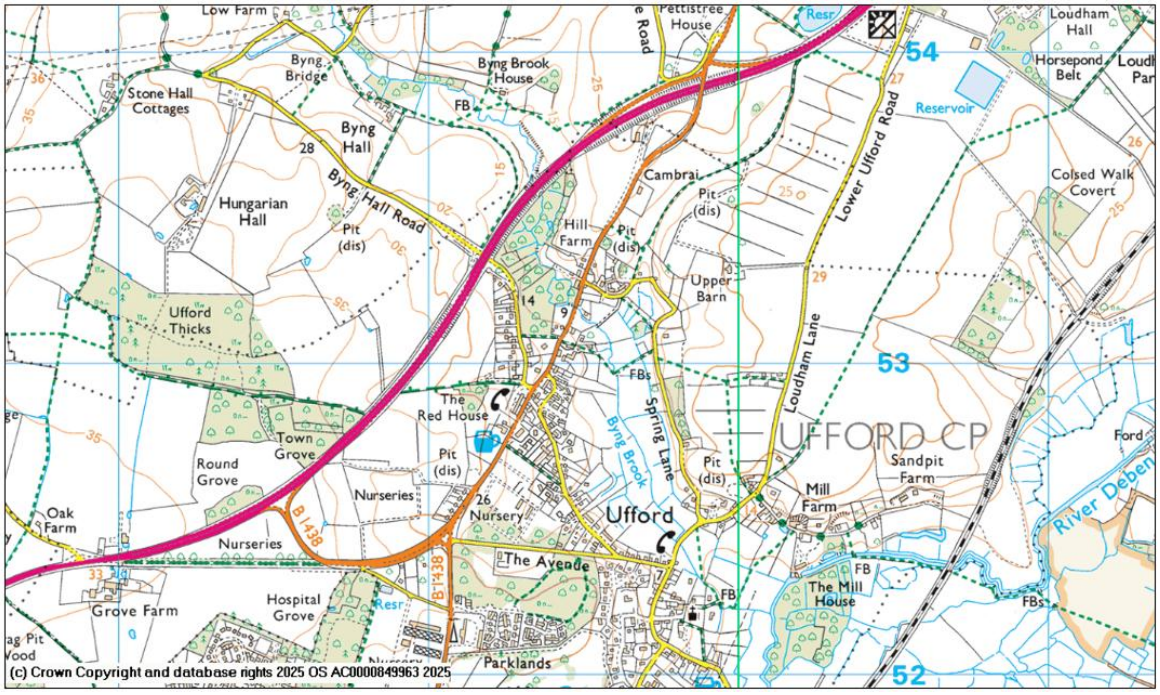
Section 19 Flood and Water Management Act 2010

Ufford Flood Investigation –

Storm Babet 2023



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Executive Summary

Storm Babet caused significant disruption to communities across Suffolk between 18th-21st October 2023. Ufford was a community that was significantly impacted, with 5 properties suffering internal flooding as well as disruption to infrastructure and services. Suffolk County Council, as Lead Local Flood Authority, have therefore undertaken a Section 19 Flood Investigation. The resulting report will:

- highlight the probable causes of flooding
- identify options to reduce future flood risk and increase property resilience
- make recommendations for actions by relevant responsible organisations, landowners or homeowners.

Ufford is located in an area at significant risk of both fluvial (river) and pluvial (surface water) flooding and the nature of the surrounding topography and geology contributes to the susceptibility of the community to flooding. Ufford is situated in a relatively flat and low-lying area. There are a few flow paths flowing into Ufford from the higher ground from the west of the village, before converging in the village where the gradient is noticeably shallower. The local geology and soils are characterised as having low permeability and high run off, making a number of properties in Ufford vulnerable to flooding due to intense rainfall events.

Storm Babet delivered significant rainfall to the catchment, following an extended period of above average rainfall. There was one main area in Ufford affected by internal flooding, and this can be considered a single distinct zone. The description of the flood events detailed in the report have been compiled using data submitted to Suffolk County Council, as well as information from Risk Management Authorities (e.g. Suffolk County Council Highways and the Environment Agency) and the community.

A comprehensive summary of the impacted location is provided within the report, outlining the context of the event and the impact. Key findings are that Ufford was severely impacted by flooding due to the intensity of rainfall, that overwhelmed the natural flow routes and the capacity of watercourses and drainage infrastructure. This situation was compounded when overland flow paths converged and saw the resultant internal flooding of property.

Short, medium and longer term recommendations have been published and each have a potential role to improve resilience and reduce the risk of flooding to Ufford. For short term measures, key highlights include the implementation of community flood plans, maximising Property Flood Resilience (PFR) grants, removal of blockages within watercourses, as well as investigations into local drainage infrastructure. For medium to longer term recommendations, there is emphasis on management of water from rural land and the creation of new natural flood management features, to reduce flood risk within the catchment.

Justification for Investigation

Suffolk County Council, Lead Local Flood Authority (LLFA) has determined that in accordance with our criteria, it is considered necessary and appropriate to carry out an investigation into this flood event.

This is 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).

Section 19 Local authorities: investigations

(1) 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.*

(2) 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*

Criteria for an investigation (as per Appendix D of the Suffolk Flood Risk Management Strategy):	
There was a risk to life because 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 because of flooding	
Critical infrastructure was affected by flooding	
There is ambiguity surrounding the source or responsibility of a flood incident	

Understanding the flood context

1. What happened during Storm Babet

A succession of weather fronts between the 11th and 13th of October 2023 brought significant rainfall to the region. Readings indicate that between 30mm and 50mm of rain fell across Suffolk compared with an average of just less than 65mm across the whole month of October according to Met Office weather data (Met Office, 1991-2020). This significant rainfall occurred in a short space of time and resulted in saturated land and rivers reaching their capacity. Shortly after this, Storm Babet followed on the 18th to 21st of October 2023. The storm brought between 50 mm and 80 mm of rain to much of central and northern East Anglia, with some Suffolk weather stations recording the wettest October day on record.

The Environment Agency river level measuring stations indicated many flows close to or exceeding their highest on record, and the weather remained wetter than average for the rest of the month. October 2023 was the joint wettest on record in the east of England since 1871. During Storm Babet, Suffolk saw the heaviest rainfall across East Anglia causing significant flooding of roads and properties. The river systems rose rapidly across whole catchments due to the existing conditions, which was unusual as storms will often impact a small area and result in a steady progression of flood water downstream. A major incident was declared by the Suffolk Resilience Forum (SRF) in the afternoon of the 20th of October due to significant impacts on communities and disruption to the road and rail networks.

The following maps illustrate the extent to which the rainfall in the months preceding Storm Babet exceeded the average monthly rainfall for July to October in recent years in Suffolk.

