in the financial landscape. The key strategy for the local authority and partners is to have a pipeline of projects with a strong business case in order to be in a good position to apply for funding as and when specific funding streams become available. Additionally it has been important and will continue to be important to identify other sources of funding at the same time as maximising the impact of existing resources.

Capital investment in flood schemes fits within the government's pro-growth agenda which is helpful, though revenue funding is even more of a challenge than capital funding.

Q: What is the plan for sustainable funding for community groups in the future and beyond CiFR? Given that there is a greater reliance upon us?

A: There is a clear imperative to work with communities on this and many other areas. The new Councils have already stated a commitment to empower communities and put community engagement at the heart of their work. Need to keep the dialogue open and work to support the sustainability and financial viability of community groups. All partners need to consider this.

Q: Stewart showed us the 2080 forecast for increased peak flows... Is there an equivalent forecast for size/frequency of tidal surges and sea level rise

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<sup>2</sup> The policy update presentations are available at <https://thefloodhub.co.uk/cumbria/>

Yes, there is a wealth of data around this. If there is lots of interest on this and other projections we can run a separate briefing.

Q: Is the Cumbria Strategic Flood Partnership still in existence?

A: The Strategic Flood Partnership hasn't met since 2019. On the question of how the local government reorganisation process will deal with the Regional Flood and Coastal Committees: a current consultation includes the proposal for the existing Lead Local Flood Authority (LLFA) seat position for Cumbria County Council to be shared between the new unitary authorities; Westmorland and Furness Council, and Cumberland Council. The proposal is that these two unitary authorities will appoint 1 LLFA elected member to represent them as a group.

Q: How are you going to involve young people and their voice in your strategies for future proofing the county?

A: Acknowledgement that this is an area which needs more attention, although there is already engagement in areas where there are flood schemes through Department of Education involvement. There is work promoting STEM subjects, including via contractors and with an emphasis on encouraging young women to consider STEM subjects. There was an acknowledgement that school pupils are often well informed and ask 'tricky' questions about flooding and other related environmental issues. The Zero Carbon Cumbria Partnership is involving young people in its work. Overall there was an admission that more could be done including considering marginalised groups of young people such as care leavers.

Q: How will you engage communities without terrifying them (about climate change)?

A: Acknowledgement of fine balance between getting attention and making people aware of the seriousness of the situation without sending people into a panic. In particular the message that there is time to act but only if there is action now.

Further discussion:

- Kendal Flood Scheme: Life span to 2080 considered as part of the business case, however the rate of change in Cumbria results in a steeper reduction in the standard of protection a scheme gives. Budget for the Kendal scheme was £76m but is expected to go up due to rising costs etc. The business case is being updated next spring and a new estimate will be given at that point.
- Capability for everyone to utilise available assets: physical and in terms of people - highlight importance of developing skills for the future – need the right people and resources to be able to deliver. Huge talents and capability within Cumbria but could always do with more.
- Emphasis on the particular difficulty of revenue funding for maintenance of assets.
- Commitment to organise a session to go through climate change projections and forecasted impacts on Cumbria.

## 2. Breakout sessions

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### Coastal Strategy

#### *Summary:*

The discussion following the Coastal presentation<sup>3</sup> focussed on three broad areas – the modelling parameters used to predict the impact of climate change on coastal flooding and erosion; communication with communities over coastal risk; questions over funding; and specific questions relating to particular coastal locations.

A theme to emerge was that it would be helpful to have relevant research, advice and project information held in one, easily accessible place online – possibly the [Flood Hub](#).

#### *Questions and answers:*

Q: In your presentation, are you using the same assumptions as the Environment Agency (EA) on climate change and sea level rises?

A: There were a couple of slides on sea level rises which are related to the assumptions that are within the Strategy.

Q: Is there is a danger in using the EA assumption? How much warning do you give to residents and planners on worse case scenarios on the coastline?

A: The Shoreline Management Plan (SMP) does look to the future in timescales, 20 years (in which we are currently 10 years into the what the SMP talks about), 50 years and 100 years. This looks at the anticipated location of where the shoreline would be. We now need to look at what has been said in the past, by use of radar analysis, to see what is happening on the beach, modelling this information and using it within planning. This will be a key plan, which will be part of the Local Plans being produced in Local Government Reorganisation (LGR).

Q: Are all the actions based on the worst-case scenarios, based on 5m scenarios rather than 1m scenarios?

A: Doug Coyle (DC) to check and confirm this, it is more likely the lower / mid-point case scenario (100 years) rather than worse case.

#### **Action: DC to confirm if actions are based on worse case scenarios**

Q: If the actions are 1m scenario rather than 5m a scenario, is there is more a challenge?

A: Yes

Q: When we say no to planners or developers on the potential of flood risk, what level are we saying no - 4m, 5m?

A: We do not have a specific level. Developments on the coast look at existing defences and predicted change in flood risk. Last year we were looking at inland rainfall it was 40%, it's now 50% in terms of predicted changes.

