

Rigging Gill, Greysouthen.

Flood Investigation Report no 83.



Flood Event 21 Dec 2013

This flood investigation report has been produced by Cumbria County Council as a Lead Local Flood Authority under Section 19 of the Flood and Water Management Act 2010.

| Version | Undertaken by | Reviewed by | Approved by | Date |
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Executive Summary

Cumbria County Council as Lead Local Flood Authority has prepared this report with the assistance of other Flood Risk Management Authorities as it considers necessary to do so under Section 19 of the Flood and Water Management Act 2010.

The Rigging Gill area of Greysouthen in the Allerdale District suffered from flooding during the excessive rainfall event of the 21st of December 2013. The main cause of the flooding appears to be from surface water runoff from fields following a very heavy prolonged rainstorm. A watercourse runs through the rear of the affected properties but due to the severity of the storm the capacity was inadequate to cope with the excess water.

Resilience measures had been put in place to the rear of the properties to allow excess water to flow overland through the back gardens but these measures did not prevent a major build-up of water in the fields and a resulting surge that caused damage to property.

4 actions have been identified within the report that would reduce the risk of future flooding. The LLFA will liaise with the parties involved to encourage the actions to be carried out.

Event Background

This section describes the location of the flood incident and identifies the properties that were flooded.

Flooding Incident

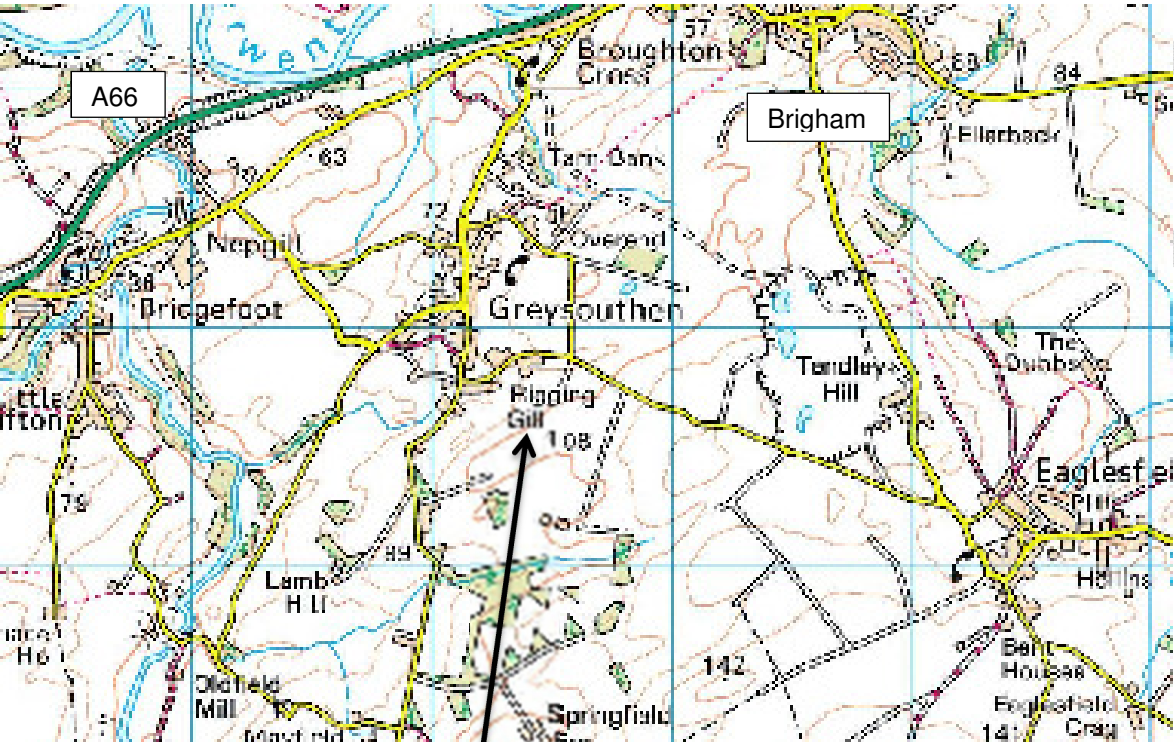


Figure 1 Location map

Rigging Gill.

The three flooded properties are all adjacent to each other and all have the **culverted watercourse** running through their gardens (See Figure 2 below).



Figure 2 Flooded properties

Ghyll Cottage Fieldside Rigging Gill Cottage

Investigation

This section provides an analysis of flow routes and details of likely causes of flooding. Also included are details of the rainfall event and any previous flooding history in the area.