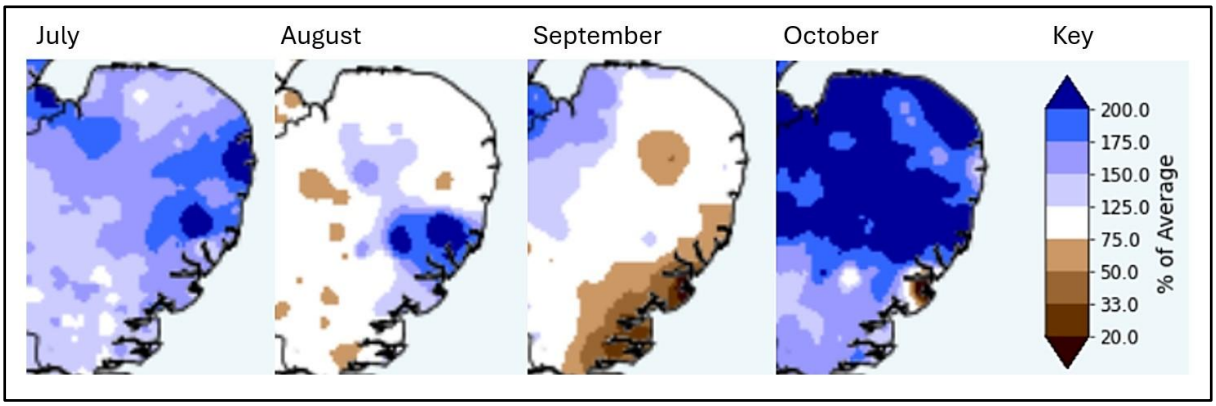

Figure 1 - Average rainfall in East Anglia between July and October 2023 as a percentage of the historical average monthly rainfall

The following report acknowledges that October 2023, and in particular Storm Babet, was an extreme event and will assess the likely causes and impacts. The report will recommend measures to reduce the risk of flooding within the location, in line with best practice, ranging from large to small scale interventions and be targeted at a range of stakeholders. It should be noted that Storm Babet was a significant event, with a low probability of recurrence. The recommendations will provide advice about reducing flood risk; however, they should not be relied upon as a guaranteed failsafe to mitigate against all future flooding

2. Location of flooding

Ufford is a village and parish situated in the Byng Brook catchment. It is located approximately three miles north of the market town of Woodbridge and is in the local authority district of East Suffolk.

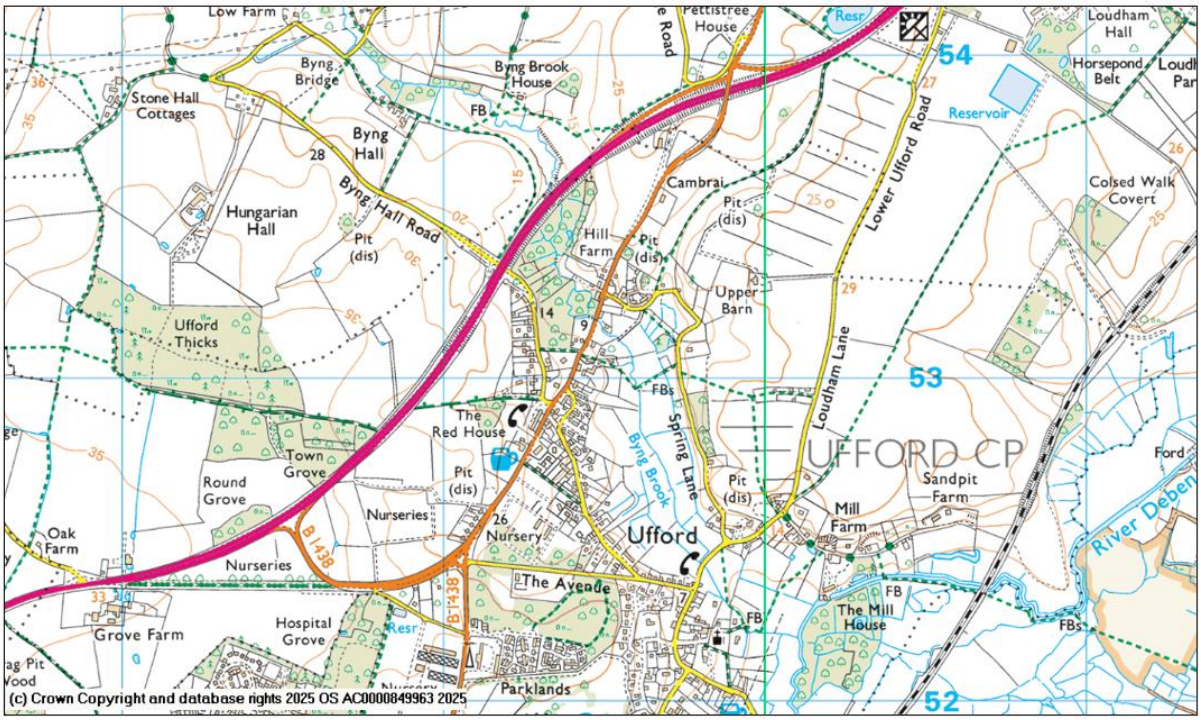

Figure 2. Investigation area map

Figure. 3 below, shows the most significant watercourses (designated main river) in and around Ufford. Byng Brook is an ordinary watercourse and flows north west to south east through the village before merging with the River Deben.