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<sup>3</sup> Recordings of all four breakout group presentations can be found at <https://thefloodhub.co.uk/cumbria/>

Q: How much do you communicate to people that their house is at risk?

A: Information is already in the public domain, using the information online. There is an SMP explorer that can provide this information. From a Flood Risk and Coastal Change (FRCC) perspective, we would encourage transparency on what the risks are.

Q: How involved are we getting the parishes?

A: We have always looked to involve Parish Councils. There are coastal forums established for Copeland, Allerdale and Barrow which include Parish Councils as well as District and County Councils. As yet, there is not one at South Lakeland District Council, a key person has not been identified. Through these forums we look at works we are looking to do in terms of strategy, the actions and the programme of works being undertaken, there is definitely more dissemination required for the coast.

Q: Is there a priority list in Cumbria for coastal erosion?

A: County and District currently operate differently. Following LGR, Coastal will sit under Climate & Coastal Directorate rather than Highways, so there will be a different emphasis on approach and working with Communities. Cumbria Innovative Flood Resilience (CiFR) will look at how we work with communities (currently inland), and hope to apply this to coastal communities. In 2022 District and CCC members came together to develop Forums and invited parish council members. A publication has been produced, i.e. Local Flood Risk Management Strategy (LFRMS), which is available to take away today. Unitary will bring advantages, bringing planners and coastal communities together.

Q: Is there any advice available to private landowners that are close to the coast, building a new house, rebuilding a garden wall. Is there anything targeted in what they should consider?

A: LLFA is open to provide advice: questions normally come through a formal planning application. Early understanding on what is required, it's been a learning process since 2020 i.e. riparian landowners responsibilities. The Government website should provide the necessary information but Doug Coyle is happy to look at specifics as required.

Q: Where can you find the links for the Strategy?

A: The Strategy is held on the Cumbria County Website. The Action plan will be updated on an annual basis. Following the end of the Consultation, the maps will be available online. To make things easier going forward, information on what we are doing will be held on the Flood Hub going forward.

Q: Cumbria Coastal Strategy, this is the first time that residents of Cumbria have the chance to see these priorities and actions. As there is a strategy in place now, this now draws in funding. As we are now coming into LGR, how will this affect the Strategy, might we lose the capacity for future funding coming to Cumbria?

A: As we previously didn't have a strategy in place, this meant we could not demonstrate what we were doing in Cumbria. Now there is a strategy in place, this helps us work alongside other partners and other organisations to get the necessary funding required. We now have all the evidence in place to build into the EA programme, and present to Defra for funding. Schemes and investment are now in place to improve areas in Cumbria. The SMP

within LGR is not going to change, only being delivered by different authorities. The is currently a refresh of the SMP taking place, data is being continually collected.

Q: Are there any revenue blockers that is preventing the understanding of the coastline?

A: Lead Local Flood Authority (LLFA) funding is allocated from central funding. LLFA is still supported centrally and was previously £300k. Capital fund is used to make a change to an asset. Defra capital funding is essential to employ people for appraisal, studies, design and construction for the project we intend to deliver. Revenue supports the flood investigations of the coast.

Q: Are there any revenue from business and infrastructure owners, are there any threats, are they contributing?

A: We are working very closely with the Port of Workington looking at the concerns, getting information on the funding required, looking at the levelling up funding to see what is available. If we are having to do hard defences, we are looking to work with other partners for biodiversity. We are always looking within CCC and outside CCC i.e. Woodland Trust on erosion, tree planting etc.

Q: I grew up at Siddick, now live at Flimby, which is 500m from the coastline. We have lost 1000s of square meters over the last 40 years of recreational ground. Railway was built in the mid-1800s on a shingle beach. Over the years the sea has gone away from the railway line and the land built up, so much so, the farmers used to graze cattle on there and the locals played football on there. The railway is now a seawall, which the Edwardians built to withstand the sea.

If Network Rail (NWR) hadn't spent money on the rock armour, then Flimby would possibly disappear, along with part of Maryport and Allonby, affecting many communities as well as industries in the area. Coastal erosion is the biggest danger we face at the moment. Within the village of Flimby there is 6 outlets from the village out to sea. The EA have previously said that if they take the line back out to sea, they will lose the whole shoreline. In dry weather, when there is no water to clear these out, it builds up causing a blockage at the end of the outlet until there is sufficient pressure then blows itself out. Need to keep these outlets open, it stops the villages from flooding. The coastline is not there anymore for the enjoyment of the community and has been replaced by rock armour and the protection that NWR has put in to protect their asset.

A: One of projects we are currently looking at, is using a technique that has come from the Netherlands called beach nourishment. This is done by dredging the sea and putting it onto the beach, as the beach naturally progresses up to the Solway, it feeds into areas and become as a natural protection on the beach itself, rather than installing rock armour, to nourish and becomes a habitat – this could be an innovative way to address the Silloth project.

