



13 September 2016 Flood in Lancashire

Flood & Water Management Act 2010

Section 19 Investigation – Covering Report

April 2022

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Executive Summary

After a few preceding days of high temperatures, heavy rainfall fell on Lancashire during the night of 13 September 2016. The most significant impacts were experienced in Earby area of Pendle although several other locations reported flooding to property during the same time-period.

Police officers were forced to make road closures as Earby Beck burst its banks, flooding the road and leaving behind silt and other debris. Many residents reported blocked gullies and drains which lead to residents' properties being inundated with up to 150mm (6 inches) of water. Roads and footways were also inundated in various locations, attended to by Lancashire County Council Highways teams, and surface water flooding was reported or observed in many other locations over the same brief period of time.

Overall, 33 properties have been reported as flooding in this event of which 11 were homes that were internally flooded with water inside habitable rooms.

In the intense rainfall, rain fell faster than it could be collected and dispersed by local urban drainage networks. The existing drainage networks in the affected locations did not provide capacity to quickly accommodate the run-off from the intense rainfall events that night and this resulted in widespread flooding of homes and roads.

The incident has reminded all involved of the ongoing potential for extreme rainfall events, which are becoming more likely to happen as the UK climate changes.

All public authorities with drainage responsibilities are reminded of the need for their systems to remain in the best possible working order to provide full capacity.

All asset owners are urged to consider the potential of flooding to their property, and to make whatever improvements they find reasonable to reduce the risk of flood water entering and damaging their properties (flood resistance), and also to consider adapting their properties to bounce back better if water does ingress (flood resilience).

SECTION 1 – INTRODUCTION AND PURPOSE OF THE REPORT

1.1 Flood & Water Management Act 2010 Duty

1.1.1 Lancashire County Council (LCC) as a Lead Local Flood Authority (LLFA) has a duty to investigate flooding in accordance with Section 19 of the Flood and Water Management Act 2010 (FWMA) as follows:

1.1.2 Section 19 states:

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.

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.

1.1.3 The terms 'risk management functions' and 'risk management authorities' are defined in Section 2.

1.2 Lancashire & Blackpool Local Flood Risk Management Strategy

1.2.1 In addition to the requirements of Section 19 of the FWMA, the Lancashire and Blackpool Local Flood Risk Management Strategy (LFRMS) sets out how flood risk should be managed locally.

SECTION 2 - DEFINITIONS AND RESPONSIBILITIES

2.1 Key Definitions

2.1.1 The Risk Management Authorities

2.1.1.1 The risk management authorities (RMAs) are identified in the FWMA as follows:

- a. The Environment Agency,
- b. The 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.

2.1.1.2 Each of these organisations has powers and duties under various legislation and regulations for the responsible management of natural water, flood risk and in some cases coastal erosion.

2.1.1.3 The FWMA requires all the RMAs to cooperate with other relevant authorities in the exercise of their flood and coastal erosion risk management functions.

2.1.1.4 In Lancashire, the RMAs support partnership working in the following ways:

- at operational levels by joint investigations and through the Making Space for Water meetings;
- at tactical level by sharing priorities and direction between organisational managers, and
- at strategic level by engaging with Councillors/Cabinet Members/Senior Managers.

2.1.1.5 Lancashire, Blackpool and Blackburn-with-Darwen are also represented on the North West Regional Flood and Coastal Committee where cross-boundary projects, resources and data are shared with Cumbria, Greater Manchester, Merseyside and Cheshire.

2.1.1.6 The village of Earby in Pendle District is a special case in that it lies within a river catchment that falls towards North Yorkshire, so its local Environment Agency services are supplied through the Yorkshire team. This gives the Lancashire partnership a direct connection to the Yorkshire Regional Flood & Coastal Committee. Earby also receives services from the Earby and Salterforth Internal Drainage Board (IDB), which replaces a number of the lead local flood authority functions.