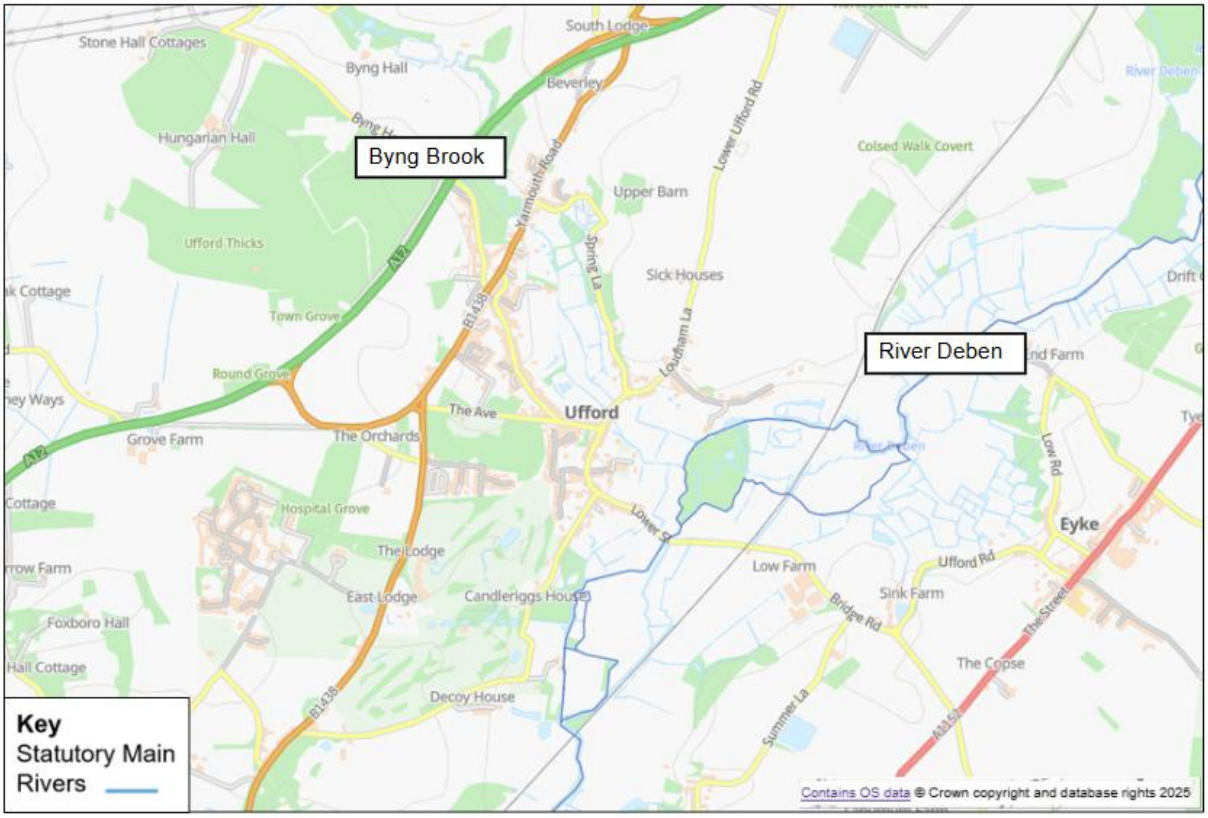

Figure 3. Location of statutory main river and ordinary watercourses

The Environment Agency has permissive powers to carry out maintenance, improvement or construction work on main rivers to manage flood risk. The Internal Drainage Boards (IDBs) have similar permissive powers but instead relate to ordinary watercourses within their board area. Lead Local Flood Authorities (LLFAs) and Internal Drainage Boards (IDBs) manage the flood risk from ordinary watercourses but responsibility for maintaining watercourses rests with the Riparian landowner, defined as those who have a river, stream or ditch which runs next to or through their land or property.

The East Suffolk Water Management Board (ESWMB) manages flood risk for the ordinary watercourses flowing into the River Deben in the area shown in Fig.4. Byng Brook is an IDB designated arterial watercourse (Lower Priority). The Brook remains with private landowners, but ESWMB oversees its condition. ESWMB is proactive towards regulating any development within the 9 metre Byelaw distance of the edge of Byng Brook.

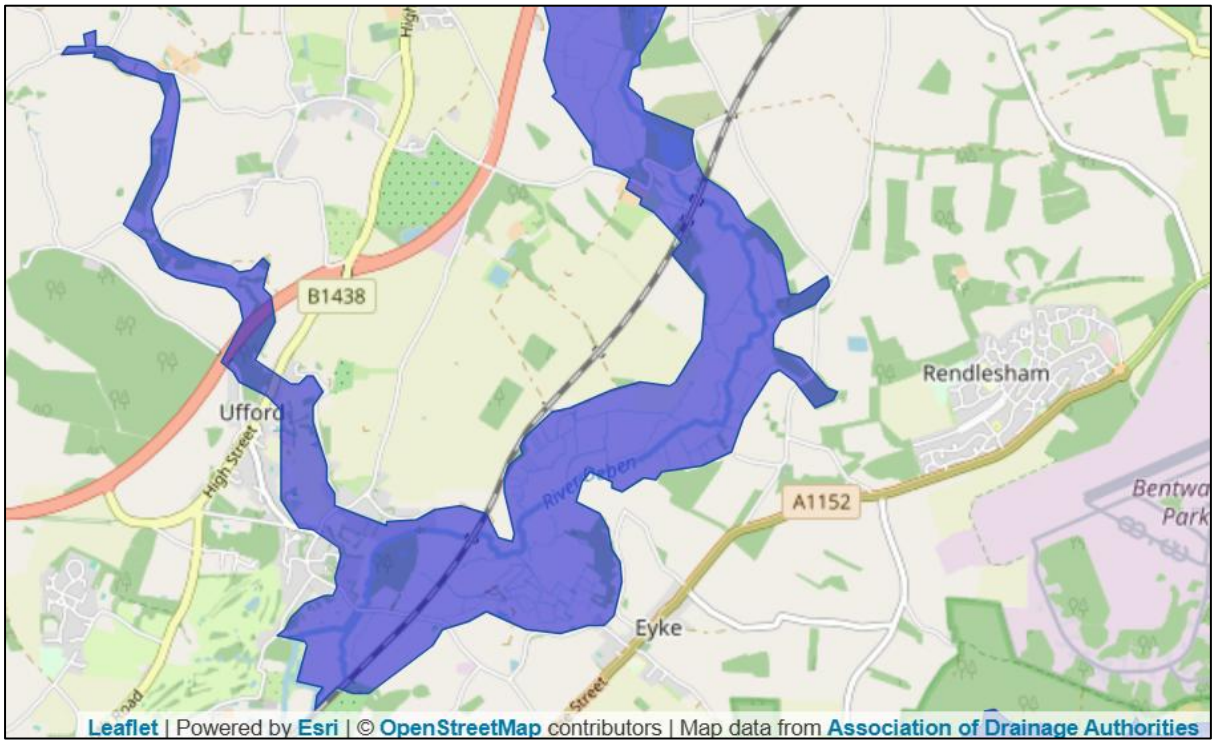

Figure 4 - Area of East Suffolk Water Management Board responsibility for flood risk in ordinary watercourses

On the 20th of October 2023, Storm Babet resulted in significant rainfall in Suffolk on top of an already wetter than average October. This caused internal flooding to properties, residential and commercial, across the county from various flooding sources. Ufford was impacted with approximately 5 properties reporting internal flooding. Flood water was described as coming from multiple sources including surface water runoff from surrounding fields and land (pluvial) and the overtopping of local watercourses (fluvial), both of which contributed to the overwhelming of drainage system. Within this report, the term 'flood water' may be used to describe all types of flooding.

Given the extreme rainfall and low-lying topography of the village, there was extensive flooding in various areas of the village, with many reports of gardens and sheds being impacting by flood water. For the purposes of this investigation the area affected by internal flooding was in one central location (see Figure 5). The location is as follows:

1. High Street

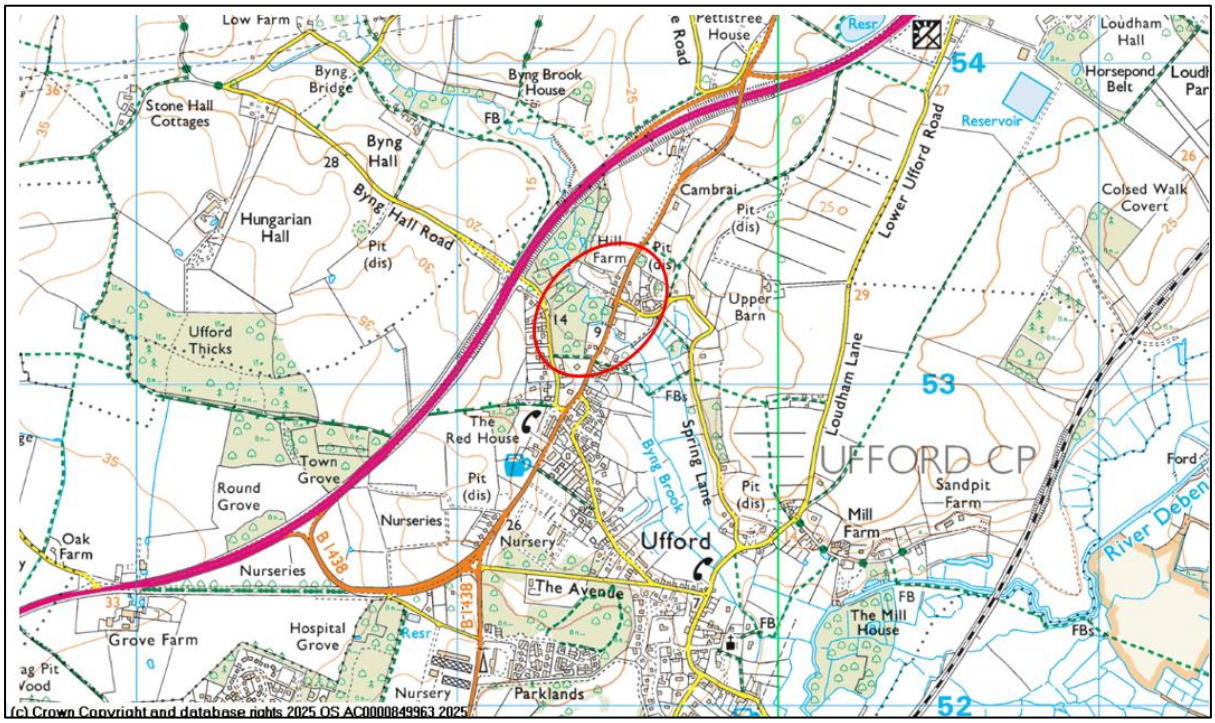

Figure 5 - Ufford investigation area map with locations

2. Records of any historical flooding

The Environment Agency hold one historical record of flooding in Ufford for 1st-4th February 1979. Source of flooding is noted at rainfall/snowmelt but no information is held on properties or specific areas flooded.

In February 2021, the East Suffolk Water Management Board (ESWMB) received a report about surface water flooding the road at Barrack Lane, Ufford, when the water meadows between Spring Land and School Lane were at exceedance capacity.

No historical records of flooding in Ufford are held by Suffolk County Council.

3. Predicted Flood Risk

Several areas of Ufford are at risk of flooding from pluvial and fluvial sources.

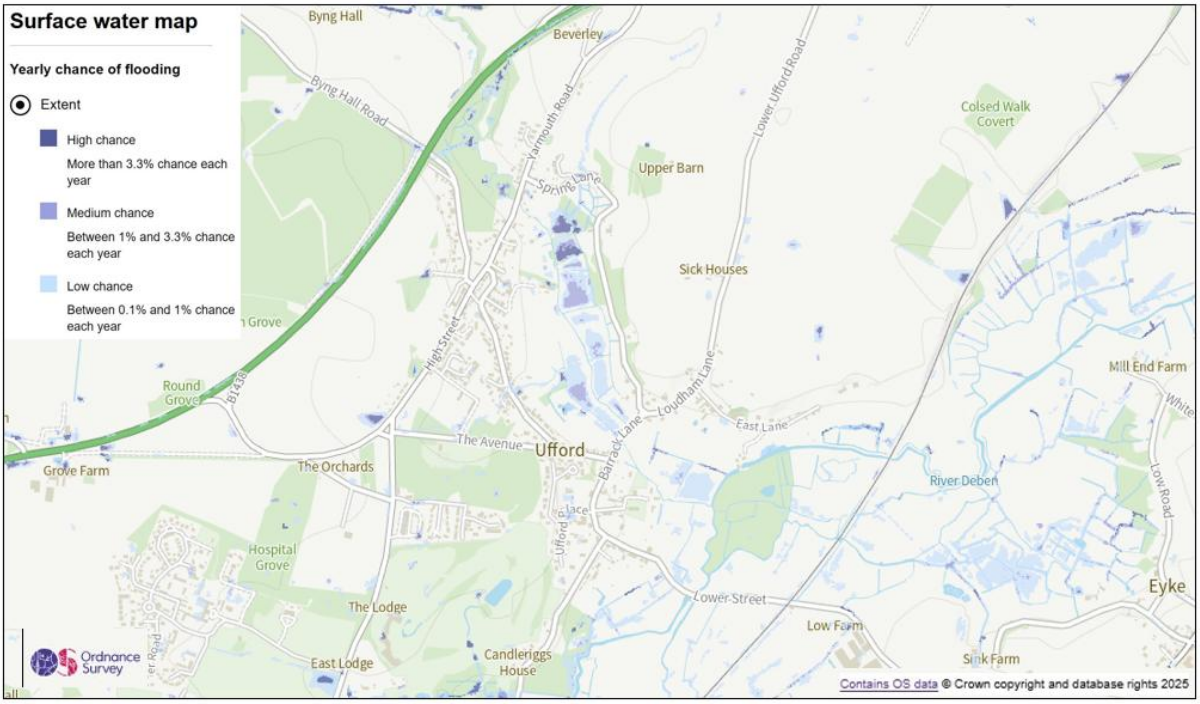

Figure 6 - Surface water flood risk

Figure 6 highlights the predicted pluvial (surface water run-off from surrounding land) flood risk in Ufford, with several isolated locations predicted being at risk.

There is a medium to high risk of surface water flooding on the land between Yarmouth Road/High Street and Spring Lane, with reports of flooding affecting properties whose gardens back onto this area.