Q: For homeowners that have industrial site behind their homes, is it the homeowners responsibilities to protect industrial site? Specifically Ulverston

A: The EA have been looking at South of Ulverston over the last 4 years and the Strategy should look into property ownership and responsibilities.



Q: The issue in Morecambe bay, where the river channel moves over a period of time causing erosion. How much do you work with natural process and how much do you work against natural process to establish salt marsh etc?

A: There has been no modelling done previously to understand what the coast is going to do. We now have funding to study what the effects of the coast, does it stay where it is or move inland. There is a social economic aspect to the future, if we keep a hardened defence there and have inland flooding, this is what we don't have enough information yet back from the modelling. IDB might be a way of looking at a piece of land holistically. We may need to change land practices, land management in the future. There are people already out there working on the ground doing this work, so need to work with them and support them. Working with Natural England with farmers will be far cheaper than building flood defences on the ground. We have to work with nature and do things differently.

Q: The Rivers Trust, as part of the borderlands project, is looking at the potential for use of dredged materials from the ports in the Solway Firth. From the Scottish side of the Solway they are looking at research the conditions to see if it is suitable for salt marsh conditions. Are the modelling maps from the Radar publicly available?

A: The data set is held by the North West Coastal Group (NWCG). We are asking for more modelling of the whole coast to get all the information required. However, would be difficult to keep up to date.

**Action: DC to find out who to contact regarding this map information**

Q: Where are we with Independent Drainage Boards (IDBs)?

A: Legislation is required in terms of creating independent drainage boards (IDB), currently still going through Government, to look after areas of land, working with landowners to keep land dry and adapt to maintain that grassland. The EA are currently looking into this, a Project Manager has been appointed. Any levies have to be raised from everyone within the area, not just landowners.

Q: Within the Lyth Valley there are a few farmers concerned going forward?

A: IDB is likely to come along, they are currently working on legislation. The 1991 act meant they couldn't update any new IDBs. Lead Local Authority will have no responsibility in that IDB area and the EA will only have an overseeing role between drainage board, landowner and the community.

## Place-making

### *Summary:*

This session explored the impact of updated planning policy on flood risk, including how planning can play a key role in mitigating risk and creating more resilient communities<sup>4</sup>.

The design of new “garden village” near Carlisle - St Cuthbert’s village - was described as an example of how the development of Local Plans can feed into the creation of more sustainable development.

Discussion was on the broad themes of community engagement and communication; the definition of “place”; the role of developers; and specific questions relating to the design of the infrastructure and transport links of St Cuthbert’s village.

### *Questions and answers:*

Q: Are there any other garden villages in Cumbria?

A: No.

Q: Location confirmation:

A: St Cuthbert’s is a planned garden village of 10,000 homes to the south of Carlisle, incorporating the Carlisle Southern Link Road

Q: What did the community around St Cuthberts say they wanted?

A: Park concept and greenway has been really popular. Needs to be a destination in its own right, a really useable space.

Q: In this case, what stakeholder engagement was undertaken to develop the St Cuthbert’s plans?

A: Various public consultations: Masterplan, then individually for the different aspects and communities affected – each community had drop ins, the link road had a separate consultation. Partners, including housebuilders were also consulted. Other exercises: local school bridge making exercises including naming competitions.

Q: Will there be a higher proportion of affordable housing?

A: In theory yes, but viability will have an impact on the number. Should be at least 30-40%.

A: In practice, the developer will bargain SUDS against affordable housing figures.

A: National planning policy change would be needed to address this.

Q: Top down vs bottom up approach... can we consult more widely and strategically on these kind of developments in the future?

Q: Communication paradox:

A: Common issue of engagement – those opposed, engage early. Those in favour feel they don’t need to.

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<sup>4</sup> Recordings of all four breakout group presentations can be found at <https://thefloodhub.co.uk/cumbria/>

A: Potential for authorities to share community meetings of different groups and topics – cross feeding interesting groups.

Q: Place making can also be community led, through community engagement. How do we build in grass-roots community engagement? Example. Provide allotments, but not support to create an allotment society.

A: Design codes are the key to unlocking and can define the way communities are engaged. Consultation during covid was entirely virtual. Recognition that this cannot cover all interest in a community. Long term challenge is supporting the provided services and activities. Building / creating can be easy. Physical infrastructure is, in a way, easy. Social infrastructure is difficult to create, and not necessarily covered by “Codes”.

Q: How do you create a place that is socially considered a great place to live?

A: Timing of infrastructure delivery vs housing delivery is an important factor. But what is the market community? People who will live here in the future are still at school.

Q: How do we manage the commercial drive to enable green space over valuable housing?

A: Have a strong strategy at the core of the design, ensure its embedded in the local plan. This allows planners to manage challenges from developers.

Q: Is sustainable water management considered in all aspects of the design?

A: Consultation with United Utilities and with highways departments allows the networks to be planned to be sustainable.