2.1.2 The Risk Management Functions

2.1.2.1 The RMAs have responsibility for flood risk management functions as defined under Section 4 (2) of the FWMA:

- (a) a function under this Part,
- (b) a function under section 159 or 160 of the Water Resources Act 1991,
- (c) a flood defence function within the meaning of section 221 of that Act,
- (d) a function under the Land Drainage Act 1991,
- (e) a function under section 100, 101, 110 or 339 of the Highways Act 1980, and
- (f) any other function, under an enactment, specified for the purposes of this section by order made by the Minister.

2.1.3 Riparian Landowners

2.1.3.1 The legal term 'riparian' is applied to landowners who own land adjoining or containing a river or watercourse. They have certain rights to use the water flowing across their land for their own purposes, and in regard to flood risk management they also have a number of responsibilities, including the following:

- to maintain the bed and banks of the watercourse, and also the trees and shrubs growing on the banks
- to clear any debris, even if it did not originate from their land. This debris may be natural or man-made
- to keep any structures within their ownership clear of debris. These structures include culverts, trash screens, weirs and mill gates

2.1.3.2 If riparian landowners do not fulfil their responsibilities, they may face enforcement action taken by the relevant RMA.

2.1.4 Interconnections between responsibilities

2.1.4.1 Public sewers in Lancashire are principally the responsibility of United Utilities plc or Yorkshire Water plc. Copies of the record maps indicating the location of public sewers in Lancashire are held in the water companies head offices. These companies also keep records of pumping stations and any water treatment works which form part of the public sewage system.

2.1.4.2 Private drainage systems are the responsibility of each owner whose property it drains. Where more than one property uses a private pipe, responsibility is normally shared proportionately. The private system comprises all the pipes up to the point of connection with a public sewer (this can include the entire system where connected to a septic tank, cesspool or soakaway). Formal records indicating the location of private drainage systems are not held by any RMA. The deeds of a property may include details.

2.1.4.3 The highway surface water drainage of all adopted public roads, other than trunk roads or motorways, is the responsibility of LCC as the local highway authority, including roadside drainage gullies and certain roadside ditches. Drainage from trunk roads and motorways is the responsibility of National Highways (formerly Highways England and the Highway Agency). Drainage of private unadopted roads is normally the responsibility of private property owners who make use of or adjoin the road.

2.1.4.4 Land drainage comprises systems of rivers, watercourses, ditches, culverts, pipes, lakes and ponds intended to drain water resulting from rainfall and flows from underground sources. Typically, the primary responsibility for maintaining responsible flows in land drainage systems lies with the riparian owner or owners, with the LLFA, Environment Agency, IDB or local councils holding enforcement powers to use if the land owner/s default in their duties.

2.1.4.5 All drainage systems eventually discharge into the sea as the lowest possible point for water to collect. In Lancashire, this is at Morecambe Bay or the Irish Sea directly.

2.1.4.6 All drainage networks are formed from combinations of these systems to overcome historic demands of efficiency, simplicity and convenience. For example, a highway gully may well connect to a length of highway drainage pipe before connecting to a private ditch, or a public surface water sewer, or directly to a main river. The original reasoning for these arrangements may now be forgotten or inappropriate for current needs, but the physical interconnection of drainage systems means that it is often impossible to tell just from looking at flood water exactly where the barrier to flow arises and therefore exactly which organisation may need to take remedial action.

2.1.4.7 It is therefore vital for the RMAs to share information and collaborate during investigations and that they are allocated to the appropriate organisation to lead.