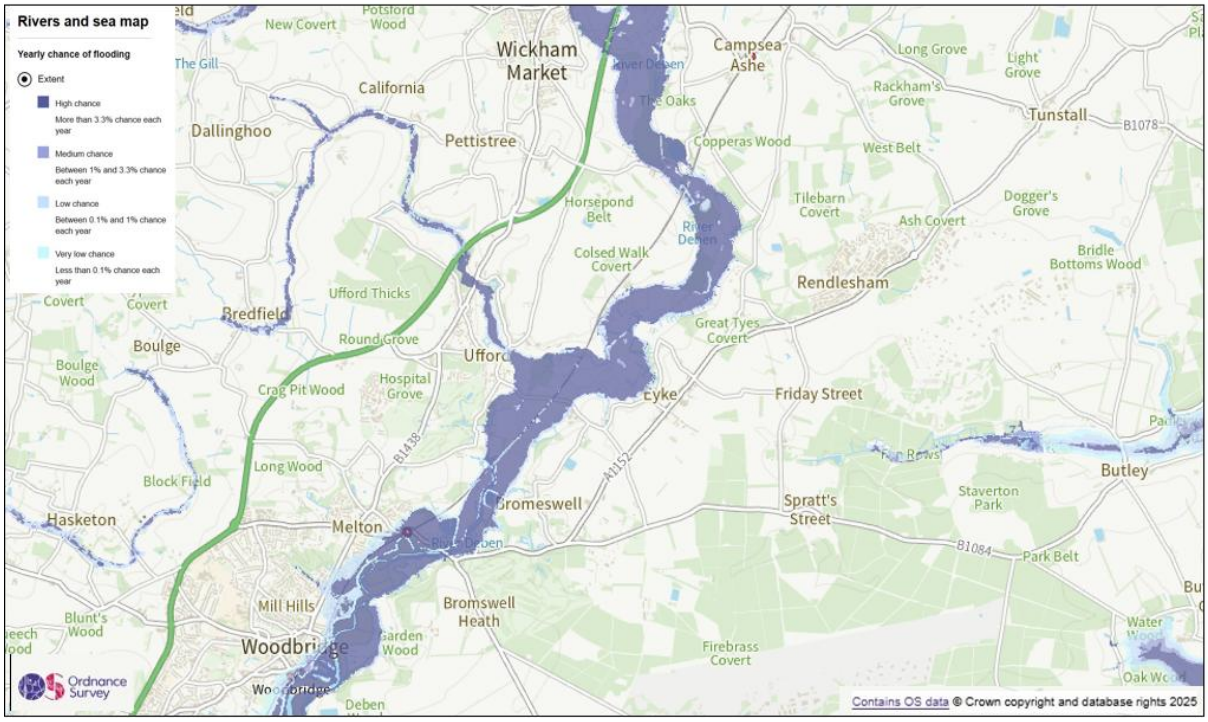

Figure 7 - Flood risk from rivers and sea

Figure 7 shows the predicted fluvial (from designated main river and ordinary watercourses) flood risk in Ufford. The fluvial flood risk in Ufford is predominantly associated with the tributary Byng Brook, which flows north east to south west into the village before merging with the River Deben.

There is a high chance of fluvial flooding on High Street, this area was affected by flooding during Storm Babet.

4. Catchment characteristics

The village of Ufford is situated in the Byng Valley. The village is surrounded by higher ground to the west. Figure 7 shows the topography surrounding Ufford with gradient changes across the wider region. The village of Ufford is situated in a relatively flat and low-lying area, with some of the lowest points being along High Steet, School Lane and Lower Street. These locations were identified as being some of the worst affected areas during Storm Babet.

The low-lying nature of Ufford means that during high rainfall events, considerable overland flow paths converge upstream and flow through Ufford bringing floodwater within close proximity to properties. Overwhelmed drainage infrastructure may frequently be observed during these intense rainfall events.

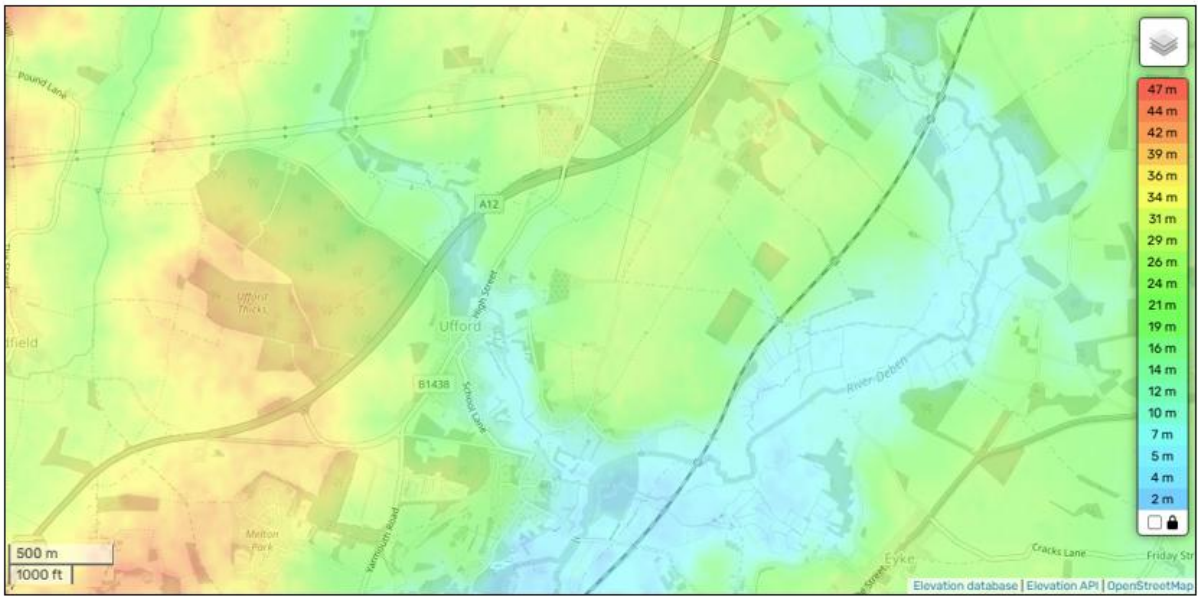

Figure 8 - Ufford and surrounding topography (TessaDEM as cited in topographic-map.com)

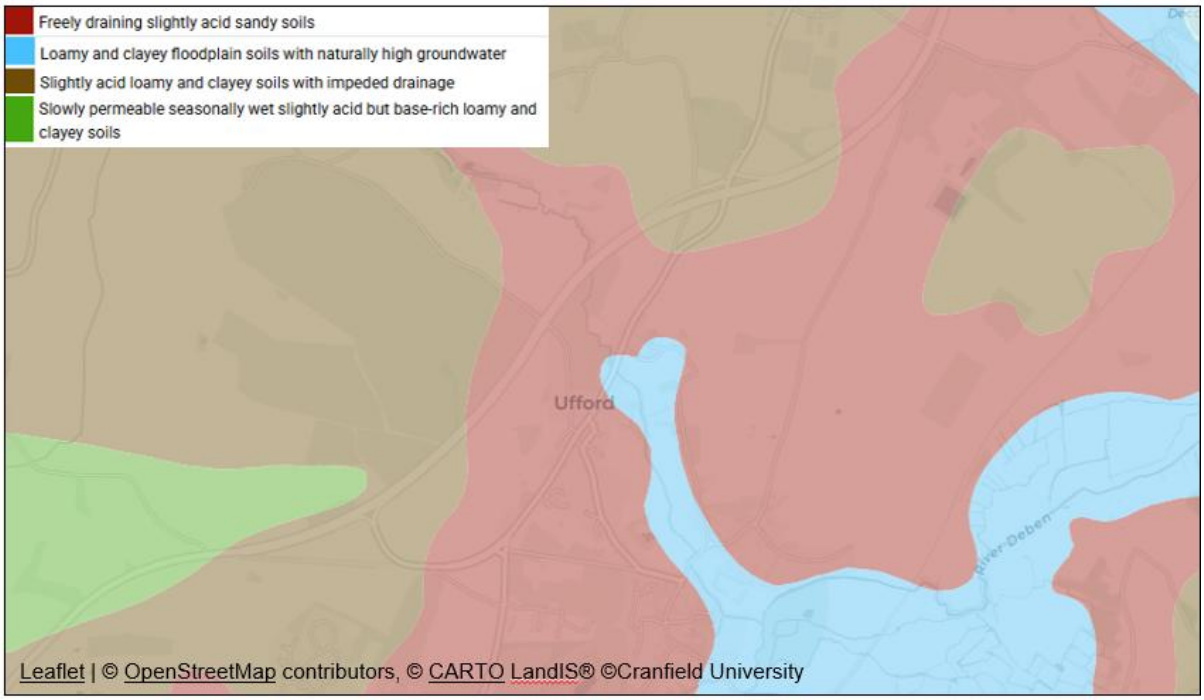

Figure 9 - Soil map (LandIS Soilscapes)

The soils of the upper catchment surrounding Ufford are loamy and clayey with impeded drainage, meaning that water permeates more slowly and surface water runoff is greater. The floodplain and sandy soils surrounding the village and the river Deben are more freely draining but have naturally high groundwater so can often retain water.