Q: Can the strategic plan restrict property types or numbers to secure the sustainability of the development?

A: Unsure on the extent it could be done.

Comment: There is a conflict between our desired future, vs the future wanted by communities. Engagement with all cultures and demographics is key to ensuring that our aspirations match those of the future residents.

Q: The importance of the type and distribution of housing cannot be ignored. What type of carbon net zero or energy efficient home do people in the future want?

A: Great buy in from the energy sector investigating district heating.

Q: Is travel out of the garden village to local areas, not just travel to Carlisle city centre – active / sustainable travel?

A: Proposals considered for a busway to the rail station. Southern link road increases travel accessibility. Other than, nothing planned specifically – but it is recognised as a huge opportunity.

Q: Biodiversity Net Gain and Nutrient Neutrality – will these be delivered on site?

A: Yes – the project is delivered at scale so it is possible and planned in from the start.

Q: The difficult thing is getting the balance right – how a patch of land is balanced between infrastructure, SUDS, housing, affordable housing etc, developer profit. How do we balance this?

A: Once a local plan and policy is in place, it's easier. Otherwise its very challenging with such competing priorities.

Q: How can we encourage developers to build sustainably and follow the plan?

A: Local councils own a lot of land. Local authority has the ability to lead by example – building the right sustainable infrastructure according to the strategy.

Q: Open question to the room: experience of developers – positive or negative – delivering the outcomes they promised.

A: Majority of experiences were of developers pushing extra housing into plans. The fines for not following the plans are nothing compared to the profits or a few more homes squeezed in.

A: Alternative point – developers are doing exactly what they are allowed and remitted to do by government. The rules need to be changed, not the developers.

Q: Are there any existing urban area being considered for place making?

A: Not in this planning context (new development). The framework exists to make it possible, but not aware of any projects underway.

Q: Any connections to universities for blue/green innovation?

A: Aware of some, but no connections yet. Hull University was suggested – has a dedicated blue green infrastructure dept.

Q: Retrofit placemaking into existing urban areas?

A: There are lots of small scale good examples: Salford etc. Difficulty across North-West is converting the discrete pilots into a wider and deliverable plan.

Q: How can we retrofit? Or where have pilots been deployed wider scale?

A: Pick up derelict land and deliver through local authority projects – Cumbria Community forest.

A: ADEPT may have some examples or advice.

A: Sheffield city centre is a good live example.

A: There is a north-west guidance document on SUDS that allows SUDS to be adopted by UU. The same does not exist for Highways.

Q: Big question around how SUDS are monitored and maintained.

A: Agree. Some research shows that some suds designs are cheaper to maintain than pipes and gullies.

Q: Problem with promoting SUDS and releasing comms about proactive deployment of SUDS.

A: There are good successes out there – like “Carlisle Northern Link Road”, where drainage systems have cost nothing to maintain since construction. Because they work well and don't need intervention, we don't hear about them.

A: Share using Flood Hub? There are already some on there.

A: Key skill with promotion of schemes, solutions and work types is to deliver it via the community group in simple plain English words.

Q: Terminology: SUDS

A: Sustainable Urban Drainage System

Q: Terminology: Blue and Green infrastructure

A: Simply put, green = parks, greens trees etc. Blue = urban infrastructure relating to water

Alternative definitions of place based:

Enabling a community to understand the “place” they are in: understanding that flooding can be from all sorts of sources around their “place”.

Connecting people with an understanding of their catchment, rivers, nature, processes etc.

NHS – connecting people with their “place” for mental and physical health benefits – get involved with nature projects.

Comment: People are proud of their place and will protect it.

Most people don’t fully appreciate what their “Place” actually is.

## Nature-based solutions

### *Summary:*

Participants were broadly positive about the role of nature-based solutions in flood risk<sup>5</sup> but had questions over where the funding for this type of work would come from, how to access evidence to show that it works, and how to lever greater levels of engagement.

There was a discussion around the role of farmers, the challenges of a shift in farm support payments and the uncertainty about long term support for environmental methods. Participants considered the challenges of convincing those who were sceptical about nature-based solutions and pointed to benefits not just for flood reduction, but other improvements too.

There were many comments and shared experiences, in addition to questions.

### *Questions and answers:*

Q: You have pointed out the effects of steep hills in the catchment area here, but Natural Flood Management (NFM) is not the solution to everything. How do you keep a lid on the snake-oil salesmen?

A: We need to keep evidence of where it works; there's a scale thing, and we have to be realistic about how much landscape it is possible to change. Try and develop things that work e.g. in National Park. Continue to be honest, be open about the evidence, and what the science shows. Consistency and honesty are key.

Q: Can you share the academic papers and lessons learned from this work? Early drafts might not have been so honest.

A: Yes, potentially via the Flood Hub.

Q: Dredging is always thought of as the solution – how can you challenge that narrative?

