Lead Local Flood Authority

Section 19 (Flood and Water Management Act 2010)

Flood Investigation Report

Report Title:

Blomfield Street, Bury St Edmunds, Suffolk

Report References:

FW2021-0515, FW2021-0688, FW2021-0994, FW2021-0999, FW2021-1010, FW2021-1012 & FW2021-1022.

	Name	**Date**
Lead Officer:	*Hannah Purkis*	
Created by:	*Hannah Purkis*	*22/03/2021*
Checked by:	*Simon Curl*	*30/03/2021*
RMA Review:	*Environment Agency*	*28/04/2021*
Approved by:	*Matt Hullis*	*28/04/2021*
Date Published		*30/04/2021*

1.0 Criteria for investigation:

1.1 Suffolk County Council as a Lead Local Flood Authority (LLFA) has determined that in accordance with criteria, it considered it necessary or appropriate to carry out an investigation into this flood event in accordance with Section 19 (1) of the Flood and Water Management Act 2010, and in accordance with Section 19 (2) of the Flood and Water Management Act 2010, to publish the results and notify the relevant risk management authorities (RMAs).

Criteria for an investigation (as per Appendix D of the Suffolk Flood Risk Management Strategy):	**✓/X**
There was a risk to life as a result of flooding?	-
Internal flooding of one property (domestic or business) has been experienced on more than one occasion?	✓
Internal flooding of five properties has been experienced during one single flood incident	✓
Where a major transport route was closed for more than 10 hours as a result of flooding	-
Critical infrastructure was affected by flooding	-
There is ambiguity surrounding the source or responsibility of a flood incident	✓

2.0 **References:** FW2021-0515, FW2021-0688, FW2021-0994, FW2021-0999, FW2021-1010, FW2021-1012 & FW2021-1022.

2.1 **Location:** Blomfield Street, Bury St Edmunds

2.2 **Flood Event Date:** Historically – circa. 2006
Recently – January & February 2021