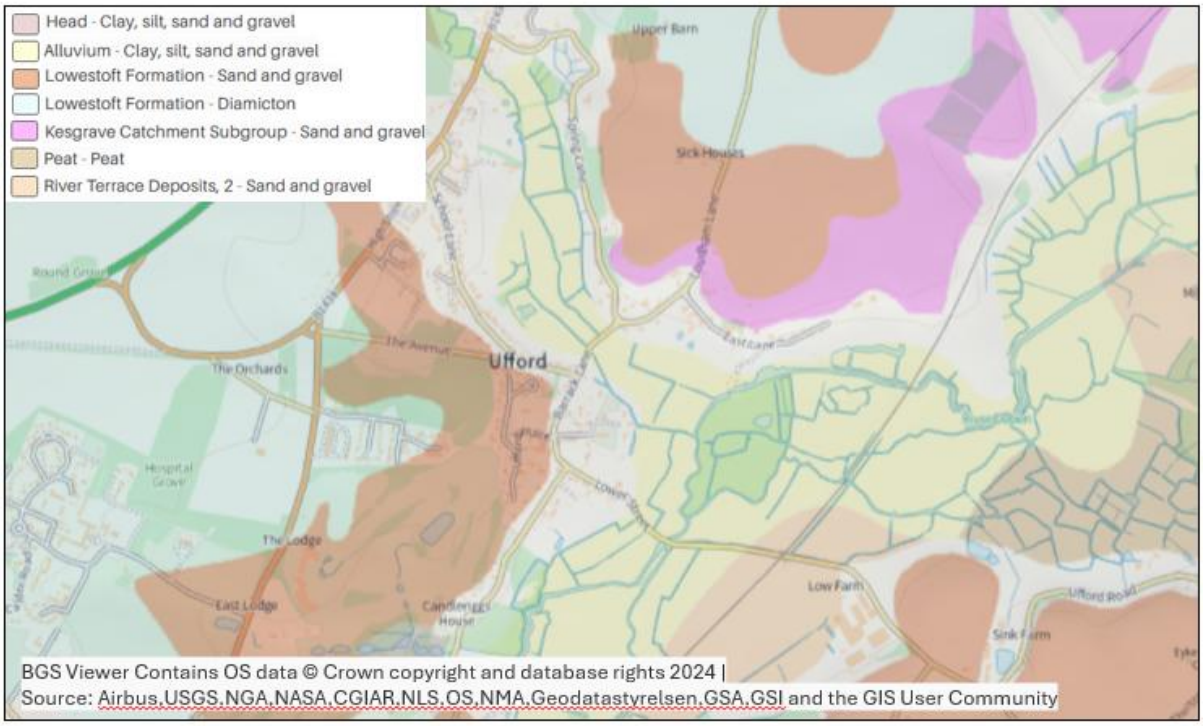

Figure 10 - Superficial Geology (BGS Viewer)

Lowestoft Formation ‘Diamicton’ surrounds Ufford which is described by the British geological survey as a diverse mixture of clay, sand, gravel, and boulders varying widely in size and shape. This generally has a low permeability, meaning water will tend to flow off it before it can be infiltrated. Alluvium which is classed as clay, silt, sand and gravel, in addition to clay and silt from tidal deposit, line the bed of the Byng Brook and river Deben.

The low-lying nature of Ufford, combined with watercourses feeding into the River Deben and the low permeability of surrounding soils, makes the area particularly vulnerable to flooding during extreme rainfall events.

Flooding Source(s), Pathway(s) & Receptor(s)

Storm Babet was an extreme event which came at a time when Suffolk had experienced a significant amount of rainfall in the preceding week.

Storm Babet delivered significant rainfall in the catchment between 19 and 20 October. Data from the nearest rainfall gauge at Woodbridge, recorded 50.77mm of rainfall on 20th October.

The Environment Agency issue two types of warning when flooding is possible from a main river. These are:

1. Flood Alert – Flooding is possible. Be prepared. - usually issued between 2 and 12 hours before flooding.
2. Flood Warning - Flooding is expected. Immediate action required – usually issued 30 minutes to 2 hours before flooding.

The main River Deben and the Byng Brook tributary are both within the Flood Alert area for the Rivers Deben and Lark. This Flood Alert was issued on 18th October 2023 at 22:12pm and remained in force until it was removed on 24th October 2023.

There is no Flood Warning area covering the properties in Ufford affected by flooding from the Byng Brook.

The description of the flood events described below will discuss the probable sources of flooding, the observed flow paths through the community and the receptors which have been affected. The term 'floodwater' may be used to describe both fluvial (water from a watercourse) and pluvial (surface water run-off) flooding. This section has been prepared using reports submitted to Suffolk County Council via the online Highways Reporting Tool and information gathered by Risk Management Authorities (RMAs) and the community.

Detailed descriptions of each investigation area can be found in the following section.

1. High Street

Five properties were reported to have internally flooded in this location, with the primary source being fluvial flooding. Following heavy rainfall on the morning of 20 October, high water levels flowed through the catchment towards Ufford.

It was reported that the Byng Brook overtopped, flowing towards properties via the highway and gardens, surrounding properties, with flood water entering via the front and back. Debris carried by the flood water was reported to become lodged underneath Ufford bridge, causing water to back up quickly.

The watercourse quickly overtopped, and flood water flowed overland towards properties. The highway was submerged with water from the overtopped watercourse as well as surface water travelling along the road. Flood water from the watercourse

and highway merged, with flood depths reported to have reached over 4 inches. There were reports of the floodwater rising to approximately six feet, flowing across the garden before merging with water from the highway and surrounding the properties. The affected properties were situated lower than the highway, resulting in floodwater flowing down driveways towards properties.

Properties to the east of High Road also reported their gardens being flooded by pluvial flooding, from channels that drain surface water to the meadows behind.

Most of the highway drainage assets in this area were recorded as being operational, with a couple noted as being slow running and one being non-operational prior to Storm Babet.

During Storm Babet the existing highway drainage assets on High Street were overwhelmed by the sheer amount of floodwater. The gullies would have been unable to drain away due to the outfall being submerged in the watercourse. It should be noted that in the extreme rainfall conditions, the design capacity of the wider drainage system would have been exceeded, even if fully functioning.

The floodwater flow paths observed on High Street during Storm Babet closely match the national fluvial flood risk mapping (see Figure 11).

In Summary:

- Internal flooding on the High Street was caused by the Byng Brook overtopping and flowing directly across gardens, the highway, entering driveways and into properties.
- Reports of debris being caught under the bridge restricted the structures capacity and impacted the flow of water.
- Drainage assets on High Street were overwhelmed.

