

FORMAL FLOOD INVESTIGATION REPORT
Yelden, 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.

37.4mm of rainfall was recorded at the Environment Agency's rain gauge at Yelden between 02:00 and 20:30 on Wednesday 9th March 2016. The amount of rainfall is equal to the average rainfall expected for the whole of March (Figure 3.1)

Measurements from the Riseley Brook recorded water levels rapidly rising from 03:00 and peaking at 12:45 on Wednesday 9th March 2016. The water level peaked at 57.19mAOD (metres above Ordnance Datum) (Figure 3.1), over a foot higher than the road flooding in November 2012 which peaked at 56.84mAOD.

Several reports were received from residents in Yelden throughout the day. Internal flooding occurred at one property along Spring Lane, this was made predominately worse by bow waves from passing cars. In three properties along the High Street in Yelden water levels came up to the front door but did not enter the property.

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

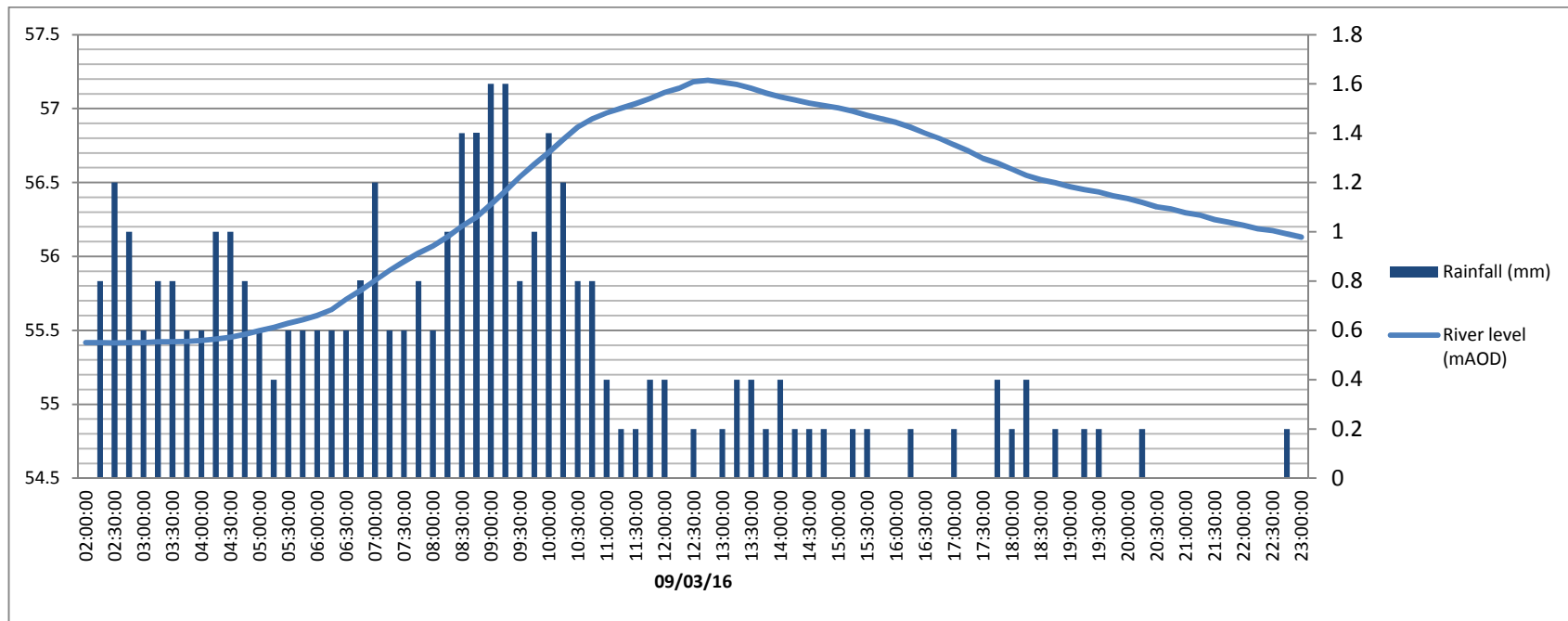


Figure 3.1 Rainfall and River Levels for Yelden and Riseley 09/03/16

4.0 Likely Cause of Flood Incident

The River Till, which runs through Yelden came out of bank and flooded the High Street. 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 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 if the river is kept at its maximum. At the top end of the village, where water first comes out of its bank, Highways will look at filling in the grip on the side of the bank where the river turns to run at right angles down the High Street. Further drainage at this point will also be looked at. The drainage at the far end of the village will also be investigated to see if non return vales on the outfalls into the river will prevent water backing up and flooding the High Street from this end.

5.0 Responsible Risk Management Authority

It has been identified that the responsibility for resolving the flooding issues in Yelden lies with Bedford Borough Council as the River Till 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 infill the grip at the top end of the village opposite High Top Barns and increase the bank height at this location.	October 2016 prior to winter flooding season
Bedford Borough Council Highways	To investigate the drainage opposite High Top Barns and put in additional gullies where required.	October 2016 prior to winter flooding season
Bedford Borough Council Highways	To investigate and put in non-return vales on the outfalls to the Highways drains between Spring Lane and Trailly Close.	October 2016 prior to winter flooding season
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.