1 June 2018 Floods in Lancashire

Flood & Water Management Act 2010

Section 19 Investigation Report

October 2019

Contents

Executive Summary

The evening of Friday 1 June 2018 brought a series of very localised, high intensity downpours to parts of Lancashire. These isolated weather events were not significant enough to be noticed on a national scale and few meteorological records are available to describe the event, although thunderstorms with a low risk of flooding were forecast for Lancashire by the Met Office on Wednesday 30 May.

Emergency responder records indicate that there were flooding incidents in various locations including Leyland, Lea (Preston), Pilling (Wyre), Bacup, Accrington, Barnoldswick, Earby and Longridge, which were reported to the county council from 7pm onwards.

From the records provided after the event by affected people and by the flood Risk Management Authorities (RMAs), we have identified that 60 homes flooded at some point that evening, of which 19 were flooded internally to at least one habitable room. Whilst there were multiple instances of flooded highways which have not been included in the Section 19 investigation, no other premises types have been reported as flooding - for example: schools or business premises.

A report under Section 19 of the Flood & Water Management Act 2010 is required to document the investigations made into the localised flood events occurring on the night of 1 June 2018 that have been reported to the Council either directly by our residents or their representatives, or via the flood Risk Management Authorities (RMAs) if they received the first reports directly. This report is required to identify where further studies or works are needed, and by which RMA. Appendix A to this covering report provides that documentation.

In regard to this event, none of the RMAs have any outstanding studies or works to be completed. It is a key finding of this Section 19 investigation that the reported flooding was principally in urban locations where the drainage systems were temporarily overwhelmed by the intensity of the rainfall. There are currently no programmes of investment to increase the general capacity of such drainage systems.

There are achievable and sustainable responses available for communities seeking improved protection from similar rainfall events should these occur in the future. Depending on particular local circumstances responses might include any combination of the following suggestions:

- Improved drainage system maintenance regimes;
- Increased area of absorbent land within urbanised streets (for example more trees and shrubs, increased unpaved areas in highways, gardens & yards);

- Localised temporary road closures to reduce bow waves washing off streets onto private property;
- Improved protection against water-ingress at vulnerable properties;
- Improved 'warning and informing'-type communications to trigger appropriate action, temporary defences etc.

Measures of these types can be very effective at more safely managing the peaks of an intense rainstorm, and at giving local people more control over the way they are affected in such weather conditions. All the RMAs are ready and willing to work with local community groups and Parish Councils to identify and introduce measures appropriate for their local circumstances. We are all committed to finding better ways to make our offers more widely known about, and to helping people to access our teams for advice.

Any individuals who want to consider what they might do for themselves will find practical and realistic suggestions on the dedicated North West Flood Hub (thefloodhub.co.uk)

Working with communities and working in partnership are key recommendations of the emerging national flood risk management strategy.

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.

1.2.2 The LFRMS states that the Section 19 investigations will help to:

Improve the understanding of flood risk by providing an invaluable tool for understanding the sources and mechanisms of flooding;

Identify assets that have a flood risk management function, which may need to be designated; and

Identify where additional works and studies are likely to be necessary, that LCC or other risk management authorities can integrate into their prioritised flood risk management plans.

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 Highways England. 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 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).

2.2.4.4 The Earby and Salterforth IDB covers part of Lancashire affected by the flooding event to which this report refers. This IDB has no resources or expertise to contribute to the Section 19 investigation process.

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 IDB) 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

3.1 Interpretation of the Section 19 Duty

3.1.1 This covering report provides a commentary on the flooding events of the evening of 1 July 2018.

3.1.2 Although the individual impacts of the weather that evening were distributed across a wide area of the county, the council has interpreted the event as one flooding event for the purposes of the Section 19 investigation. Localised site investigations have been carried out by the Risk Management Authorities (RMAs) subject to local circumstances.

3.1.3 Appendix A records the individual communities affected by flooding that evening, and the nature of the flooding where that can be confidently expressed. It also identifies 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.

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

3.1.5 RMAs will be able to provide details regarding their specific investigations and any further works arising.

3.1.6 Drainage networks interconnect in sometimes complicated ways for historic reasons. Partnership working and joint investigations between the RMAs are essential to identify the appropriate options in all communities and to deliver flood risk management improvements.

SECTION 4 – THE WEATHER EVENT

4.1 On Wednesday 30 May 2018, the Met Office issued a weather warning relating to forecasts of thunderstorms and heavy rain on Friday 1 June expected between 0900 and 2200hrs. This was updated on Thursday 31 May. The warning advised that there was a very low risk of medium impacts across a large area of Britain including most of Wales, all of Northern Ireland, the North West and West Midlands of England and most of Scotland.

4.2 The Met Office has since published the following description of weather conditions during the day:

Summary of the UK Weather for Friday 01 June 2018

After a cloudy and damp start for most places, some bright and warm spells of sunshine developed for many. However, low cloud and coastal mist lingered along southern coasts through the day. It felt warm and humid in the sunny spells, and heavy, scattered showers developed through the afternoon. Thunderstorms formed in the heaviest showers across Wales, Northern England, Northern Ireland and Scotland with frequent lightning. Eventually, the heavy showers eased away through the evening and low cloud moved back inland from coastal areas.