2.2 Key Functions of the RMAs

2.2.1 Environment Agency

The flood risk management responsibilities of the Environment Agency include the following:

- a. strategic overview for all forms of flooding;
- b. provision of a National Strategy for Flood and Coastal Erosion Risk Management (FCERM) to cover all forms of flooding;
- c. a power to request information from third parties in connection with flood risk management duties. Risk management authorities have a duty to co-operate with the Environment Agency in the provision of such information;
- d. a duty to co-operate with other relevant authorities in the exercise of flood risk management functions, which may include the sharing of information with other relevant authorities;
- e. a duty to have regard to Local Flood Risk Management Strategies;
- f. a duty to be subject to scrutiny from lead local flood authorities' democratic processes;
- g. responsibility for managing coastal flooding;
- h. responsibility for managing fluvial flooding from main rivers;
- i. updated provisions for the regulation of reservoirs;
- j. permissive powers to carry out maintenance work on main rivers under Section 165 of the Water Resources Act 1991;
- k. the provision of flood forecasting and warning services;

- l. the provision of flood maps;
- m. the provision of flood related information and advice;
- n. investment in flood defences, supplemented through partnership funding where appropriate;
- o. a power to take enforcement action where flow in a main river has been impeded and may cause a flood risk.

2.2.2 Lancashire County Council

2.2.2.1 LCC has a dual risk management role, in its capacity as both highway authority and LLFA.

2.2.2.2 The County Council as the LLFA has a number of duties and powers, in addition to the duty to investigate flooding set out above. These include:

- a. a duty to develop, maintain, apply, monitor and consult on an LFRMS for its area (copy available from the LCC website www.lancashire.gov.uk);
- b. a duty to develop and maintain a register of structures or features which might impact on flood risk, including ownership and condition (the Flood Risk Asset Register is available on the LCC website www.lancashire.gov.uk);
- c. the management of the consenting process for works that are likely to affect the flow characteristics of ordinary watercourses (Land Drainage Consent – guidance available on the LCC website www.lancashire.gov.uk);
- d. a power to undertake works for managing flood risk from surface run-off or groundwater;
- e. a power to request information from third parties in connection with flood risk management duties. RMAs have a duty to co-operate with the LLFA in the provision of such information;
- f. a power to designate structures and features that affect flooding or coastal erosion.
- g. a power to take enforcement action where there is an obstruction to an ordinary watercourse that may cause a flood risk.

2.2.2.3 LCC as the local highway authority has a duty under the Highways Act 1980 to maintain highways that are maintainable at public expense. This includes responsibility for highway drainage, as well as for the condition and safety for users of all highway assets including roads, footways, bridges and culverts, street lighting and traffic signals.

2.2.2.4 As the local highway authority, LCC has a duty to co-operate with other relevant authorities in the exercise of flood risk management functions, which may include the sharing of information with other relevant authorities

2.2.2.4 LCC also has private responsibilities for land drainage where it is a land owner.

2.2.3 City and Borough Councils

2.2.3.1 The flood risk management responsibilities of City and Borough councils include the following:

- a. a power to designate structures and features that affect flooding or coastal erosion;
- b. a duty to exercise their flood risk management functions in a manner consistent with local and national strategies, and to have regard to those strategies in their other functions;
- c. a duty to be subject to scrutiny from LLFAs democratic processes;
- d. a power to do works on ordinary watercourses
- e. a duty to co-operate with other relevant authorities in the exercise of flood risk management functions, which may include the sharing of information with other relevant authorities.
- f. a power to take enforcement action where there is an obstruction to an ordinary watercourse that may cause a flood risk.

2.2.3.2 City and Borough Councils have a number of wider functions and roles that can be relevant to flood risk management and response. These include local planning, housing, environmental health and community engagement activity, as well as private responsibilities for land drainage where they are a land owner.

2.2.4 Internal Drainage Board

2.2.4.1 An Internal Drainage Board (IDB) is a local public authority established in areas of special drainage need in England and Wales. IDBs have permissive powers to manage water levels within their respective drainage districts. IDBs undertake works to reduce flood risk to people and property and manage water levels to meet local needs.

2.2.4.2 The expenses of an IDB are predominantly funded by the local beneficiaries of the water level management work they provide. Each IDB sets a budget for its planned work in the forthcoming year and any investments it needs to make for future projects.

