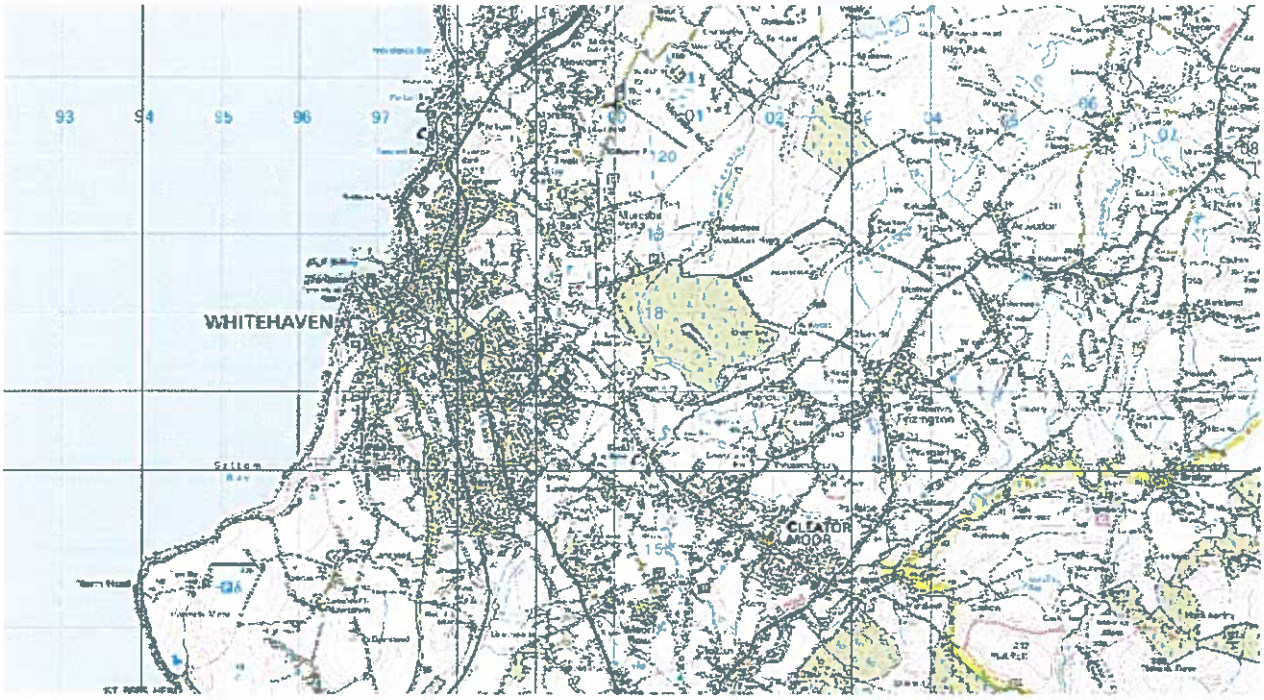
Cumbria County Council

10–38 Victoria Road, Whitehaven

Published Flood Investigation Report No.77



Flood Event 17th October 2012

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
Preliminary	David White	Anthony Lane		5th Dec 2013
Draft	David White	Anthony Lane		4th April 2014
Published	Andrew Harrison	Anthony Lane	Doug Coyle	22nd April 2014

Contents

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.

This Report was completed after Cumbria County Council LFRM Team received information about surface water flooding from the fields behind Victoria Road, Whitehaven during a rainfall event on the 17th October 2012. This led to a site visit in partnership with Copeland Borough Council, who had already carried out several site investigations in this area.

The LFRM Team received reports that there were properties affected by the flooding No 10 has been confirmed to have been flooded internally but this was found to be due to a conservatory door being ajar that would normally have deflected the water, 12, 14 and No.16 experienced external flooding.

Heavy prolonged rainfall onto saturated steeply sloping ground caused the flooding. The resulting surface water runoff overwhelmed any land drainage that was in place at the bottom of the sloping ground and flowed through gardens and between properties onto the road, causing some flooding on the other side.

There are five Recommended Actions in the Report. These include repairs to damaged culverts and land drains. Landowners should investigate the feasibility of laying new filter drains at the foot of the fields behind Victoria Road. CCTV Surveys are recommended to investigate the condition of culverts and drainage

Event Background

This section describes the location of the flood incident, identifies the properties that were flooded and provides details of the authorities who have contributed to this investigation.