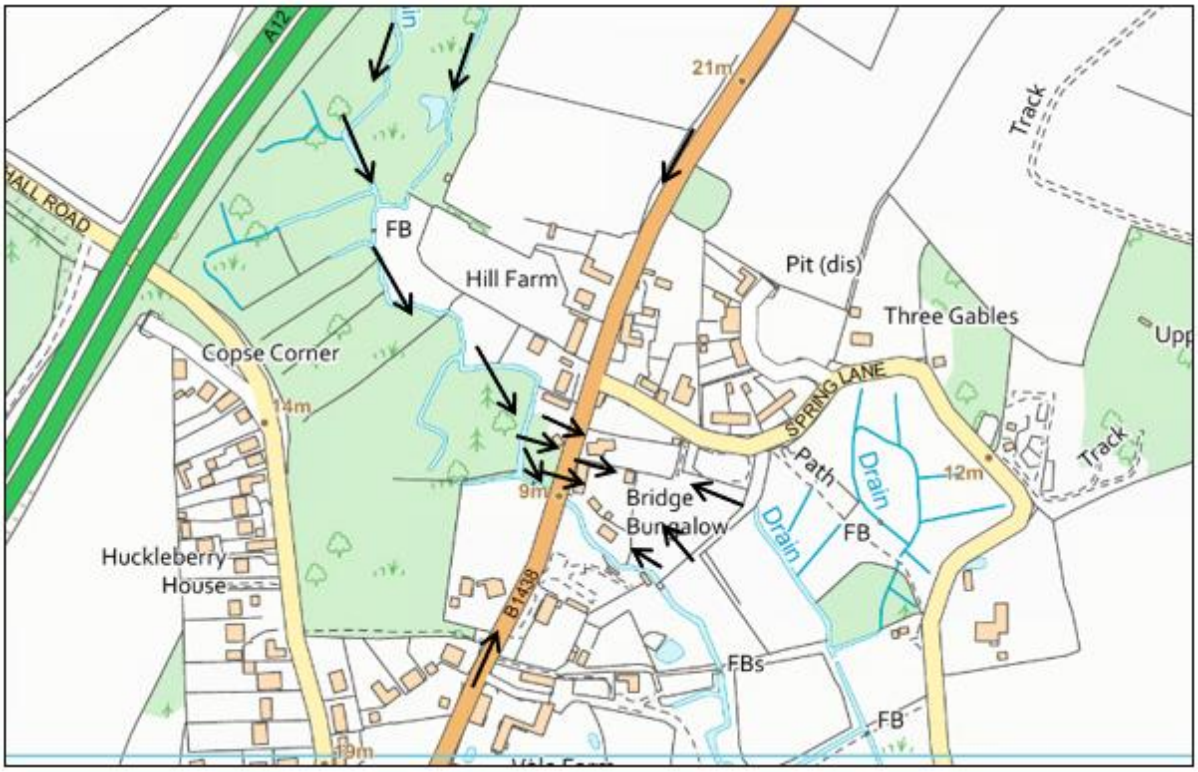

Figure 11 - Approximate flood water flow routes along High Road

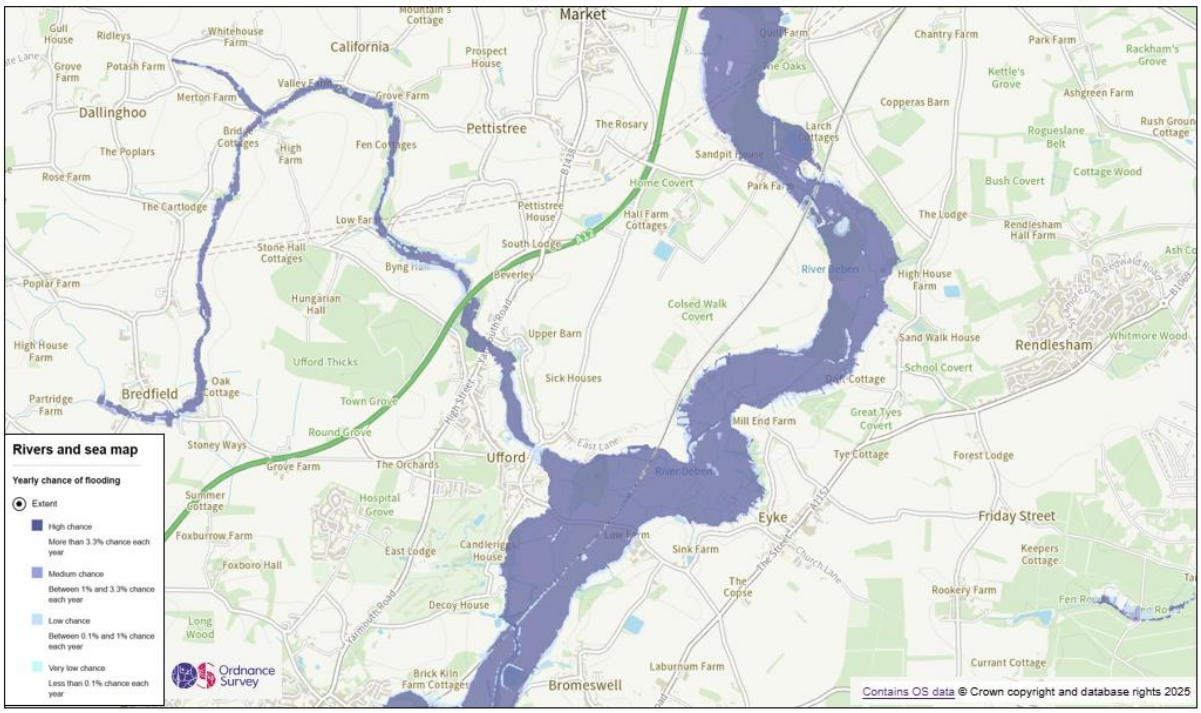

Figure 12 - Fluvial flood risk on High Street

LLFA recommended action(s):

- Residents to install Property Flood Resilience (PFR).
- Riparian landowners to carry out appropriate watercourse maintenance to reduce flood risk as necessary as per their riparian responsibilities. This includes ensuring any structures or items are fixed to ensure they remain stable in times of flooding
- Explore potential natural flood management measures (eg. leaky dams, attenuation ponds, floodplain reconnection) to “slow the flow” and attenuate water upstream in the Byng Brook catchment.
- Suffolk Highways to ensure the completion of highway drainage asset cyclic maintenance on High Street.
- Suffolk Highways to investigate non-operational asset on High Street and repair as necessary.
- Residents to report any observed blockages below Ufford road bridge on the Suffolk Highways Online Reporting Tool.
- For the Parish Council to Investigate opportunities to update development plan policy in Neighbourhood Plans or any potential Joint Local Plan site allocation(s) which identify risks and opportunities to mitigate flood risk issues as development comes forward.

Risk Management Authorities, Non Risk Management Authority and flood risk function(s)

The following section acknowledges both RMA's and Non-RMA's relevant to the location and provide an overview of their flood risk functions. The table has been compiled from information collated as part of the investigation. It is not exhaustive and it should be acknowledged additional organisations and groups may be active within the community.