4.3 The same report identifies that Lancashire did not experience the highest rainfall that day, although we have not found any record of what rainfall did fall on the county.

Most Rainfall 52.6mm Gladhouse Resr (Midlothian (in Lothian Region), 279 mAMSL)

4.4 Eye-witness accounts from the event have been received from council officers and anecdotally local people have reported rain being forced inside buildings through the window frames by the intensity of the storm passing overhead, as well as deep water rushing downhill on main roads.

4.5 A number of locations across Lancashire were particularly affected by intense bursts of heavy rainfall during the evening. The speed and volume of this rain couldn't be accommodated by local urban drainage networks (public and private), leading to surface water flooding of highways, homes, gardens and garages.

4.6 The worst-affected town was Longridge in the Ribble Valley, although significant experiences were felt elsewhere across the central belt of the county, locations indicated in Figure 1 below.

4.7 The same weather conditions affected the administrative area of Blackburn-with-Darwen Council (a neighbouring authority very close to the affected areas of Lancashire. Local conditions in that area have not triggered a Section 19 investigation.

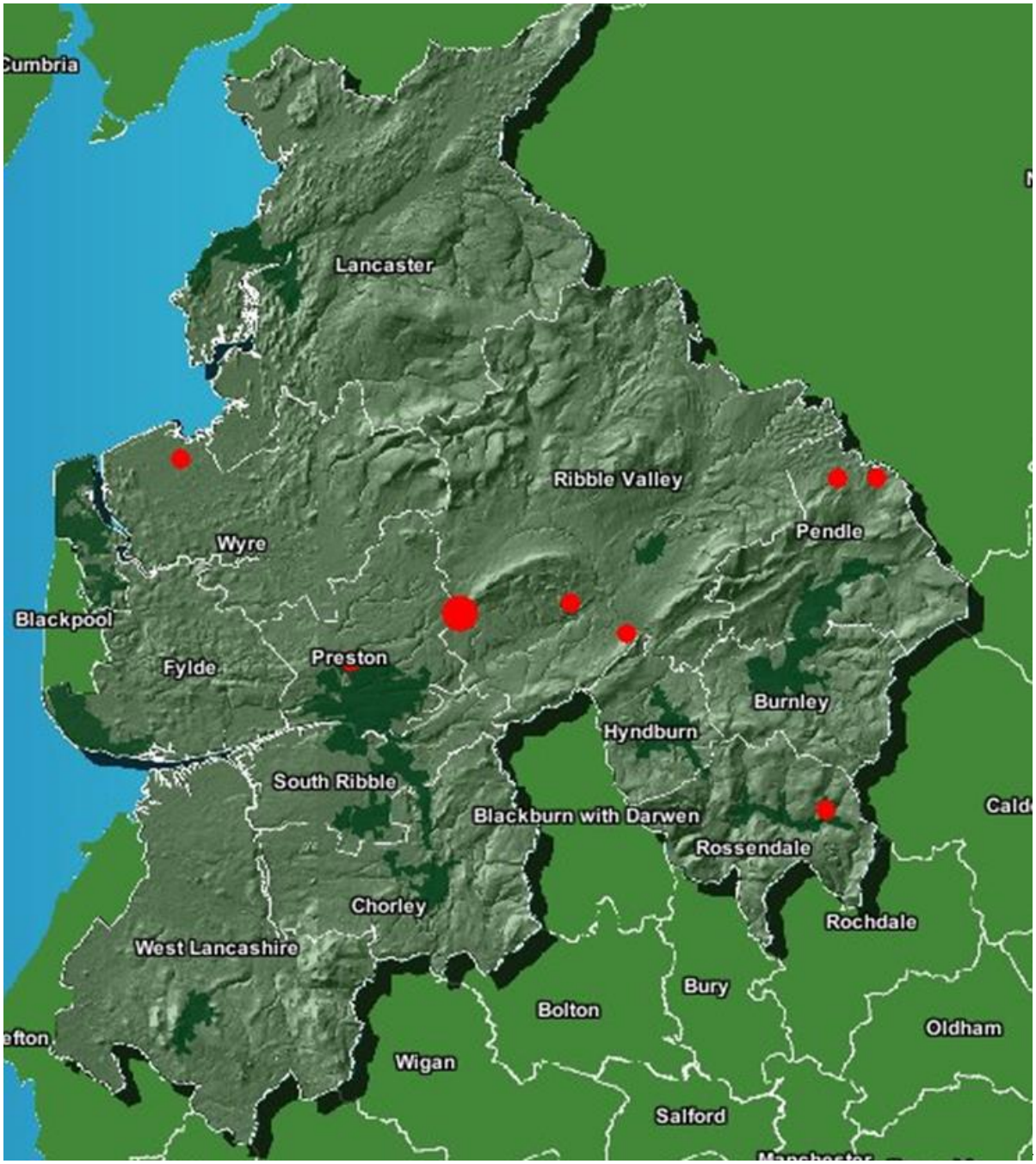

Fig.1. – Indicative locations of reported flooding, Lancashire 1 June 2018

SECTION 5 – RESPONSE TO THE FLOODING

5.1 On the night of the flooding, responses were made on the ground to reports of flooding of public highways and private property by the Police, Lancashire Fire and Rescue Service, LCC Highways, United Utilities plc and Yorkshire Water plc.