Flooding Incident

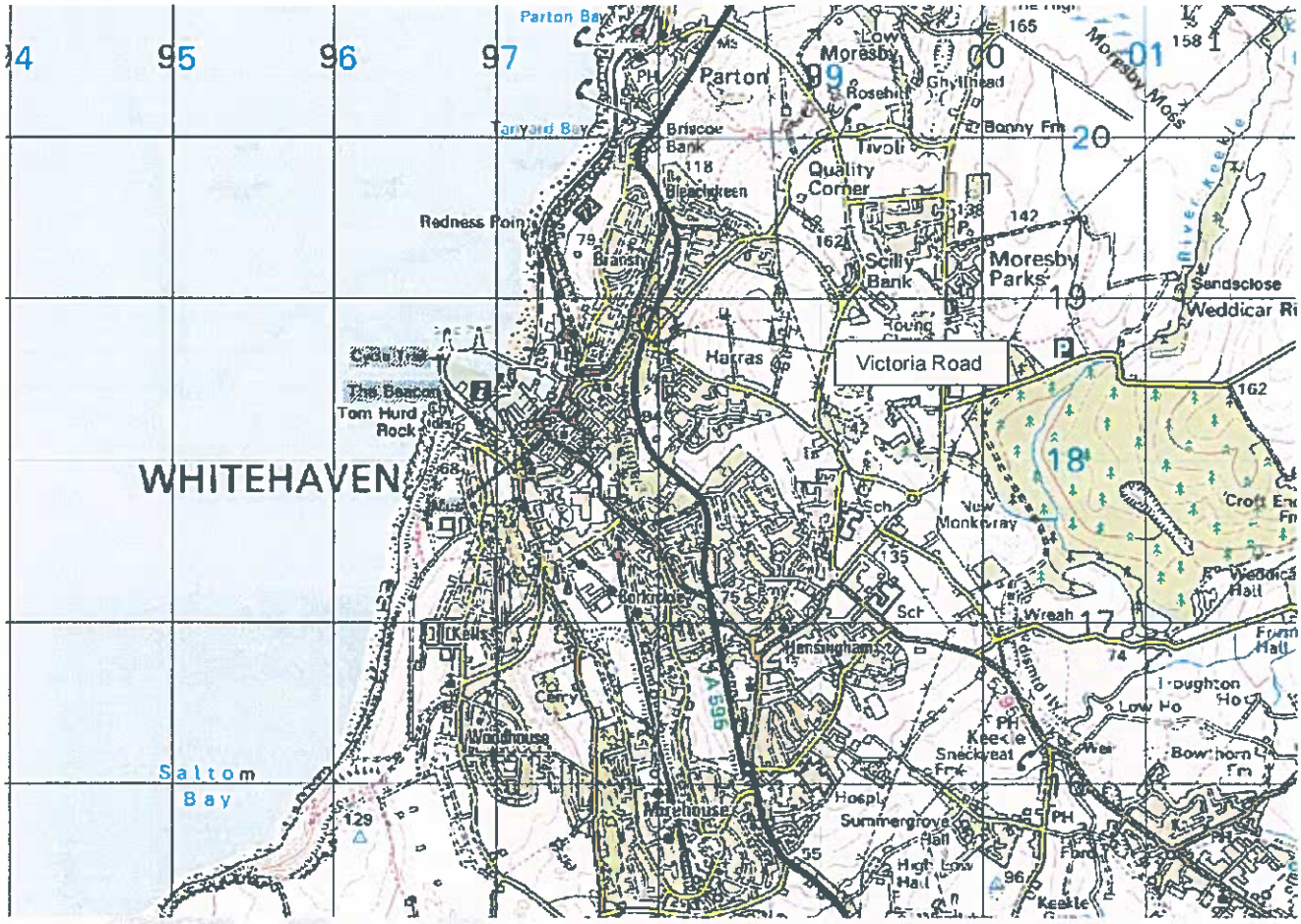


Figure 1: Location Plan

Victoria Road, Whitehaven is situated 760m northeast of the harbour (see Figure 1: Location Plan and Figure 2: Location Plan-Victoria Road). The locations of Nos.10-38 are shown in Figure 3 which also shows the watercourses in the vicinity as indicated on the Environment Agency (EA) records.

