

# July 2021 Flooding in Lancashire

**Factory Lane, Penwortham, South Ribble**

**Flood & Water Management Act 2010**

**Section 19 Investigation Report**

**December 2023**

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## Executive Summary

Although there had been a modest history of rainwater being slow to drain off the highway at Factory Lane over a number of years, matters became identifiably worse following clearance in March 2021 by South Ribble Borough Council of an historical obstruction on a watercourse upstream of Factory Lane, in the Council's nearby Middleforth Green Park.

This allowed the full flow of the watercourse to reach Factory Lane for the first time in many years. This revealed that there were obstructions to the water flowing away downstream from Factory Lane.

Three individual flooding events between 3 July and 12 July 2021 significantly disrupted access along Factory Lane for residents and businesses, encroached into drives and garden areas, and caused damage on all 3 occasions to one home in particular.

Investigations were initially carried out into local highway drainage systems by Lancashire County Council in its capacity as local highway authority. It soon became clear that the newly-identified obstructions to flow were in a watercourse on private land, and the County Council's flood risk management team (on behalf of the lead local flood authority) pursued the relevant landowners until the obstructions were removed and the worst of the flooding stopped.

Unfortunately, new problems have come to light more recently (summer 2023). These are being pursued and will be resolved as quickly as possible.

A report under Section 19 of the Flood & Water Management Act 2010 is required to document the investigations made into these flooding events. This report is required to identify where further studies or works are needed, and by which risk management authority or authorities.

It is a key finding of this Section 19 investigation that the reported flooding was very localised and was caused by long-running/historic obstructions to the culverts downstream of Factory Lane carrying the local watercourse over private land, which were only revealed once the historic upstream obstructions on the park were removed.

In regard to this event, the risk management authorities that had a role were:

- a) The local highway authority; and
- b) The lead local flood authority.

The lead local flood authority has outstanding investigations to be completed downstream of Factory Lane associated with further defects in the local culverted watercourse.

## **SECTION 1 – INTRODUCTION AND PURPOSE OF THE REPORT**

### **Flood & Water Management Act 2010 Duty**

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

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:

