

## **Preliminary flood risk assessment: Cumbria County Council**

**This addendum by Cumbria County Council (2017) updates the council's preliminary flood risk assessment report published in 2011. Read the addendum in conjunction with the [preliminary assessment report](#).**

### **Addendum**

The preliminary flood risk assessment (PFRA) and flood risk areas (FRAs) for Cumbria County Council were reviewed during 2017, using all relevant current flood risk data and information.

Changes to the assessment of risk since the preliminary assessment report was published in 2011 are described in the statements in this addendum.

### **Past flood risk**

Annex 1 lists the locations where the LLFA, working with partners, has published flood investigation Reports. Significant flooding to properties has occurred from surface water and Ordinary Watercourse sources or as a result of combined effects with Main River flooding. Collecting, sharing and publishing the reports has enabled the LLFA to collect more robust data compared to the unreliable information held previously.

### **Future flood risk**

Completion of the Cumbria lead local flood authority (LLFA) Surface Water Management Plan (SWMP) in 2013 added further detail to the outputs that were available for the PFRA in 2011. This information was used in flood risk assessment chapters of the Local Flood Risk Management Strategy (LFRMS) published in 2015. Frequent updates of flood mapping available from the Environment Agency have refined understanding of the flood risk in areas identified in the SWMP. Climate change allowances provide a site or area specific flood risk assessment for the LLFA when consulted by local planning authorities (LPAs) on planning applications, Local Plans and supporting documents. These consultation procedures also enable Cumbria LLFA to comment on all development proposals from an early stage frequently seeking to influence masterplanning work on major developments. LPAs are advised how local flood risk can be reduced by incorporating sustainable drainage system techniques.

All this new information also enables the LLFA to prioritise resilience activities in communities which are at greatest risk from localised flooding.

### **Flood risk areas (FRAs)**

No FRAs have been identified for the purposes of the Flood Risk Regulations (2009) 2nd planning cycle.

### **Other changes**

Important updates to the assessment of flood risk are provided below as addendum notes to the original Cumbria LLFA PFRA 2011 document.

## Executive Summary updates

The Environment Agency has used a national methodology in 2017, which has been set out by DEFRA, to identify indicative Flood Risk Areas across England; none are located in Cumbria.

The Cumbria SWMP was completed in 2013 and has been used to inform local flood risk assessment in the Cumbria LFRMS published in 2015.

## Section 1. No updates

## Section 2 updates

### 2.1 Governance and partnership arrangements

Following completion of the SWMP, governance of flood risk continued with the following name changes as described in the LFRMS: -

- Cumbria Flood Risk Steering Group became Cumbria LLFA Strategic Partnership
- Cumbria Flood Risk Management Group became Cumbria LLFA Working Group

Cumbria Flood Partnership was set-up by Defra, overseen by local MP Rory Stewart, to review the impacts of the December 2015 flooding across the county and identify the lessons learned. A catchment based 25-year Plan was delivered to Defra in June 2016, supporting the direction already adopted by the Cumbria LLFA Strategic Partnership.

This new approach focuses on the 3 catchments that suffered from the most from the December 2015 flooding: - Eden, Derwent and Kent. A wider remit has been followed to encompass catchment scale working to integrate land management, development and resilience in areas at risk. To achieve these objectives new partners representing the farming, forestry, infrastructure and ecology sectors have been participating in new Catchment Management Groups - one for each of the 3 catchments. These groups have replaced the single Cumbria LLFA Working Group. To recognise this wider remit and carry forward the responsibilities of the Cumbria Flood Partnership, Cumbria LLFA Strategic Partnership has become Cumbria Strategic Flood Partnership (CSFP). First full meetings for the new Cumbria Strategic Floods Partnership Board and the Catchment Management Groups were held in January 2017.

### 2.2 Communication with partners and the public.

Partnership working is a key requirement of LLFAs under the Flood & Water Management Act 2010 and the scope of this is described in the LFRMS and in the governance arrangements above.

Working with the public is also described in the LFRMS and has continued to grow under the CSFP. LLFA flood investigation reporting has been shared with affected communities and individuals. This engagement through flood forums provides opportunities for communities to shape flood defence investment to reduce local flood risk. They are also encouraged to take ownership of community resilience offering better protection against future flooding. There are now 52 community flood action groups in the Cumbria LLFA area.

These new groups and ways of working were continuing to be established throughout the PFRA Review. New arrangements for governance, public and partner working will be described in a future annual update of the LFRMS.

### Section 3 updates. Data management.

Para. 3.1.1 of the original PFRA in 2011 noted how data collection, the setting-up of local partnerships and governance had taken place through SWMP development and LLFA establishment rather than for the PFRA specifically. These activities continued under the leadership of the LLFA with 'Making Space for Water' groups (MSfWGs) performing a key role in collating and managing local flood risk data since then.

Para. 3.4. A secure on-line Microsoft Sharepoint business collaboration facility is used to store and manage this data, hosted centrally by the LLFA. Access can be arranged for interested partners.

Whilst all data is held securely it is open to Freedom of Information availability procedures when such requests are made by the public.

Para. 3.5. Quality assurance is provided through continual audit of the stored data as it is used and shared between partners. Flood investigation information is repeatedly checked and verified through site visits, flood forum discussions with those affected and research with partners.