Number 10 is the only property that has been confirmed as internally flooded with intermittent external flooding between numbers 38 and 12.

The flood event occurred on the 17th October 2012. It was caused from overland flows and from a surcharging culvert. Copeland Borough Council (CBC) has made several visits to the site, with Cumbria County Council (CCC) on one occasion.

Figure 2: Location Plan Victoria Road

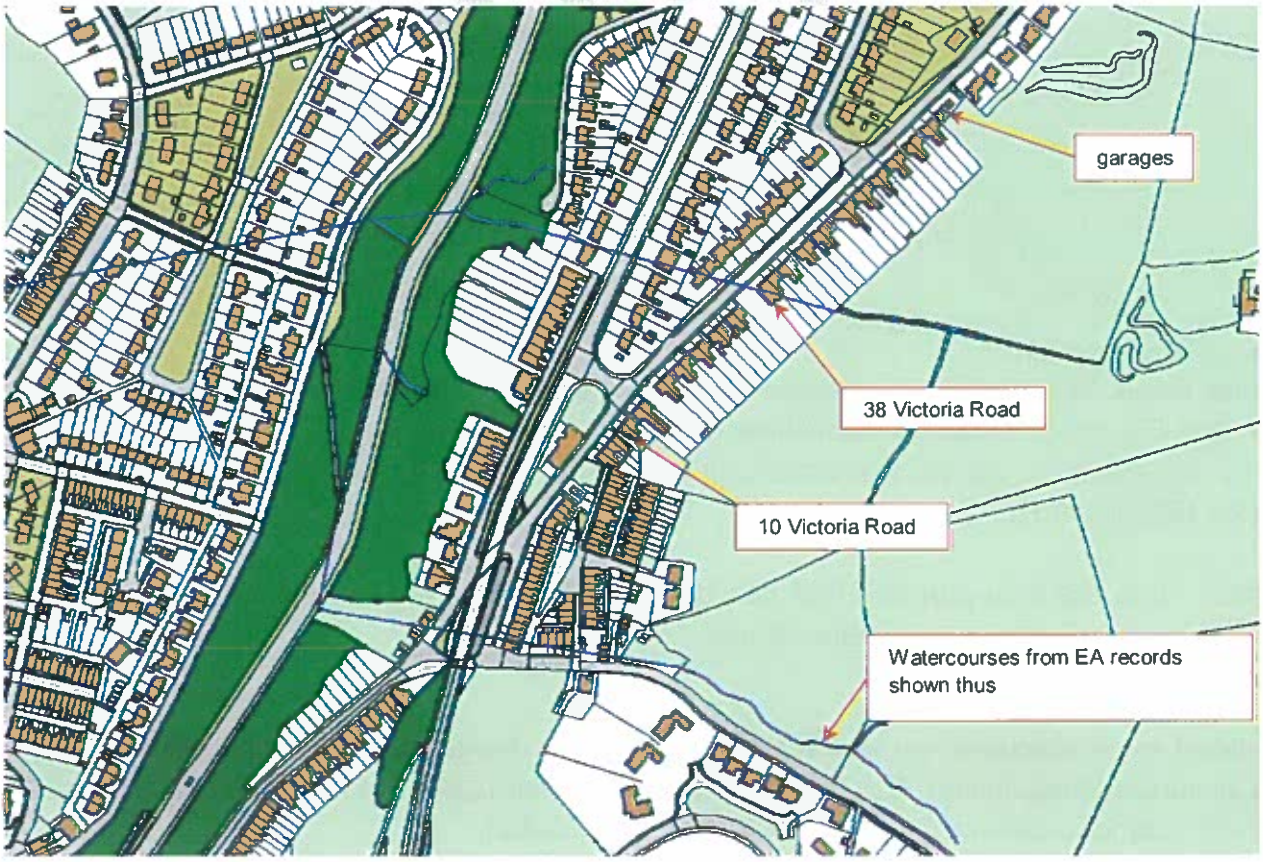


Figure 3: Location Plan 10-38 Victoria Road, CA28 6HZ.