Rainfall event

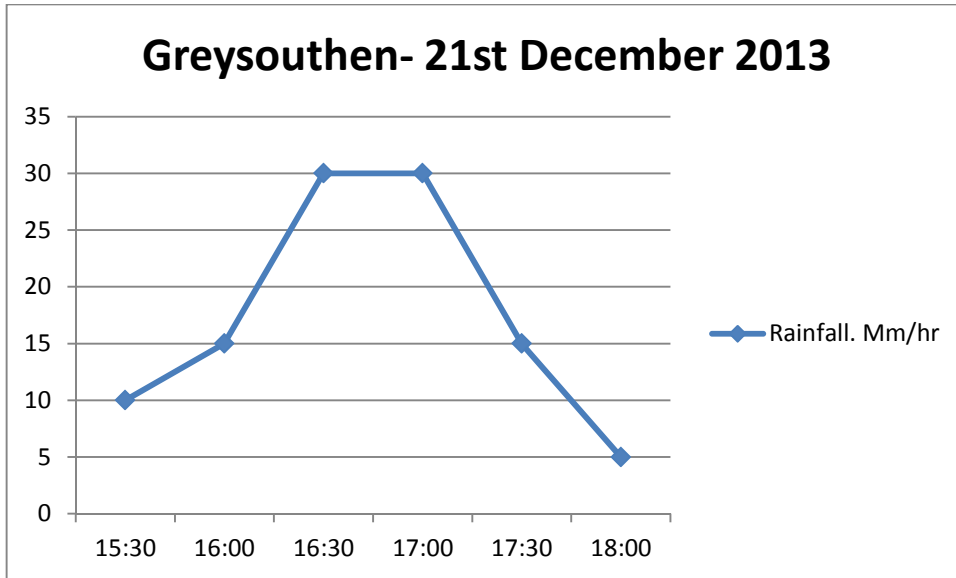


Figure 3 Rainfall event

The storm began at approx. 14:00 and the heaviest bursts of rain were between 16:00 and 17:00 with prolonged rain of up to 30mm per hour during this period. Heavy showers followed through the evening until approx. 20:00

Map of Flow Routes



Figure 4 Map of flow routes and line of culverted section.

The blue arrows on the above plan show the flow routes from the natural topography of the area and along the highway network, which naturally falls to a dip at the junction of Overend Road.

The red line shows the approximate line of the culverted watercourse that runs through the field and the back gardens in the Rigging Gill area through Rigging Gill Farm and into an open watercourse (blue).

The depth and flow rate of water through the rear gardens area is difficult to ascertain due to the varying topography and width and depth of flow routes.

Likely Causes of Flooding

The main source of flooding is considered to be the natural catchment flows from the land above Rigging Gill overwhelming the culverted watercourse due to the extreme storm. The build-up of the excess water ponds in the field to the rear of the properties before surging overland and following the line of the culvert before re-entering the open watercourse to the west of Rigging Gill Farm

It had been suggested to White Young & Green consultants, who have carried out an earlier study and report of the area that problems first started to occur following extension works carried out by Tendley quarry that is located to the east of Greysouthen. There has however no link been found to justify these assumptions.

Flooding History

Rigging Gill has suffered flooding twice before in 1999 and also on the 12th of October 2005. It is believed to be a fairly new occurrence and anecdotal evidence suggests the area had never flooded prior to 1990.

EA flood maps show that the line of the culvert is susceptible to flooding during a 1 in 30 year event. (See below)



Figure 5 EA map of 1 in 30 year flood event

Recommended Actions

| Action by | Recommended Action | How |
|----------------------------------|---|---|
| Landowners/ LLFA/County Highways | Look to providing more capacity where attenuation already exists in the fields at the bottom of Overend Road. | Re-locate field gateway at the bottom of Overend Road and along with County Highways provide a soil bund for extra attenuation during storm conditions. |
| Landowner/LLFA | Provide a bund in the field adjacent the properties while allowing controlled flow through the rear of the gardens during storm conditions. | Landowner should provide a soil bund in the field, LLFA to help with levels and provide a pipe through the bund so normal flows are allowed and controlled. |
| County Highways/LLFA | Check culvert under the road and highway drainage in the area | Carry out a check on the culvert and highway drainage in the vicinity. Completed |
| Property owners | Ensure properties are resilient to flooding | Install property level protection to properties |

Next Steps

CCC as the LLFA will continue to ensure that any actions identified within the actions table of this report are appropriately taken forward by each Risk Management Authority identified. Actions will continue to be prioritised through the Making Space for Water process and monitored through regular meetings of the group. Details of the MSfWG members and summary of related processes are detailed in Appendix 2.

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Appendices

Appendix 1: Glossary

Acronyms

| | |
|-------|------------------------------|
| EA | Environment Agency |
| CCC | Cumbria County Council |
| LLFA | Lead Local Flood Authority |
| LFRM | Local Flood Risk Management |
| MSfWG | Making Space for Water Group |
| FAG | Flood Action Group |

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Appendix 2: Summary of Relevant Legislation and Flood Risk Management Authorities

The Flood Risk Regulations 1999 and the Flood and Water Management Act 2010 (the Act) have established Cumbria County Council (CCC) as the Lead Local Flood Authority (LLFA) for Cumbria. This has placed various responsibilities on CCC including Section 19 of the Act which states:

Section 19

- (1) On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers it necessary or appropriate, investigate—
- which risk management authorities have relevant flood risk management functions, and
 - whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.
- (2) Where an authority carries out an investigation under subsection (1) it must—
- publish the results of its investigation, and
 - notify any relevant risk management authorities.