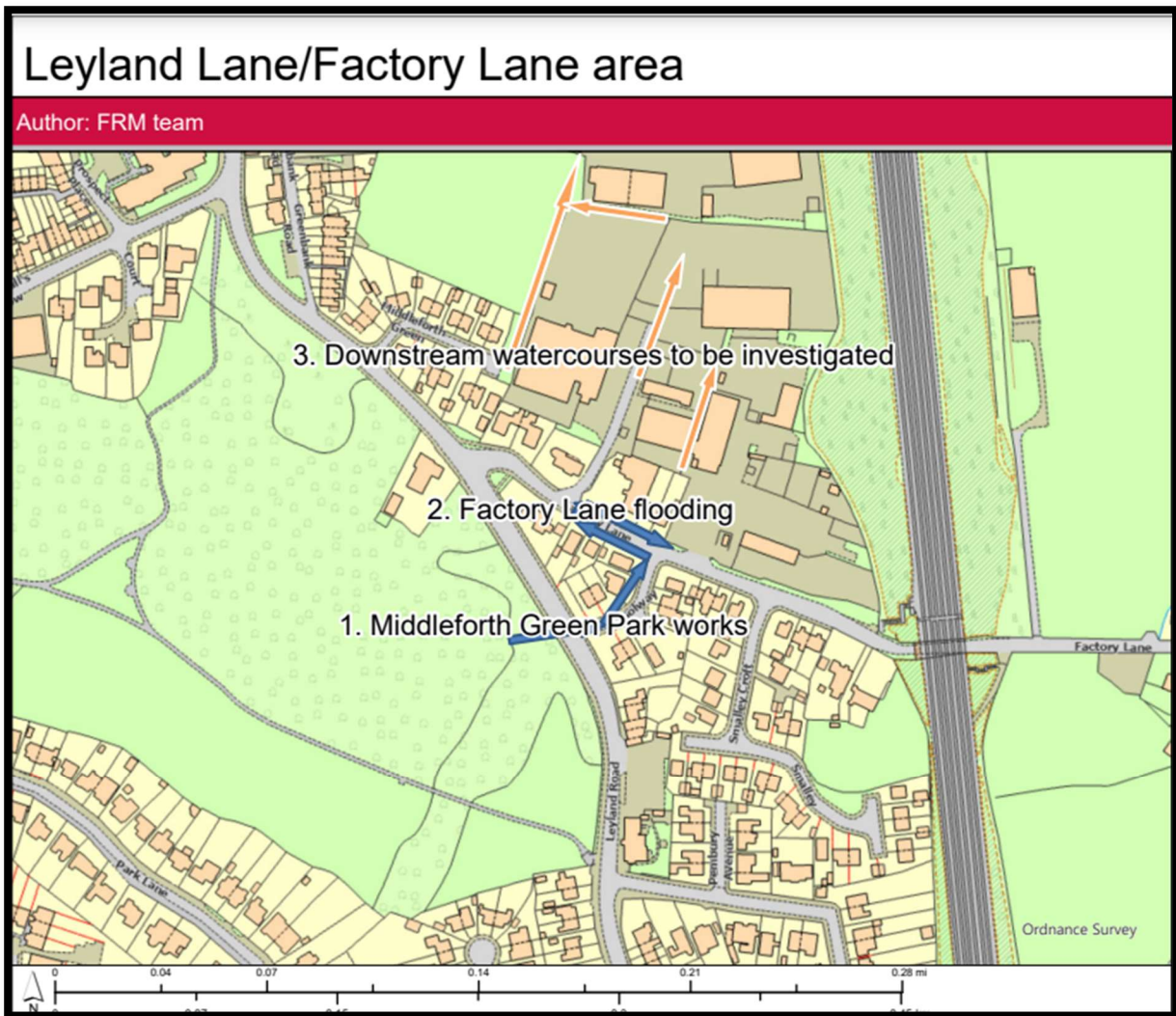
- a) Publish the results of its investigation, and
- b) Notify any relevant risk management authorities.

This report documents our understanding of the events resulting in flooding of a home on 3, 10 and 12 July 2021, and other nearby premises on other dates.

## **SECTION 2 – THE KEY WEATHER EVENTS (JULY 2021)**

**2.1** South Ribble Borough Council carried out works in a length of the local watercourse in the park in March 2021, upstream from Factory Lane. Following that, local weather conditions were generally unremarkable according to Met Office records:

- April began settled, but soon turned very cold, and a notable feature throughout the month was the number of air frosts. Daytime temperatures did recover from the middle of the month, but it was cold and showery in the closing days. Overall it was an unusually cold, dry and sunny month.
- May began very unsettled and unseasonably cold, with frosts in many places; it became less cold after the first week but continued with frequent rain or showers for most areas. The UK experienced a number of deep low-pressure systems that resulted in a number of notably windy days. The weather settled down for the final few days of the month, when it also became much warmer.
- The first half of June was largely dry and warm, though less settled over Scotland towards mid-month. The second half of June saw temperatures broadly nearer to average, with some days very cool for the time of year, and there were numerous showery days over England including some thunderstorms, and some heavy convective outbursts especially in the south-east.



