

FORMAL FLOOD INVESTIGATION REPORT

Upper Dean, Bedfordshire

1.0 Background

The Flood and Water Management Act 2010, establishes unitary and upper tier authorities as Lead Local Flood Authorities (LLFAs). Section 19 of the Act gives LLFAs the duty to investigate a flood event when considered appropriate and to the extent it deems necessary. The LLFA will identify the relevant Risk Management Authority (RMA) and record any actions which have been taken or they are proposing to action in response to the flood event.

When an investigation is carried out under section 19 of the Act, the LLFA will publish the results of the investigation and notify any relevant risk management authorities.

2.0 Risk Management Authority Responsibilities

Table 1.1 shows RMAs responsible for managing the flood risk from different sources that the BBC investigation procedure applies to.

Flood Source	Environment Agency	Lead Local Flood Authority	Drainage Authority	Water Company	Highway Authority
		Bedford Borough Council	Bedford IDB	Anglian Water	Bedford Borough Highways
Main River	✓				
Surface Water		✓			
Surface Water (<i>on or coming off the highway</i>)					✓
Sewer flooding				✓	
Ordinary Watercourse		✓	✓		
Groundwater		✓			
Reservoirs	✓				

Owners of land adjoining, above or with a watercourse running through it are termed 'riparian owners' and have responsibilities to maintain and allow the free flow of water through their land. Further information on riparian owner rights and responsibilities can be found in the Environment Agency publication 'Living on the Edge' [here](#).

3.0 Flood Incident, Extent and Impact:

Heavy rain was forecasted for the 7th – 11th March 2016 across the region. The soil moisture deficit for the Upper and Lower Ouse on Tuesday 8th March was 1mm and 0mm respectively, which meant that the ground was already, saturated.

Data was retrieved from the Environment Agency rain gauges in Covington which is approximately 2.5 miles North East of Upper Dean. 39mm of rainfall was recorded at the Environment Agency's rain gauge at Covington between 00:30 and 20:30 on Wednesday 9th March. The amount of rainfall is equal to the average rainfall expected for the whole of March (Figure 3.1)

Measurements from Covington Brook recorded water levels rapidly rising from 07:00 and peaking at 15:45 on Wednesday 9th March 2016. The water level peaked at 42.17AOD (metres above Ordnance Datum) (Figure 3.1).

The first report of flooding in close proximity to residential properties came from Upper Dean. Internal flooding occurred at three properties along Brook Lane and flooded the garage of another property.

Previous flood incidents of a similar nature have occurred according to our records but more properties have previously flooded.