2.2.4.3 More information about IDBs can be found from the Association of Drainage Authorities (www.ada.org.uk).

2.2.5 Water Companies

The flood risk management responsibilities of water companies (in Lancashire: United Utilities plc and Yorkshire Water plc) include the following:

- a. a duty as sewage undertakers under Section 94 of the Water Industry Act 1991, to provide & maintain sewers for the drainage of buildings and associated paved areas within property boundaries;
- b. responsibility as sewerage undertakers for lateral drains and public sewers, the latter being defined as a conduit, normally a pipe that is vested in a Water and Sewerage Company, or predecessor, that drains two or more properties and conveys foul, surface water or combined sewage from one point to another point and discharges via a positive outfall;

- c. responsibility for any flooding which is directly caused by its assets – i.e. its water or sewerage pipes;
- d. a duty to be subject to scrutiny from lead local flood authorities' democratic processes;
- e. a requirement to exercise flood risk management functions in a manner consistent with the national strategy and guidance and have regard to the local strategies and guidance;
- f. a duty to co-operate with other relevant authorities in the exercise of flood risk management functions, which may include the sharing of information with other relevant authorities.

2.3 Civil Contingencies Responsibilities

The RMAs listed above (with the exception of the IDBs) have additional responsibilities under the Civil Contingencies Act 2004, which provides the statutory basis for dealing with a response to flooding in emergency situations. These include flood preparedness planning and flood response.

SECTION 3 – METHODOLOGY AND INTERPRETATION OF THE SECTION 19 DUTY

3.1 This covering report provides a commentary on the flooding events of 13 September 2016. It based on reports made to the LLFA by individual people and their representatives (including councillors and Food Action Groups), and reports made by the Risk Management Authorities (RMAs).

3.2 Appendix A records the individual communities affected by flooding that day, and the nature of the flooding where that can be confidently expressed, the RMAs with duties relating to that flooding mechanism, any work known to have been done to mitigate the risk of that type of event happening again, and any investigations or works for RMAs still to complete.

3.3 Appendix B records the individual streets on which various flooding incidents have been reported at the time of publication of this report.

SECTION 4 – THE WEATHER EVENT

4.1 The significant rainfall in Lancashire on the 13 September 2016 was as a result of a heatwave that hit the UK from 12 to 15 September. A hot southerly airflow from Spain and France meant that the UK experienced its equal-second warmest September since 1910. The hot and humid air resulted in thunderstorms and intense downpours.

4.2 From 1400hrs to 2300hrs on 13 September, outbreaks of showery rain turned torrential across parts of northern England, with parts of Lancashire experiencing thundery downpours.

4.3 42 properties reported flooding across Lancashire in the following districts:

- Burnley
- Chorley
- Pendle
- Rossendale
- South Ribble
- Wyre

4.3 Earby in Pendle was significantly impacted by this downpour, where the intense rainfall caused Earby Beck to burst its banks, leading to significant flash flooding in the town and police having to close roads. 9 properties in this area were internally flooded and firefighters also had to rescue ten people stranded in a restaurant.

4.4 Lightning strikes cut power to 35,000 properties in Burnley at 1923hrs. All customers were restored by automatic systems within three minutes. 32,302 properties in Nelson also had a power cut caused by lightning at 2011hrs with 13,000 restored within three minutes, and around 19,000 off for around two hours after engineers were required to attend site for safety reasons.

SECTION 5 – IMMEDIATE RESPONSE TO THE FLOODING

5.1 On the night of the flooding, LCC Highways sent a gully wagon to Earby where the gullies were surcharging. The gully wagon and its crew ensured that the gullies were free flowing in the vicinity of the flooding and conducted jetting until around 0230hrs to hose down any residual silt and generally assist with any remedial clean-up for the road to be reopened.

5.2 When the road was inspected the next morning, it was open and passable

5.3 Police didn't consider the incident a major event to be escalated to the county-wide emergency planning team. There was no indication that there were any threats to life or property that would require a multi-agency response.