2.3 **Reported to SCC Date:** 6 No. reports dating from 16/01/2021 to 12/02/2021

2.4 **Investigation Commencement Date:** 22/03/2021

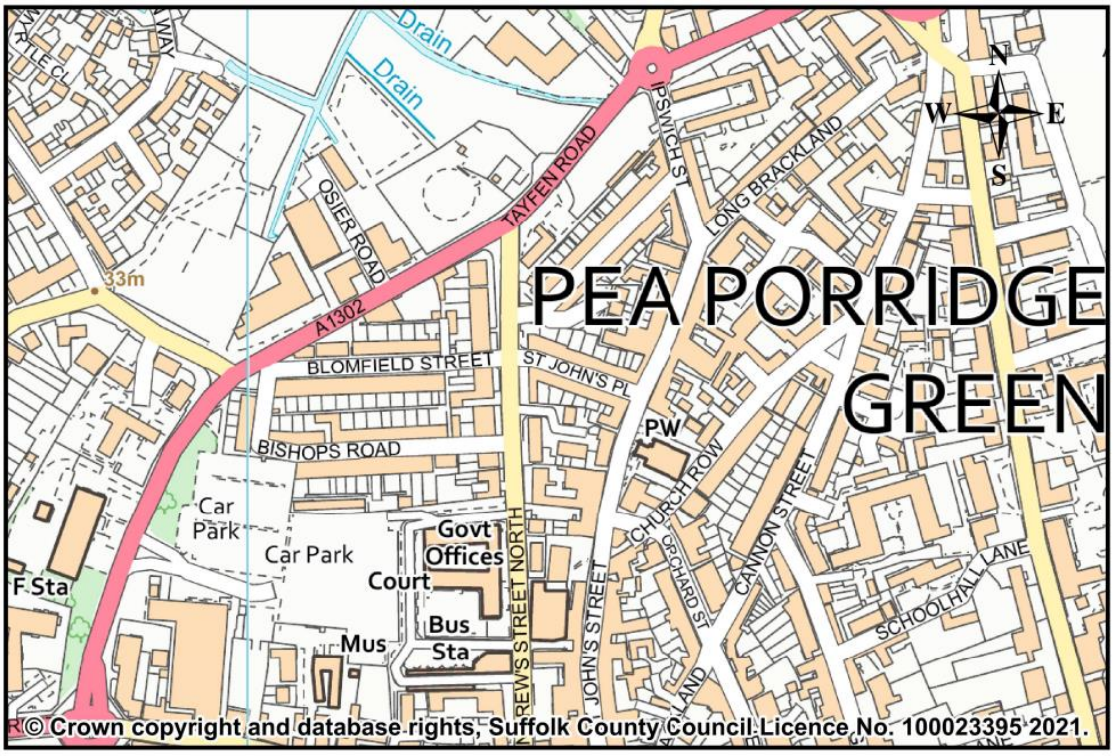

Figure 1 - Investigation area map

2.5 **OS Grid Reference:** TL 85063 64732

2.6 **Extent of flooding:** Internal flooding reported within at least 6 No. adjacent properties during the January / February 2021 period. Although other areas within Bury St Edmunds, including Tayfen Road, Thomas Close, Eastgate Street & Barn Lane also recorded rising groundwater levels/groundwater flooding, they were not in immediate proximity to Blomfield Street.

Only 1 No. property was reported to have been flooded within a basement area during a previous incident in 2006, although it is possible more were impacted but remained unrecorded.

2.7 **Effect of flooding:** Continued ingress of water into below ground structures (basements and cellars) was reported to a depth of approximately 300mm. Some properties had up to 2,500 litres of water pumped out, with one tenant having to be rehoused. Properties affected included those which had previously had water resistant membranes and pumps fitted indicating the volume of water was relatively large and may have overwhelmed the mitigation measures.

Anglian Water manholes were also reported to be surcharging on an adjacent street, Bishops Hill, however it is understood that this is likely to have been related to a separate issue.

2.8 **History:** This location has been recorded to have been flooded on least two separate occasions during the last decade, however historical reports of groundwater flooding associated with this area of Bury St Edmunds date back much further (Reference: Forest Heath & St Edmundsbury Level 1 Strategic Flood Risk Assessment, dated 2009).

2.9 **Source of Flooding & Probable Causes:** Surface water was initially identified as a potential source of flooding however according to the indicative predicted pluvial flood mapping, the properties in question are at low to very low risk from this source. See extract below.