A: We have to be specific about the solution that works in each location. Bridges a problem where gravel accumulates, and bridges make the presence of the gravel even worse. For example, in Kendal, at the downstream end of three rivers, it is about providing space. Dredging is a difficult one – unfortunate timing that reduction in this activity by the Environment Agency coincided with Storm Desmond. Targeted gravel removal is prudent but different from dredging. Rock based riverbeds, as in Keswick, mean it is not effective. Weir removals good but can undermine bridges, depending on location, so can't always be removed.

Q: Carlisle City Council – have money for planting some trees. We have pots of money sprung on us sometimes, at short notice. We want to take the opportunity to reduce the impact of flooding, carbon, food production, community, local geographical environment – all these factors – need a tool to decide what is the right way to spend money in which place, with little time to make decisions.

A: Part of trick = opportunity maps – look at where to prioritise work. How to get best effect where, is the hardest thing. Environment Agency working on flood risk in conjunction with

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natural processes mapping – needs keeping up to date and relevant. This is made more difficult because different funding pots split the money.

Catchment Plans can help – include natural processes mapping. Never a complete solution but a starter. Local nature recovery for Cumbria also helping to make the groups more joined up.

Q: I receive calls from farmers about cash, maintenance of assets, risk. Finance – how to engage with insurance companies. Rarely gets calls from hill farmers, all from farmers where water sits after passing through the hills.

A: Need payment strategy for this aspect. Water sits in these locations, and it's a difficult one. Meanwhile, Morecambe Bay is silting up, sea level rising, and there's the IDB question. Re insurance – Churchtown in Wyre case as an example. Flood Re not working well for many, for instance, it is not available to those who are renting houses.

Q: I have a past life in agriculture, good to slow down water at the top – need to ease it out at the bottom. Foulshaw Moss used to have trees, all cut down, drains blocked. Moss acting like a sponge, he sees as a problem. Puts pressure on the Kent coming down. They flooded because of water coming back up from the broken dam – not from water draining down. Need to look at the bottom end not just the top of catchments.

A: Infrastructure is a problem. We do look at conveyance, slowing down the water is a time management thing.

Q: Biodiversity Net Gain – can't stack the gains in one location, which can be an issue.

A: Can stack both benefits and funding, but can't double count benefits gained from e.g. planting one tree.

Comment:

A: Nick Chappell – before the latest work, there were lots of views about how things would work. Hard to argue against any without science to make strong arguments. Over the last 5 years getting baseline models have been our first task. The second has been to collect hard local evidence: we used Cumbrian sources but also UK and international sources. We combine these, so the whole process is published, and is peer reviewed. Still open to challenge but these papers are our arguments. 20+ papers of these responses. Comparisons between different interventions. Kendal – then scale up from what done there e.g. in Birds Park. Now starting to be able to produce these answers – what have to do to deliver, positive results to events of all scales, up to and including size of Desmond, we have much more rigorous evidence now. Danger is that people cherry pick what they want to use. Talking about effective storage, even a tree. Nature based solutions are not magic, and often people will be surprised by how much needs to be done to actually have an effect. Want to be as good as a traditional methods of flood defences. Also, we need to admit where those don't work. NFM is much more effective in small catchments.

Q: Flimby suffered in Storm Desmond. River Trusts have been putting in structures to hold the water back further up in that catchment. I was sceptical at first, but rain later that year showed the success of those interventions. People are still very frightened but small things do make a difference. I have been critical of mud and water coming off farmland; one farmer

has trenched the side of his field and directed water onto the highway, which has caused flooding. Farming community has a big role to play in Cumbria and they need to act responsibly.

A: West Cumbria Rivers Trust interventions are not that small though they are when compared with big flood defence schemes. They are targeted and that's why they work. There have been more positive effects from many farms that are making big differences. Added benefits too – such as less fertiliser = much less cost, because they have stopped water run off after 10 years as well as improved soil structure.

Q: Very supportive of this approach. Increased rainfall (due to climate change) will accelerate soil degradation. Sees this as a significant effect for the good. Q = what role will parish councils have to play here? Much more respected in community than larger authorities.

A: Not sure yet, but should have important role to play.

Comment: Experience of working with 2-3 Parish Councils – key element to deliver some of this, independent of agencies.

Q: Environmental land management group nationally – soils have been discussed at a national level. Environmental Land Management (ELM) Standard now being developed around soils, so steps are being made in the right direction.

Comment: Tarring the whole farming community with same brush is not fair.

A: Difficult conversations to be had. Need to engage the farming community and take them with us.

A: We can layer benefits – flood risk, carbon etc so get more than we would have, for same funding. Long term payments aspect possibly missing. Flexibility will start to unlock willingness – for example, long term payments make farmers more willing to tie up land. Also, best if funding can be made available from multiple sources

Q: Very much a partnership issue here. United Utilities have improved their partnership approach over recent years. Getting to the space now where we're all guilty and there are things we can all do to reduce surface water run off, strengthen soils upstream, improve water quality.