Fig.2 – Emergency response to report of flooded road, Greaves Town, Preston

5.2 There was no direct emergency response from the Environment Agency, as no river or coastal flooding occurred.

5.3 Equally, there was no emergency response from the District and City Councils, as the scale and extent of the incidents were managed within the resources available to the first responders and did not trigger any major incident procedures.

5.4 Starting the following morning as flood waters died away, the county council's Highway Service began to attend every highway location reported or known to have been affected by flooding, to inspect conditions and to remove silt from gullies and drainage systems. United Utilities plc and Yorkshire Water plc carried out equivalent exercises for the public sewer network.

5.6 In some locations, these inspections found that the local urban drainage networks had been obstructed by debris washed in during the rainstorm. In other locations, longer-running capacity reductions were found relating to ingress of tree roots, which had slowed the flow of surface water run-off by trapping silt and other small debris.

5.7 Appendix A to this report records the various experiences in different communities affected by flooding during this rainfall event. It 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.

5.8 Appendix B 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 only reports received related to homes and to highways.

5.9 Because the standing water on the public highway happened across much of the county and disappeared quickly following the end of each rainfall event, in this Section 19 investigation we have only taken account of highway flooding where it directly relates to the reports we received of flooding to homes and gardens.

SECTION 6 – NEXT STEPS

6.1 Where appropriate, the RMAs' options for further action would normally be identified in Appendix A as part of our report into the way the RMAs responded to this flooding event.

6.2 On the evening of Friday 1 June 2018, towns and villages were particularly badly affected, with rain falling 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 accommodate quickly the run-off from the intense rainfall events that night.

6.3 There are achievable and sustainable responses available for communities seeking improved protection from similar rainfall events should these occur in the future. However there are no programmes for any of the Lancashire RMAs to invest in up-scaling their drainage networks to provide additional capacity for rainfall events of this nature.

6.4 Depending on particular local circumstances, sustainable activity might include any combination of the following suggestions:

- Improved drainage system maintenance regimes including better-targeted of maintenance activities;
- Increased areas of absorbent land within urbanised streets (for example more trees and shrubs, increased unpaved areas in highways, gardens, drives & yards);
- Localised temporary road closures to reduce bow waves washing off streets onto private property;
- Improved protection against water-ingress at vulnerable properties;
- Improved 'warning and informing'-type communications to trigger appropriate local action, deployment of temporary defences etc.

6.5 Measures of these types can 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. All the RMAs are ready and willing to work with local community groups and Parish Councils to identify and introduce measures appropriate for their local circumstances.

6.6 Any individuals who want to consider what they might do for themselves will find practical and realistic suggestions on the dedicated North West Flood Hub (thefloodhub.co.uk)

6.7 Working with communities and working in partnership are key recommendations of the emerging national flood risk management strategy. The Lancashire RMAs are all committed to finding better ways to make our offers more widely known about, and to helping people to access our teams for advice.

SECTION 7 – SUMMARY AND CONCLUSIONS

7.1 The rainfall event of 1 June 2018 was extreme enough in some locations of Lancashire to overwhelm many urban drainage networks. Whilst it was not the most damaging event in recent years, affected people were extremely concerned for their own safety and for the damage that occurred to their homes and belongings.

7.2 Given that flood risk will always be present in a large county area such as Lancashire, it is important that the county, as Lead Local Flood Authority, records the experiences arising from all notable flood events, ensuring they are captured and used alongside technical information to identify and deliver improvements and advice to affected people.

7.3 This report identifies that it would be unrealistic for anyone to expect a substantial investment to increase the capacity of their local drainage systems, as there is currently no such investment available and no plans to start new programmes of that type.

7.4 The report identifies that it is realistic to look into better ways of managing flood risk within community areas, enabling local people to have more control of the way their homes and localities might be best protected through an intense rainfall event and then might recover most swiftly afterwards.

7.5 Such work is mostly delivered during the day-to-day activities of the RMAs, and progress on local initiatives is shared with local communities through existing communication channels. This work and the wider responsibilities of the county as Lead Local Flood Authority are overseen by the Lancashire Strategic Partnership and, more widely, by the Regional Flood and Coastal Committee.

7.6 It is hoped that the suggestions made in this report will be developed locally to improve the flood resilience of the affected areas. From the experiences during and after this flood incident, the county council together with partner organisations are developing an improved understanding of the way our incident response, community engagement and data collection activities are interlinked. This is informing our development of improved procedures to respond to future flooding events to further improve the flood knowledge and response in the county.