5.4 Firefighters from Colne, Barnoldswick, Nelson, Earby and Preston were mobilised to evacuate the public and clear the floodwater from affected areas.

5.5 Our assessment of the RMAs responses to this flooding event has not identified any data from Earby and Salterforth IDB, despite its proximity to and involvement in Earby's drainage management. Because of the IDB's focus on agricultural land drainage management, it is likely that the IDB was not directly involved in the urban flash-flooding of Earby village, however this is a gap in communications which should be corrected in case the IDB is able to offer insights, advice and/or options for improvement of local drainage systems that would benefit the urban area in the future.

5.6 Appendix A to this report records the various experiences in different communities affected by flooding during this rainfall event. This log identifies the following information:

- District Council area;
- Settlement/locality where flooding was reported;
- Number of properties known to be affected by flooding;
- Our assessment of the primary flooding mechanism/s in that locality;
- Which flood Risk Management Authorities have had a role in managing the flood risks identified;
- What has been done as a consequence of receiving the flooding reports from local people, and/or what more is required at the date of publication.

5.7 Appendix B to this report records the names of the streets reported to the county council, where property is known to have flooded during this event. Whilst it is good practice to record all types of property flooded including homes, gardens/outbuildings, community assets/public highways and other private property including schools, offices and business-premises, in this event the reports received all related to homes and to highways.

SECTION 6 – NEXT STEPS

6.1 All RMAs are urged to evaluate the impact that climate change is having and will continue to have on their drainage assets in future years, and make decisions on how they will respond. Proven options for managing peak rainfall intensity include:

- Improved maintenance of capacity in all drainage systems;
- Increased permeable areas, particularly in urban and other paved environments to minimise speed and volume of run-off;
- Increased attenuation, so excess storm water can be safely stored and released gradually into drainage systems as the weather system passes away;
- Increased tree and shrub planting as these features can absorb more rainwater than grass.

6.2 Similar measures on private property can also be very effective at managing the peaks of an intense rainstorm, and at giving local people more control over the way they are affected in such weather conditions.

6.3 Working with communities and working in partnership are key recommendations of the national and Lancashire flood risk management strategies. The Lancashire RMAs are all committed to finding better ways to make this advice more widely known and understood, and to helping people to access advice in particular through the Flood Hub website: www.thefloodhub.co.uk, a resource provided by all the North West region's RMAs working in partnership.

6.4 The LLFA will endeavour to make meaningful contact with the Earby and Salterforth IDB, in order to establish a more complete picture of the extent and impact of flooding and to maximise any opportunities for future access to appropriate funding support.

SECTION 7 – SUMMARY AND CONCLUSIONS

7.1 The rainfall event of 13 September 2016 was extreme enough to overwhelm natural and man-made drainage networks across some locations of Lancashire, with particularly damaging flooding across Pendle and Lancaster districts.

7.2 There are many damaging effects of intense rainfall in urban areas, including:

- Traffic driving at speed through standing water in the road, creating bow waves washing off streets onto private property;
- Vehicles abandoned in the flooded roads, impeding access for emergency vehicles;
- Water-ingress at low-lying properties.

7.3 Flash flooding will be a more frequent occurrence in UK and Lancashire summers, because climate change is generating warm air more frequently and at higher temperatures than have been the norm, absorbing significantly more moisture and releasing it extremely quickly over small areas of land in thunderstorm conditions. Rainfall events of this nature are difficult to predict in advance, and there can be no assurance of early warnings for very local areas.

7.4 All parties – public authorities, business establishments and private individuals - are urged to consider the risks to their assets, property and activities of future flash flooding, and make appropriate adaptations to minimise the impact these severe events can have on them.

7.5 There is a wealth of information and advice available for landowners and householders, to help them consider managing flood risk for their own properties (see thefloodhub.co.uk).

7.6 It remains vital that partner authorities recognise the need for sharing of data relating to impacted homes in future flood events, as these data enable access to funding for future improvement projects.