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

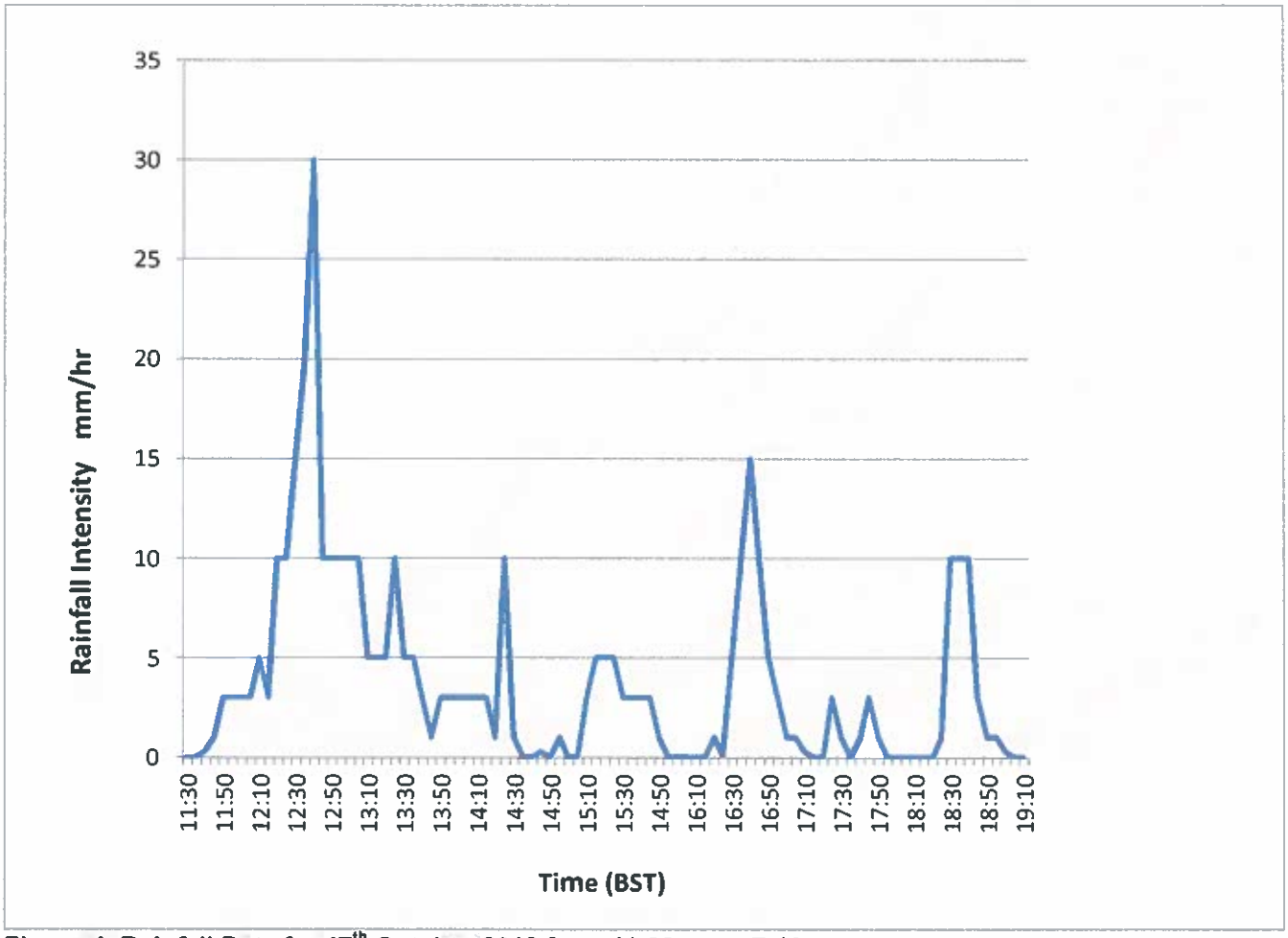


Figure 4: Rainfall Data for 17th October 2012 from 11:30am to 7:10pm

In the early hours of the 16th October 2012 there was heavy rainfall, with intensities of up to 10mm/hr. There were further low intensity rainfall events commencing in the early hours of the 17th August before becoming almost continuous from about 11:30am until just after 7:00pm when the rainfall ceased. It peaked at about 12:40pm with an intensity of about 30mm/hr. Figure 4 shows several other peaks reaching an intensity of up to 15mm/hr.