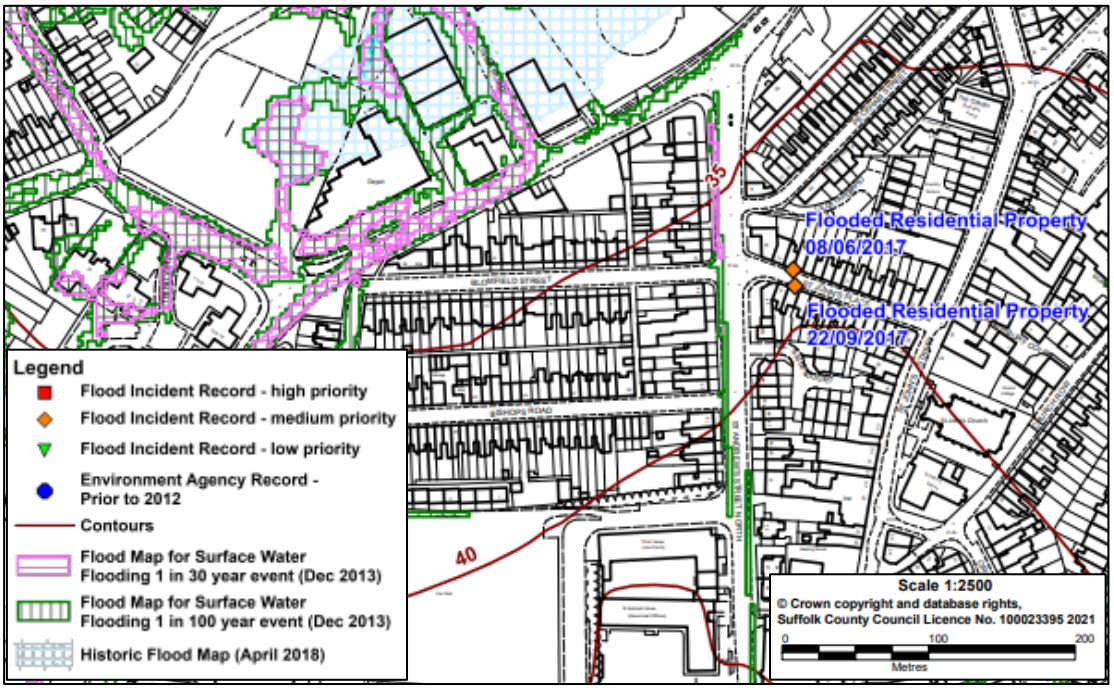

Figure 2 – Pluvial flood mapping

According to the flood risk mapping the area does not seem particularly prone to either fluvial or surface water flooding. There is limited amount of surface water flooding in the road to the south of Blomfield Street in Bishops Road however it is unlikely to accumulate to such a depth that it could result in water ingress into nearby basements.

At least one customer reported that the water accumulated within the basement had been tested positively (29/01/2021) for chemicals associated with potable water including chloride and nitrates. Anglian Water Services (AWS) subsequently carried out an investigation (source ID tests and noise logging) which reported that the water ingress was not a result of water leaking from AWS pipes.

The possibility that the water ingress into the basements was related to sewer flooding was also investigated. AWS confirmed that the sewer was in good order and there was no sign of sewerage escaping the system. The sewer in Blomfield Street was identified as fit for purpose and reported to have no visible defects. The leak reported in Bishops Hill was not investigated as part of these works.

SCC Highways inspected the highway drainage on 19/03/2021 and stated that all were operational. A couple of gullies were noted to be full on arrival, but it was stated that blocked gullies would manifest as surface ponding rather flooded cellars indicating highways drainage has not contributed to the basement flooding. It was also confirmed that previous investigations by AWS have not had a detrimental impact on the highway's drainage.

Groundwater levels are known to be very shallow locally (being less than 1m below ground level within sample locations in the development site to the north) and there could be some natural groundwater recovery following the closure of the gas works (circa. 1960s) to the north which undoubtably would have sourced quantities of groundwater for manufacturing/cooling processes over the decades. This may have artificially lowered the water table which then returns to its former level over time once the works have closed.

Groundwater flood alerts for Bury St Edmunds were issued on 28th January by the Environment Agency. Groundwater levels locally rose by approximately 1.4m in the 7 weeks preceding the flood reports and was between 1.7m and 1.8m higher than the typical winter peak. It is therefore highly probable that groundwater is the source of flooding.

2.10 **Additional Information:** The surface water and foul drainage infrastructure for at least one of the properties is reported to be at the rear. Water meters were checked and reported not to be leaking at the time of the house insurance insepctor's visit (02/02/2021) however the water meter boundary boxes were reported to have been surcharged on 7 of the 9 properties checked. This could be a result of either surface water, groundwater or mains water flooding.

3.0 Risk Management Authority with Relevant Flood Risk Function

Anglian Water Services – Mains/Potable Water Infrastructure (AWS)

Suffolk County Council – Highways Authority (SCC - HA)

Suffolk County Council – Lead Local Flood Authority (SCC - LLFA)

Property Owners/Long Term Tenants

Environment Agency – Groundwater Flood Alerts

4.0 Recommendations:

Action	Responsible Authority	Timescale for response	Latest Progress Update for Actions
Carry out investigation into potable water infrastructure in the highway	AWS	Immediately	Completed Mar 2021 – confirmed AWS potable water not contributing to flooding
Carry out investigation into sewer infrastructure in the highway	AWS	Immediately	Completed Mar 2021 – confirmed AWS sewer water not contributing to flooding
Carry out investigation into highways drainage infrastructure in the highway	SCC - HA	Immediately	Completed Mar 2021 – confirmed SCC HA drainage not contributing to flooding
Property level resilience – consider tanking basements & installing sump pumps	Property Owners	Within 3-6 months, prior to groundwater recharge in Autumn/Winter 2021	
Register to receive groundwater flood alerts to get advance warning and take necessary mitigation action	Property Owners/ Long Term Tenants	Within 3-6 months, prior to groundwater recharge in Autumn/Winter 2021	
Include Blomfield Street within the groundwater flood alert area	Environment Agency	November 2021 (during periodic update to warning system)	EA confirmed the action is on the list of scheduled updates