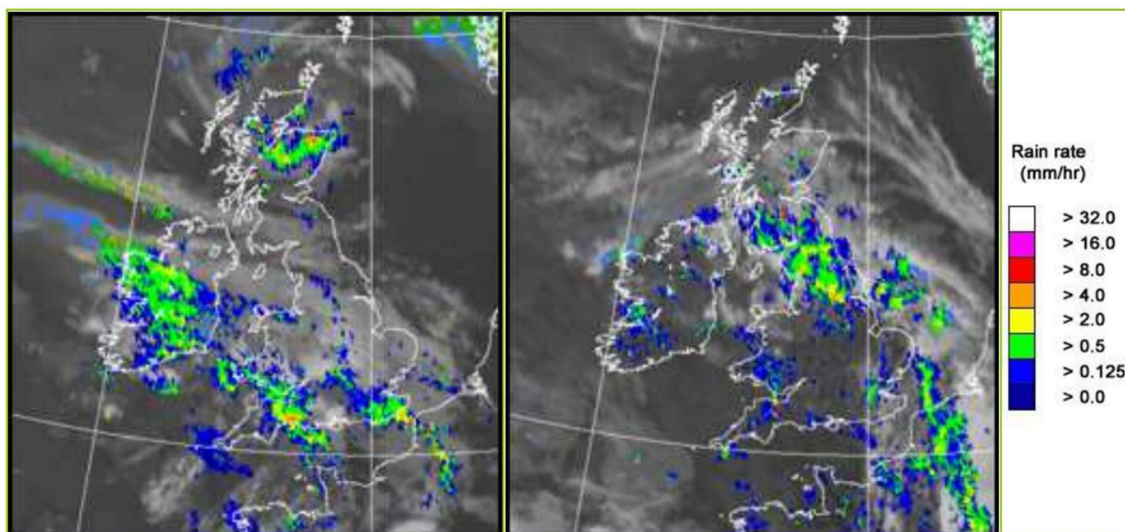
**Figure 01: Location Plan**

**2.2** Nationally, the first twelve days of July were mostly unsettled, with spells of heavy rain and showers, especially over England, while other parts of the UK saw less rain and more warmth at times. All areas were drier and much warmer by mid-month, with temperatures exceeding 30 °C on several days in some areas, and unbroken sunshine for many.

**2.3** Specifically considering the key flooding events at Factory Lane, Met Office records state that the morning of Saturday 3 July 2021 started cloudy across the UK with organised, heavy and persistent rain spreading across Wales, central and northern England and Northern Ireland. Moving into the afternoon, this band of rain approached the north of the UK with northern England and Scotland affected by some torrential downpours which were accompanied by thunder and lighting, then the rain eased through the evening.



### UK satellite and rain-radar precipitation rates at (L) 0000 and (R) 1200 UTC



**Figure 02: UK rainfall radar images Saturday 03 July 2021**

**2.4** Then followed a week of mixed conditions, with no notable weather events in the North West of England.

**2.5** Saturday 10 July started with showery outbreaks, then there were more showers in the evening. The heaviest rainfall in the UK was recorded at Billinge Hill, to the south east of Wigan (approximately 20 miles from Factory Lane).

**2.6** Then on Sunday 12 July, the morning started with heavy rain which lightened off during the afternoon.

## SECTION 3 – RESPONSE TO THE FLOODING

**3.1** Between 3 July and 12 July 2021, Lancashire County Council received multiple reports of blocked gullies at Factory Lane flooding the highway and private property, The Council's local Highways team attended site to clear the gullies and ensure they were free-flowing, however the problems reoccurred in further heavy rain.

**3.2** On 18 July 2021, United Utilities staff attended in response to a report made to them of flooding in the highway. They identified that there were no problems with the public sewer network, and agreed with local views that water was failing to drain away from the highway in heavy rain because of defects in a carrier drain downstream from Factory Lane.

**3.3** A number of localised investigations were then carried out by the County Council's Highways and Flood Risk Management teams working together to plot the layout of the local surface water drainage systems, which in January 2022 eventually identified the complex nature of a shallow-gradient diversion of a culverted watercourse. Tree

roots had made their way into the culvert, which over a long period of time had trapped silt, forming a significant obstruction to flows in heavy rainfall.

**3.4** Using details arising from this investigation, the relevant landowner/s were able to make significant efforts to remove the obstructions and re-establish normal flows.

**3.5** No further incidents of flooding have been reported in this location since the works were carried out.

**3.6** Unfortunately, new reports were made in May 2023 and September 2023 of flooding at a different location on Factory Lane. These are still under investigation at the time of publishing.