Map of Flow Routes

Figure 5: Route of Beck

Figure 5 shows the route of an ordinary watercourse that issues on a steep hillside behind Victoria Road on farmland belonging to Harras Park Farm. It runs on the south side of a dyke kest (earth bund) and sinks into a 225mm dia. culvert behind the backgardens of Nos. 42/44 Victoria Road. The culvert then runs parallel to the rear gardens before turning and running through the garden of No.38. The culvert then crosses Victoria Road and enters a manhole (MH) chamber in the front garden of No.1. A sycamore tree, protected by a TPO, stood in the front garden of No.38 (adjacent to No.36) and its roots caused problems to the culvert. There may be another culvert running down the field parallel to rear gardens in addition to that shown above but this is unconfirmed

Figure 6: Flow Routes

Figure 6 shows the flooding flow routes of the 17th October, with floodwater flowing over the fields perpendicular to the backgardens. It is understood that the flood flowed into backgardens and between the properties into the road. It had been originally reported that about 29 properties experienced external flooding, with 4 properties having some internal flooding. However it has only been confirmed that one property was flooded internally and the number of properties that experienced external flooding has not been verified.

There was also a flow affecting No.76 Victoria Road. A field drainage system that ran off land behind the garages adjacent No.76, was partially blocked at its outfall into another system that ran under the drive to the garages. This connects into a road gully outside No.76 and appeared to be damaged as water rose out of the ground in the concrete drive and then ran over the surface and into the road gully. The gully connects into a highway drainage system that discharges into the manhole outside No.1 (see Figure 5).

Likely Causes of Flooding

Heavy prolonged rainfall onto saturated steeply sloping ground caused the flooding. The resulting surface water runoff overwhelmed any land drainage that was in place at the bottom of the sloping ground and flowed through gardens and between properties onto the road.

A sycamore tree, protected by a TPO, stood in the front garden of No.38 (adjacent to No.36) and its roots caused problems to the culvert. Subsequent to the flooding of the 17th October, it was discovered that a section of the culvert pipework was missing.

Flooding History

There is a history of flooding to the garden of No.36. Before 17th October it had been reported that surface water flowed off the fields and ran along the rear of the back gardens. However on this occasion the flow was much greater and flowed over this drainage route and into all the backgardens between Nos.10 and 36.

Subsequent Work

The property owner of no. 36 has undertaken works to replace part of the culvert that had been damaged by the roots of the sycamore tree using 300mm dia. pipe. However the flooding continued and investigations found that it was the roots of the tree causing the problem. The tree has been taken down but and it is unclear whether the roots have been removed although surcharging water at this location seems to have abated.

To alleviate the flooding to rear gardens some land drainage has been laid, connecting to a pipe in the backgarden of No.10, which discharges into an informal soakaway consisting of a pipe that discharges straight into the ground.

Recommended Actions

Action by	Recommended Action	How
Riparian Owners	Maintain flows in watercourses	Repair damaged culverts and establish a maintenance regime for keeping them clear. Consent would be required from LLFA.
Landowners	Maintain land drains	Establish a maintenance regime and renew damaged land drains.
Landowners	Lay cut-off drains at foot of field	Investigate feasibility of laying filter drains to discharge into watercourse to north and/or south.
Landowners/CCC Highways/LLFA	Investigate condition of culvert carrying watercourse under the garden of no. 38, the public highway and no.1 Victoria Rd. Confirm presence of tree roots in culvert.	Commission CCTV surveys. **To be carried out within the next month.**
Landowners/CCC Highways/LLFA	Investigate damaged drainage adjacent to garages/no. 76 Victoria Road	Commission CCTV surveys. **To be carried out within the next month.**

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.

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
TPO	Tree Preservation Order

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—

(a) which risk management authorities have relevant flood risk management functions, and

(b) 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—

(a) publish the results of its investigation, and

(b) notify any relevant risk management authorities.

A '*Risk Management Authority' (RMA)* means:

(a) the Environment Agency,

(b) a lead local flood authority,

(c) a district council for an area for which there is no unitary authority,

(d) an internal drainage board,

(e) a water company, and

(f) 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

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

Copeland Borough Council
info@copeland.gov.uk, www.copeland.gov.uk, tel. 0845 054 8600

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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如果您希望通过母语了解此信息，
请致电 **01228 606060**

Jeigu norėtumėte gauti šią informaciją savo kalba, skambinkite telefonu 01228 606060

W celu uzyskania informacji w Państwa języku proszę zatelefonować pod numer 01228 606060

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