A: Need to co-design systems to stop infiltration into the sewer network, which leads to CSO (Combined Sewer Overflow) discharges. Water goes where it finds a pathway.

Q: Nature based solutions seem really successful in rural areas. How can they be taken into coastal and more urban areas?

A: This goes back to scale and whether it's possible to do enough – the Kendal example worked. Not a lot of work / investigation has been carried out on coasts so far but one place on west coast of Cumbria, where there were specific issues there with coastal accretion was successful. Would be good to look at others.

Q: We need more engagement – there are different levels of knowledge; how many people are aware of all this? Need to redouble efforts around what's happening so we can connect people, parish councils etc.



Also, in transition – diffuse pollution vs point source. Big schemes have gone in – can't build walls any higher – days of big flood defence schemes using hard engineering are past. Now need to work out how to work differently.

A: Simple observations are needed so public can see the benefits of e.g. mob grazing, soil improvement and the benefits they give. Lots to do on PR front.

Comment: We should celebrate this and recognise it.

Q: How can we go further faster and how be more cost efficient going forward?

A: Tests are to come. Fast track – uncertainty around ELMs etc doesn't help. Desire for improved water security might improve drive.

Getting experience in Cumbria of improving the approach we take – tap into alternative funding as well as ELMS type.

Q: Damning reports on water quality of rivers have been in the news recently. Will this improve that and how do/will we know?

A: We are measuring some water quality pollution factors. We have focused so far on flood improvements but some very targeted water quality measurements have been taken, with a small part of the funding. Have to make sure that when we have a funder and a farmer who wants to make a difference, we do look at the improvements so can demonstrate these benefits. Focus on phosphorus and erosion where there is an issue. Also, sewage is a huge issue.

All the reports from the studies are available online.

Comment: Issues of delivering this on the ground – Defra NFM programme – major part of funding goes on permissions, e.g. for planning, so easing definitions of what is classed as agriculture will help, and therefore can get permitted development rights. Also, the definition of a watercourse similarly.

## Emergency preparedness & response

### *Summary:*

The discussion focused on the mechanisms by which flood or coastal risk is assessed and the routes by which people are notified by different organisations<sup>6</sup>. There were some clear examples of good practice, and an emphasis on the importance of community involvement, as well as lessons learned and improvements that could be made.

### *Questions and answers:*

Q: How are operational forecasts made and communities helped?

A: (EA response) We use rainfall radar and people in incident room. Forecasts refined. Radar rainfall uses a finer grid. Also we had rolled out River Levels online. Helps with communities as they can see what is happening rather than a catchment wide warning that can lack detail by its very nature. Difference between Alerts and Warnings/severe Warnings explained.

Q: What triggers the emergency?

A: Two answers, EA clean drainage grids etc. when we become aware an event is likely. We do this for all events, even the low-level ones where it is likely only Flood Alerts will be issued. More serious forecasts generate a response from all Cat 1 emergency groups. What triggers this are 36-hour forecasts and Flood Guidance Statements (FGS), if FGS is amber we (EA) would predict a response that involves all emergency responders. The Resilience Forum do much the same for surface water flooding forecasts or any other form of forecasts, this goes to the Flooding and Response sub-group and they act on it. Note that forecast data can change a great deal and often. Responses/warnings can go via social media but official ones are better. Some Cumbria catchments are classified as Rapid Response Catchments (RRC) and it is difficult to get warnings out fast enough for then. Emergency Alerts via mobile phones are being rolled out about now, that catches visitors to the area the alert applies to as well as residents.

Q: Are Flood Warnings issued at night?

A: Yes, 24/7. Alerts in daylight only.

Q: Do you use address data to identify vulnerable people?

A: Yes, in emergencies such as flood events, we share data between organisations to protect life – first between Category 1 responders (for example, social care data), and then bringing in data from Category 2 responders (for example, United Utilities). This is now being done via VIPER (Vulnerable Intelligent Persons Emergency Response). Past experience of events has shown that it is vital the everyone is using the same, up-to-date list, which is why we get the information “live” during an incident rather than in advance. We can then select areas based on postcodes, or drawing an area on the map, to get a list of addresses where there may be people likely to need additional help.

Q: Is there any information for the public in Cumbria that’s similar to the on the old nuclear ‘Protect and Survive’ leaflets?

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<sup>6</sup> Recordings of all four breakout group presentations can be found at <https://thefloodhub.co.uk/cumbria/>

A: Not really that kind of leaflet - it is done via comms teams who pick up emergency messages from the Cat 1 responders and disseminate them on social media. Also have a look on Flood Hub at how individual households can prepare for flooding or other emergencies – for example, having a plan in place before something happens really helps, for businesses as well – the Flood Hub has leaflets to download and print for those who don't use social media. This has been proven by experience, this isn't just Cat 1 responders saying so.

Comment: Local Resilience Forums (LRFs) are based on police areas.