Risk Management Authority	**Relevant Flood Risk Function(s)**
Suffolk County Council	Lead local Flood Authority (LLFA), Highways Authority & Asset Owner
The Environment Agency (EA)	Lead organisation for providing flood risk management under its permissive powers and issuing warnings of flooding from main river
Anglian Water	Asset owner supplying water and water recycling services
Internal Drainage Board (IDB) Supervising land drainage and flood	Internal Drainage Board (IDB) Supervising land drainage and flood
East Suffolk District Council	Local Planning Authority (LPA) & Asset Owner
Non-Risk Management Authority	**Relevant Flood Risk Function(s)**
Private Landowners	Riparian responsibilities and management of water from land or watercourses
Private Homeowners	Improving flood resilience to property and some riparian responsibilities if adjacent to watercourses.
Ufford Parish Council	Manage flood risk at a community level, prepare and produce flood action plans and maintain watercourses where present on land they own

Action(s) completed prior to publication:

The following section acknowledges actions that RMA's and Non-RMAs have implemented or are currently in progress since Storm Babet and prior to publishing of this report.

Action	Risk Management Authority	Progress
Offer of Property Flood Resilience (PFR) measures to the properties that flooded during Storms Babet.	Suffolk County Council Lead Local Flood Authority	Application window now closed. Installation of PFR measures on approved applications has been extended to December 2025.
Ensure riparian landowner responsibilities are understood with regard to watercourse management.	Suffolk County Council Lead Local Flood Authority	SCC published "Flood Smart Living" online and hard copy guide to increasing flood resilience for residents, landowners and communities, December 2024.
Understand the annual event probability of the rainfall & river flow across the region.	The Environment Agency (EA)	Complete. Details of the report can be found on the SCC website or at the following https://www.suffolk.gov.uk/roads-and-transport/flooding-and-drainage/storm-babet

LLFA Recommended Action(s):

The following section provides a range of flood mitigation measures that could be implemented to reduce the risk of flooding in Ufford. They have been derived from data and evidence collated as part of the report and have been included having been considered realistic in their implementation. The implementation of actions falls to the responsible party. Progress on the action will be monitored by Suffolk County Council, but it should be acknowledged that the council has limited powers to enforce the implementation of recommended actions.

Action	Responsible Party	Timescale for response	Latest Progress Update for Actions (May 2026)
Short Term Actions (e.g. standard maintenance activity and initial investigation of options that can be undertaken with limited need for forward planning)			
Establish a Community Emergency Plan that includes plans to manage future flood events – Liaison with Suffolk Joint Emergency Planning Unit.	Ufford Parish Council	6 months	**Complete**
Residents to consider installing Property Flood Resilience (PFR) measures to property to reduce damage caused by flooding.	SCC LLFA / Residents	N/A	DEFRA PFR Grant has now closed for new applications. Installation of PFR measures on approved applications has been extended to December 2025. Further information on PFR measures can be found within SCC published "Flood Smart Living" handbook. There is currently no active PFR schemes being managed by the LLFA in Suffolk.
Riparian landowners to carry out appropriate watercourse maintenance to reduce flood risk as necessary as	Riparian landowners	N/A	Further information on Riparian Ownership can be found within SCC published "Flood Smart Living" handbook.

per their riparian responsibilities (See Appendix A).			
Investigate utilising the Community Self Help scheme to be able to set out flood warning signage on the highway.	Ufford Parish Council / Suffolk Highways	6 -12 months	Further information can be found at the following https://www.suffolk.gov.uk/roads-and-transport/highway-maintenance/community-self-help-scheme
Suffolk Highways to ensure the completion of highway drainage asset cyclic maintenance on High Street and Yarmouth Road.	Suffolk Highways	Annually	**Ongoing** Routine cleansing of the gullies will be completed in line with the set cycles (annual or biennial).
Suffolk Highways to investigate the non-operational asset on High Road (ID 60287425)	Suffolk Highways	6 months	Complete - Jetting carried out. Root cutting by specialist confined spaces entry team was required. This was completed February 2026. There was a significant amount of root and there will be regrowth. More invasive work will be required for the longer term.
Medium Term Actions (e.g. longer planning timescales and potential need to source funding but potential for greater impact)			
Explore potential NFM measures which aim to attenuate water and 'slow the flow' on overland flow paths upper catchment of Byng Brook e.g. storage ponds, wetland areas, leaky dams, woody debris installation and	Landowners, supported by relevant authority, resource dependant (SCC LLFA, EA)	12 - 24 months	No update expected at this time.

restoration of watercourses.			
Investigate opportunities to update development plan policy in Neighbourhood Plans or any potential Joint Local Plan site allocation(s) which identify risks and opportunities to mitigate flood risk issues as development comes forward.	Local Planning Authority, SCC LLFA	12 months+	No update expected at this time.
Deliver improvements to highway drainage asset if investigation works suggest it is beneficial and viable.	Suffolk Highways	12 - 24 months	No update expected at this time.
Long Term actions (significantly longer timescale and budget required with potentially greater positive impact)			
Installation of NFM features within upper catchments to attenuate and slow flood water if investigation works suggest it is viable.	Landowners, supported by relevant authority, resource dependant (SCC LLFA, EA)	TBC	No update expected at this time.
Deliver any capital interventions that are economically, technically and environmentally feasible and acceptable to improve flood resilience	Landowners, supported by relevant authority, resource dependant (SCC LLFA, EA)	TBC	No update expected at this time.

Approval

This report will be reviewed and updated every 6 months until actions are marked as complete.

Reviewer	Date of Review
Ellie Coleby	17/07/2026

Disclaimer

This report has been prepared and published as part of Suffolk County Council's responsibilities under Section 19 of the Flood and Water Management Act 2010. It is intended to provide context and information to support the delivery of the local flood risk management strategy and should not be used for any other purpose.

The findings of the report are based on a subjective assessment of the information available by those undertaking the investigation and therefore while all reasonable efforts have been made to gather and verify such information may not include all relevant information. As such it should not be considered as a definitive assessment of all factors that may have triggered or contributed to the flood event. Should there be additional information available to develop the report, please email to floodinvestigations@suffolk.gov.uk

The opinions, conclusions and recommendations in this Report are based on assumptions made by Suffolk County Council when preparing this report, including, but not limited to those key assumptions noted in the Report, including reliance on information provided by third parties.

Suffolk County Council expressly disclaims responsibility for any error in, or omission from, this report arising from or in connection with any of the assumptions being incorrect.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the time of preparation and Suffolk County Council expressly disclaims responsibility for any error in, or omission from this report arising from or in connection with those opinions, conclusions, and any recommendations.

The implications for producing Flood Investigation Reports and any consequences of blight have been considered. The process of gaining insurance for a property and/or purchasing/selling a property and any flooding issues identified are considered a separate and legally binding process placed upon property owners and this is independent of and does not relate to Suffolk County Council highlighting flooding to properties at a street level. Property owners and prospective purchasers or occupiers of property are advised to seek and rely on their own surveys and reports regarding any specific risk to any identified area of land.

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Appendix A – Indicative locations for NFM and watercourse maintenance