### Section 4 updates. Past Flood Risk

There was significant flooding in the Copeland, South Lakeland and Eden districts of Cumbria over the summer and autumn of 2012, the wettest year in the UK since records began. A number of notable events occurred over the winter of 2013/14. Primary sources for many these events were Ordinary Watercourses and surface water. In December 2015, the county was devastated by flooding from 'Storm Desmond'. Over 6000 properties were flooded internally with extensive damage to transport and utility infrastructure. Although surface water and ordinary watercourses were notable contributors to the flooding the dominant source was from Main Rivers.

For the purposes of this PFRA review, LLFAs have been advised to only report those floods which had significant harmful consequences. This is further clarified as floods for which there was a subsequent investigation under Section 19 of the Flood & Water Management Act, or those floods which have shown a need to address risks not previously anticipated in the LFRMS.

Working with partners, Section 19<sup>1</sup> reports have been prepared by the LLFA for all of these flood events. Those reports detailing surface water and Ordinary Watercourses as major sources for the flooding have been listed in Annex 1 as required in this Review.

There has been little evidence of any impacts of groundwater flooding anywhere in Cumbria since the last PFRA in 2011.

The 6 MSfWGs in Cumbria, managed by the LLFA, are responsible for investigating flood incidents, collating data and ensuring reports are drafted, shared with those affected and published. Where flood incidents cannot be resolved independently by a MSfWG partner, the problem is shared collectively by the Group; these flood locations then become 'Hotspots'. There are currently over 400 Hotspots across the Cumbria LLFA area.

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<sup>1</sup> An investigation into a flooding event that a lead local flood authority (LLFA) is required to carry out under Section 19 of the [Flood and Water Management Act 2010](#), and according to [the LLFA's local flood risk management strategy](#)

## Section 5 updates. Future Flood Risk

Cumbria LLFA receives quarterly updates to flood risk mapping issued by the Environment Agency. Since 2013, this suite of maps provides the best information available for the assessment of surface water, Ordinary Watercourse and groundwater flooding. It quickly superseded much of the risk assessment available from the SWMP

But the SWMP produced a surface water flood risk assessment specifically for Cumbria focussing on the geographical and meteorological conditions experienced in the North of England. Areas of highest risk were identified and prioritised in LFRMS Action Plan. Refined risk assessment techniques used in Stage 2 of the SWMP process estimated a total of 8939 people to be at risk of surface water flooding in 46 locations across the whole of Cumbria.

Para. 5.6. Impacts of climate change. For the purposes of this review, the Environment Agency has carried out a simple analysis at the national level to compare the number of people at risk from surface water flooding from a rainfall event with a 1% chance of occurring in any year to the number at risk from an event with a 0.1% chance of occurring in any year. The numbers of people at risk are counted per 1 kilometre grid square across England. The resulting 'heat map'<sup>2</sup> shows how the absolute number of people at risk increases between these two rainfall events for each 1km grid square.

This method is not based on climate projections, and it does not account for future population growth. It does provide a simple way, however, of identifying areas that could be susceptible to increased rainfall intensity as a proxy for climate change. It is a reasonable proxy for an upper end climate change scenario for the end of the century, both in the pattern of change across the country and the percentage increase in intensity compared to the current climate.

Cumbria LLFA has reviewed these maps identifying notable increases in the number of people at risk in Carlisle, Kendal, Penrith, Workington, Maryport, Whitehaven, Ambleside, Windermere, Ulverston, Millom and Barrow. All of these locations featured in the top 40 listing of places most at risk from surface water flooding in the SWMP Phase 2 report. The overall percentage increase for numbers of people at risk across the county is estimated to be between 200% and 350%. The 'heat map' is a simple approximation to understanding the impacts of climate change. As the thresholds for FRAs are likely to increase these impacts could introduce FRAs in future PFRA reviews. But Cumbria LLFA does not consider this information warrants the identification of a FRA as part of this review.

It is recognised that a review of the SWMP will be required to inform bespoke surface water flood risk assessment for Cumbria, including climate change in the next major update of the LFRMS.

## Section 6 updates. Identification of Flood Risk Areas.

No Flood Risk Areas have been identified in the Cumbria LLFA area.

## Section 7 updates. Next steps.

There is no significant flood risk related to flooding from local sources in Cumbria. Analysis at the nationwide scale has shown that there are no significant FRAs in Cumbria. Because of this there are no further requirements for work to be done as part of this PFRA.

This self-assessment process for conducting a review of the Cumbria LLFA PFRA produced in 2011 has highlighted the programme for continual assessment of flood risk from local sources: -

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<sup>2</sup> Information provided by the Environment Agency to support LLFAs in their PFRA reviews in 2017

- Governance changes resulting from the development of the Cumbria Strategic Floods Partnership will be noted in annual updates of the LFRMS; this will maintain a 'live' document.
- The LFRMS Action Plan covers the full scope of the Cumbria LLFA Capital Investment Programme. It is a key element of the LFRMS and will be updated annually to maintain a 'live' document.
- A review of the Cumbria LLFA SWMP is planned by 2019. This will be a key resource for a complete review of the LFRMS in 2021.

**Cumbria County Council**  
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