Comment: Recordings of training on how to use the "Check for Flooding" website

Community Groups are on the Flood Hub: <https://thefloodhub.co.uk/news/check-for-flooding-training-video-is-now-live-on-the-flood-hub/>

Comment: Treat Community Responders as fellow professionals and it makes a real difference.

Q: Are we doing enough to get information to people without internet and/or smartphones?

A: Several local groups like in Cockermouth will have stalls on streets with leaflets, visit parish council meetings with leaflets and hard copies of information, rather than email. Centrally this is hard to do but it does work well via community groups. As part of the Flood Warning Expansion Project (FWEP) we are sending out physical letters to properties in the new Flood Warning Areas that were formed as part of this project.

Q: If there was one magic wand change what would it be?

A: Make sure we still have a strategic connection as well as a community one so at Strategic Coordinating Group meetings we put across the community viewpoint

Q: If landlines went out in a severe flood, people without smartphones are at a disadvantage.

A: It is a problem and mobile phone masts go down as well. This lack of resilience is a concern, there is only an hour or so of back up when the power goes. In Storm Arwen, customers assumed we would know they were lacking power but all we know in real time is what sub-stations are out, not individual properties.

Q: Large coastal and fluvial areas with flood depths that are dangerous. How does this work re warning?

A: In 2005 in Carlisle 3 people died and unfortunately these were people on ground floors who could not get upstairs. It is tricky identifying everyone who is vulnerable like this. Can only use the VIPER notes and call/door knock. Think of past coastal events especially breached defences in Canvey Island in 1953, Holland, New Orleans in Hurricane Katrina. A problem here in the NW is the unpredictability of real events and the rapid onset of flooding in some areas

Comment: We have good knowledge and resources and must keep this and make sure we keep them.

Answer: Keep this and make sure community groups are involved at all stages of the event and aftermath especially the debrief.

### 3. Looking forward, next steps

Angela Jones gave an overview of the upcoming Local Government Reorganisation in Cumbria. On 1st April 2023 the 7 Cumbria Councils will be replaced with 2 new Unitary Councils: Westmorland & Furness and Cumberland<sup>7</sup>. This will result in one tier of local government, and two Unitary Councils who would be responsible for all local services. Partnership and collaboration between the Councils will be key to managing flood and coastal risk, securing funding for flood and coastal schemes and to increase resilience.

At the end of the presentation there was a clarification that there were some areas where one of the two new authorities would take a lead on behalf of both – for example, Westmorland and Furness are planning to lead on the Local Nature Recovery Strategy, Cumberland leading on Cumbria's Coastal Community Forest. However, both Councils would still be very involved in all county-wide projects.

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<sup>7</sup> More information at <https://www.westmorlandandfurness.gov.uk/> and <https://www.cumberland.gov.uk/>

## Appendix 1: Attendees

Name	Surname	Organisation
Andy	Ainsworth	<i>Newground</i>
David	Allen	<i>Cumbria CVS</i>
Giles	Archibald	<i>Westmorland &amp; Furness</i>
Paul	Arkle	<i>The Farmer Network</i>
Keith	Ashcroft	<i>Environment Agency</i>
Peter	Barnard	<i>Cumbria County Council</i>
Fiona	Brewis	<i>Lune Rivers Trust</i>
Adam	Briggs	<i>National Farmers Union</i>
Matthew	Brown	<i>Highways England</i>
Gareth	Candlin	<i>South Lakeland District Council</i>
Laura	Chamberlain	<i>South Lakeland District Council</i>
Nick	Chappell	<i>Lancaster University</i>
Nigel	Christian	<i>Carlisle City Council</i>
Doug	Coyle	<i>Cumbria County Council</i>
Lucy	Crawford	<i>Newground/ The Flood Hub</i>
Jo	Crozier	<i>Cockermouth ERG</i>
Stewart	Davies	<i>Environment Agency</i>
Joseph	Earl	<i>Morecambe Bay Partnership</i>
Mark	Ellis	<i>WSP</i>
Neville	Elstone	<i>Cumbria Woodlands</i>
Chris	Evans	<i>Environment Agency</i>
Neil	Fleming	<i>Ulverston Flood Resilience Group</i>
Lydia	Gaskell	<i>The Flood Hub</i>
Hannah	Girvan	<i>Cumbria County Council</i>
John	Gorst	<i>United Utilities</i>
Phil	Greenup	<i>Cumbria County Council</i>
Richard	Guzinski	<i>CRAGG</i>
David	Hall	<i>NFU</i>
James	Halliday	<i>United Utilities</i>
David	Harpley	<i>Cumbria Wildlife Trust</i>
Mark	Hesketh	<i>Natural England</i>
Kevin	Holmes	<i>Levens PC</i>
David	Hughes	<i>Cumbria LEP</i>
Sue	Hunter	<i>Arnsdale &amp; Silverdale AONB</i>
Trevor	Hurst	<i>Allerdale Borough Council</i>
Graeme	Innes	<i>Cumbria County Council</i>
Sharma	Jencitis	<i>United Utilities</i>
Angela	Jones	<i>Cumbria County Council</i>
Chris	Jones	<i>Barrow Borough Council</i>
Dyan	Jones	<i>South Lakeland District Council</i>