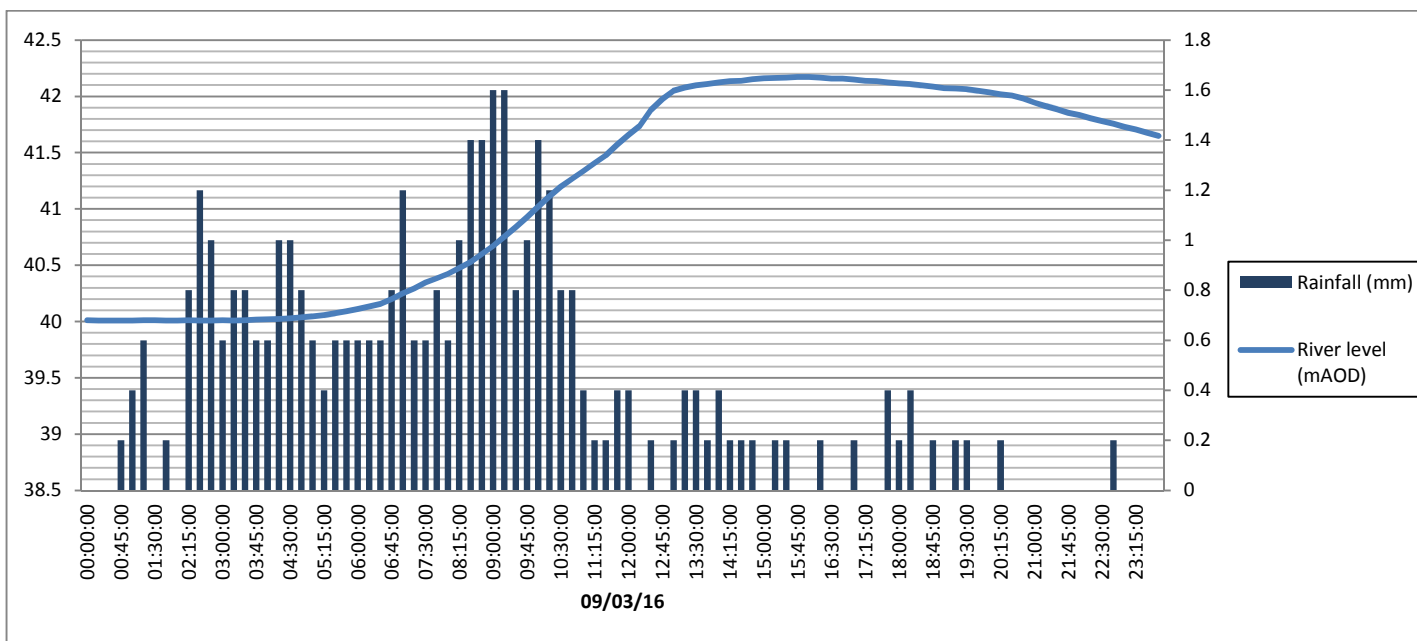


Figure 3.1 Rainfall and River Levels for Covington 09/03/16

4.0 Likely Cause of Flood Incident

A tributary of the River Till runs through Upper Dean and joins the River Till downstream of Lower Dean. Water came out of bank and flooded Brook Lane and properties along Brook Lane. Figure 3.1 shows how quickly river levels came up following the intense rainfall. Surface water also contributed to this flooding where it could not get away through the drainage system.

This has been investigated fully by the Senior Flood Risk Officer, Flood Investigation Officer, Highways and Engineers. It was recommended that following these investigations the water course will be walked to identify areas where maintenance is required to ensure the capacity of the river is kept at its maximum. Further work has also been recommended to look at raising the bank level at stretches of the watercourse where the brook flows along Brook Lane. Highways initially inspected the area and confirmed that the drainage in the area was adequate and no other measures needed in the area.

5.0 Responsible Risk Management Authority

It has been identified that the responsibility for resolving the flooding issues in Upper Dean lies with Bedford Borough Council as the brook is an Ordinary Watercourse. Any surface water will also be the responsibility of Bedford Borough Council. No other Risk Management Authority is involved or responsible. The responsibility to maintain the river will lie with riparian landowners along the stretch of the watercourse.

6.0 Recommended Action

Table 6.1 highlights the recommended actions by Bedford Borough Council for the responsible RMA and a suggested timescale of responses required to confirm that the RMA is aware of the flood incident and is taking appropriate action.

Table 6.1: Recommended actions for the responsible authorities and timescale for a response required.

Responsible Authority	Action	Timescale for response required
Bedford Borough Council Highways	To investigate the building up of the north bank of the Brook, just upstream of Church Lane, Upper Dean.	July 2016
Bedford Borough Council Highways	To investigate flood risk assets in the area to ensure all are working to their full capacity and all ditches are clear.	July 2016
Bedford Borough Council LLFA	To walk the watercourse and identify those areas where maintenance is required. Request these works to be completed by the necessary Riparian Owner.	July 2016

7.0 Next Steps

The next steps for the LLFA are to ensure the report is forwarded to the RMAs identified in table 5.1 and that these authorities are aware of their flood risk management responsibilities. The LLFA will follow up with the authorities to determine progress against the recommended actions.