A 'Risk Management Authority' (RMA) means:

- the Environment Agency,
- a lead local flood authority,
- a district council for an area for which there is no unitary authority,
- an internal drainage board,
- a water company, and
- a highway authority.

The table below summarises the relevant Risk Management Authority and details the various local source of flooding that they will take a lead on.

| Flood Source | Environment Agency | Lead Local Flood Authority | District Council | Water Company | Highway Authority |
|------------------------------|--------------------|----------------------------|------------------|---------------|-------------------|
| RIVERS | | | | | |
| Main river | | | | | |
| Ordinary watercourse | | | | | |
| SURFACE RUNOFF | | | | | |
| Surface water | | | | | |
| Surface water on the highway | | | | | |
| OTHER | | | | | |
| Sewer flooding | | | | | |
| The sea | | | | | |
| Groundwater | | | | | |
| Reservoirs | | | | | |

The following information provides a summary of each Risk Management Authority's roles and responsibilities in relation to flood reporting and investigation.

Government – Defra develop national policies to form the basis of the Environment Agency’s and Cumbria County Council’s work relating to flood risk.

Environment Agency has a strategic overview of all sources of flooding and coastal erosion as defined in the Act. As part of its role concerning flood investigations this requires providing evidence and advice to support other risk management authorities. The EA also collates and reviews assessments, maps and plans for local flood risk management (normally undertaken by LLFA).

Lead Local Flood Authorities (LLFAs) – Cumbria County Council is the LLFA for Cumbria. Part of their role requires them to investigate significant local flooding incidents and publish the results of such investigations. LLFAs have a duty to determine which risk management authority has relevant powers to investigate flood incidents to help understand how they happened, and whether those authorities have or intend to exercise their powers. LLFAs work in partnership with communities and flood risk management authorities to maximise knowledge of flood risk to all involved. This function is carried out at CCC by the Local Flood Risk Management Team.

District and Borough Councils – These organisations perform a significant amount of work relating to flood risk management including providing advice to communities and gathering information on flooding.

Water and Sewerage Companies manage the risk of flooding to water supply and sewerage facilities and the risk to others from the failure of their infrastructure. They make sure their systems have the appropriate level of resilience to flooding and where frequent and severe flooding occurs they are required to address this through their capital investment plans. It should also be noted that following the Transfer of Private Sewers Regulations 2011 water and sewerage companies are responsible for a larger number of sewers than prior to the regulation.

Highway Authorities have the lead responsibility for providing and managing highway drainage and certain roadside ditches that they have created under the Highways Act 1980. The owners of land adjoining a highway also have a common-law duty to maintain ditches to prevent them causing a nuisance to road users.

Flood risk in Cumbria is managed through the Making Space for Water process which involves the cooperation and regular meeting of the Environment Agency, United Utilities, District/Borough Councils and CCC’s Highway and LFRM Teams to develop processes and schemes to minimise flood risk. The MSfWGs meet approximately 4 times per year to cooperate and work together to improve the flood risk in the vulnerable areas identified in this report by completing the recommended actions. CCC as LLFA has a responsibility to oversee the delivery of these actions.

Where minor works or quick win schemes can be identified, these will be prioritised and subject to available funding and resources will be carried out as soon as possible. Any major works requiring capital investment will be considered through the Environment Agency’s Medium Term Plan or a partners own capital investment process.

Flood Action Groups are usually formed by local residents who wish to work together to resolve flooding in their area. The FAGs are often supported by either CCC or the EA and provide a useful mechanism for residents to forward information to the MSfWG.

Appendix 3: Useful contacts and links

To report flooding: Incident hotline tel: 0800 80 70 60 (24hrs)

Floodline: tel. 0845 988 1188/0345 988 1188

Cumbria County Council (Local Flood Risk Management):

lfrm@cumbria.gov.uk, www.cumbria.gov.uk, tel: 01228 221330

Cumbria County Council (Highways):

highways@cumbria.gov.uk, www.cumbria.gov.uk, tel: 0845 609 6609

Cumbria County Council Neighbourhood Forum: tel: 01946 505022

cumbria.gov.uk/sayit

United Utilities: tel: 0845 746 2200

Allerdale Borough Council

info@Allerdale.gov.uk www.Allerdale.gov.uk, tel: 01900 702 702

Flood and Water Management Act 2010:

<http://www.legislation.gov.uk/ukpga/2010/29/contents>

Water Resources Act 1991:

<http://www.legislation.gov.uk/all?title=water%20resources%20act>

Land Drainage Act:

<http://www.legislation.gov.uk/all?title=land%20drainage%20act>

Highways Act 1980:

<http://www.legislation.gov.uk/all?title=highways%20act>

EA – ‘Living on the Edge’ a guide to the rights and responsibilities of riverside occupation:

<http://www.environment-agency.gov.uk/homeandleisure/floods/31626.aspx>

EA – ‘Prepare your property for flooding’ how to reduce flood damage including flood protection products and services:

<http://www.environment-agency.gov.uk/homeandleisure/floods/31644.aspx>

Translation services

If you require this document in another format (e.g. CD, audio cassette, Braille or large type) or in another language, please telephone 01228 606060.

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