Ian	Kell	<i>Kendal - Benson and Sandes FLAG</i>
Dave	Kennedy	<i>Environment Agency</i>
Keith	Little	<i>Cumbria County Council</i>
Alison	Love	<i>Cumbria County Council</i>
Adrian	Lythgo	<i>NWR FCC</i>
Catherine	Martindale	<i>Cumbria County Council</i>
Clair	Mcfarlan	<i>Solway Firth Partnership</i>
Kate	McGibbon	<i>Cumbria Association of Local Councils</i>
Richard	Milne	<i>Carlisle Flood Action Group/ CRAGG</i>
Sue	Moffat	<i>Environment Agency</i>
Stewart	Mounsey	<i>Environment Agency</i>
Sarah	Murray	<i>United Utilities</i>
Lynne	Murray	<i>Representative from Cumbria Youth Parliament</i>
Gillian	Nicholson	<i>Ulverston Flood Resilience Group</i>
Helen	Norris	<i>Electricity North West</i>
Carolyn	Otley	<i>Cumbria CVS</i>
Jessica	Patten	<i>Environment Agency</i>
Caitlin	Pearson	<i>West Cumbria Rivers Trust</i>
Jane	Phillips	<i>Environment Agency</i>
Tim	Pitt	<i>Lune Rivers Trust</i>
Sam	Plum	<i>Barrow Borough Council</i>
Elizabeth	Radford	<i>Eden Rivers Trust</i>
Nicola	Reynolds	<i>Churches Together</i>
Sven	Richards	<i>Port of Workington</i>
Vikki	Salas	<i>West Cumbria Rivers Trust</i>
Elizabeth	Scott-Clarke	<i>South Lakeland District Council</i>
Andy	Shore	<i>Environment Agency</i>
Sarah	Smith	<i>Environment Agency</i>
Dan	Stansfield	<i>WSP</i>
Kate	Stark	<i>Cumbria County Council</i>
Brian	Steadman	<i>Cumbria Fire and Rescue</i>
Adam	Stephenson	<i>Environment Agency</i>
Cara	Stride	<i>Kendal Integrated Care Community - NHS</i>
Pippa	Summers	<i>Environment Agency</i>
Rebecca	Thomas	<i>Natural England</i>
Jackie	Thompson	<i>Flooding and Severe Weather sub-group</i>
Chris	Tomlin	<i>Environment Agency</i>
Andy	Turner	<i>Cockermouth ERG</i>
Kate	Willshaw	<i>Friends of the Lake District</i>
Caitlin	Wood	<i>Natural England</i>
Cate	Woodcock	<i>Cumbria County Council</i>
Alistair	Wright	<i>National Trust</i>

<i>Facilitators</i>		
Rhuari	Bennett	<i>Facilitator, 3KQ</i>
Ruth	Dalton	<i>Facilitator, 3KQ</i>
Jenny	Willis	<i>Facilitator, 3KQ</i>
Rachel	Woodward	<i>Facilitator, 3KQ</i>

## Appendix 2: Exhibition stands

Organisation	Website
Cockermouth Emergency Response Group	<a href="https://www.cerg.org.uk/">https://www.cerg.org.uk/</a>
Cumbria County Council	<a href="https://www.cumbria.gov.uk/">https://www.cumbria.gov.uk/</a>
Cumbria Innovative Flood Resilience (CiFR)	<a href="https://engageenvironmentagency.uk.engagementhq.com/cub005-cifr">https://engageenvironmentagency.uk.engagementhq.com/cub005-cifr</a>
The Environment Agency	<a href="https://www.gov.uk/government/organisations/environment-agency">https://www.gov.uk/government/organisations/environment-agency</a>
Eden Rivers Trust	<a href="https://www.edenrivertrust.org.uk/">https://www.edenrivertrust.org.uk/</a>
The Flood Hub/ Newground	<a href="https://thefloodhub.co.uk/">https://thefloodhub.co.uk/</a>
Lune Rivers Trust	<a href="https://lunerivertrust.org.uk/">https://lunerivertrust.org.uk/</a>
West Cumbria Rivers Trust	<a href="https://www.westcumbriarivertrust.org/">https://www.westcumbriarivertrust.org/</a>
United Utilities	<a href="https://www.unitedutilities.com/">https://www.unitedutilities.com/</a>
WSP	<a href="https://www.wsp.com/en-gb">https://www.wsp.com/en-gb</a>



### Appendix 3: Carbon footprint

Attendees were asked to give details of their mode of transport and distance travelled, in order to help arrange a suitable Carbon offset for the meeting and raise awareness of the minimum carbon footprint of the day. It was calculated that 1.1 tonnes of CO<sub>2</sub> were produced, with 83% from travel, and 14% from the meeting rooms.