## **SECTION 4 – SUMMARY AND CONCLUSIONS**

**4.1** An historic culverted watercourse in Penwortham had fallen into disrepair. This prevented the proper drainage of the watercourse and the local highway drainage systems that depend on it.

**4.2** Following clearance of one significant blockage to this watercourse upstream from Factory Lane in May 2021, the drainage systems around Factory Lane became inundated in heavy rainfall (early in July 2021). Investigations into this situation were complicated by an unexpected layout to the culvert, which appears most likely to have occurred with development of homes around Solway Close in the 1970s.

**4.3** The culvert was in due course repaired by the parties responsible for its upkeep. There has been no repeat of the flooding in this location since these repairs were carried out.

**4.4** The relevant flood risk management authorities connected with this incident were:

- a) the local highway authority, and
- b) the lead local flood authority.

Neither of these authorities has any outstanding works or studies to deliver in connection with this flooding incident, although a new incident nearby has recently come to light and the lead local flood authority has a role in investigating that.

**4.5** This incident has revealed how very important it is that housebuilders properly identify all drainage assets on their site/s and obtain consent for any works impacting on watercourses in advance of development, and responsible arrangements are made at that time for the future access to and maintenance of watercourse assets.

**4.6** The council's Flood Risk Management team endeavours to make advice available to developers alongside every response given to planning consultations, wherever this is identified as appropriate. The council's guidance and procedures for Ordinary Water Course Regulation are made available on the council's website here: [Alterations to a watercourse - Lancashire County Council](#).

**4.7** The team's planning advice service includes an option for developers to engage with us for site-specific advice and guidance on management of ordinary watercourses in and around their sites.

**4.8** The team engages with the Local Plan process, and uses that opportunity to highlight the need for careful management of surface water, and the value of a systematic and thorough approach to surface water management as explained on the council's website: [Lead local flood authority planning advice service for surface water and sustainable drainage - Lancashire County Council](#) and on the Flood Hub website: [Planning & Development | The Flood Hub](#)



## **APPENDIX A – DEFINITIONS AND RESPONSIBILITIES**

### **Lancashire & Blackpool Local Flood Risk Management Strategy**

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

The Strategy 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.

### **Key Definitions**

#### **The Risk Management Authorities**

The risk management authorities are identified in the Act 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.

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.

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

In Lancashire, the risk management authorities support partnership working in the following ways:

- at operational levels by joint investigations and through the Operational 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.

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.

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 which replaces a number of the lead local flood authority functions.

### **The Risk Management Functions**

The risk management authorities have responsibility for flood risk management functions as defined under Section 4 (2) of the Act:

- (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.

### **Riparian Landowners**

The 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.

If riparian landowners do not fulfil their responsibilities, they may face enforcement action taken by the relevant risk management authority.

### **Interconnections between responsibilities**

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.

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 it is connected to a septic tank, cesspool or soakaway). Formal records indicating the location of private drainage systems are not held by any risk management authority. The deeds of a property may include details.

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.

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 landowner/s default in their duties.

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.

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.

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

## **Key Functions of the risk management authorities**

### **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.

### **Lancashire County Council**

This council has a dual risk management role, in its capacity as both highway authority and lead local flood authority.

As the lead local flood authority, the council 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 Strategy for its area (copy available from the website [www.lancashire.gov.uk](http://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 website [www.lancashire.gov.uk](http://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 website [www.lancashire.gov.uk](http://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. Risk management authorities have a duty to co-operate with the lead local flood authority 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.

As the local highway authority, the council 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.

As local highway authority, the council 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.



The council also has private responsibilities for land drainage where it is a land owner.

### **City and Borough Councils**

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 where this has been delegated by the lead local flood authority;
- 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 where the power has been delegated by the lead local flood authority.

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.

### **Internal Drainage Board**

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

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

More information about Internal Drainage Boards can be found from the Association of Drainage Authorities ([www.ada.org.uk](http://www.ada.org.uk)).

### **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 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.

### **Civil Contingencies Responsibilities**

The risk management authorities listed above (with the exception of the Internal Drainage Board) 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.