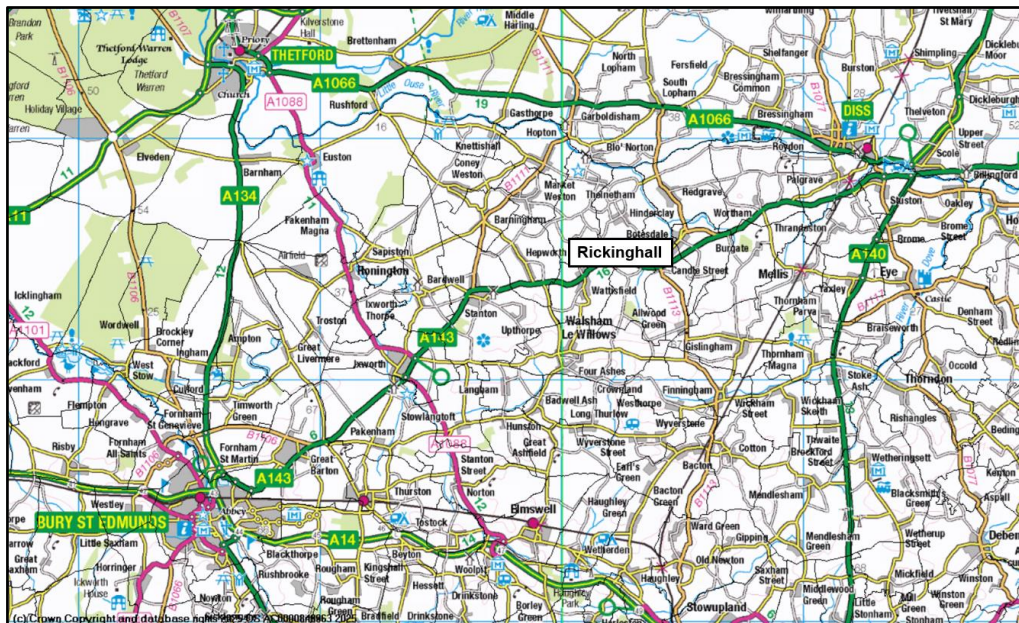


## Section 19 Flood and Water Management Act 2010

### Rickinghall Flood Investigation – Storm Babet 2023



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## Executive Summary

Storm Babet caused significant disruption to communities across Suffolk between 18<sup>th</sup> - 21<sup>st</sup> October 2023. Rickingham was a community that was significantly impacted, with approximately eleven 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.

Rickingham is located in an area at significant risk of pluvial flooding and the nature of the surrounding topography and geology contributes to the susceptibility of the community to flooding. Rickingham is a rural catchment with low-lying areas where multiple flood water flow paths converge. Some areas of the local geology and soils are susceptible to high run off, making a high number of properties in the village vulnerable to flooding due to intense rainfall events.

Storm Babet delivered significant rainfall to the catchment, following an extended period of above average rainfall. Impacts within Rickingham were widespread and for the purposes of this report, the affected areas have been categorised into four zones. 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 Anglian Water) and the community.

A comprehensive summary for each zone is provided within the report, outlining the context of the event and the impact. Key findings are that Rickingham 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 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 Rickingham. For short term measures, key highlights include the implementation of community flood plans, maximising Property Flood Resilience (PFR) measures, and maintenance of watercourses. For medium to longer term recommendations, there is emphasis on the management of water from rural land through 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*

<b>Criteria for an investigation (as per Appendix D of the Suffolk Flood Risk Management Strategy):</b>	
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	

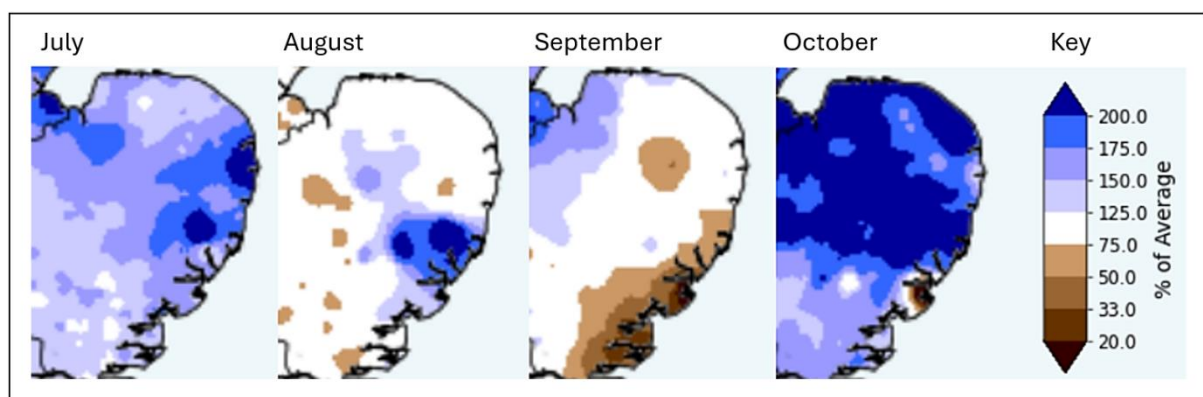
# Understanding the flood context

## 1. What happened during Storm Babet

A succession of weather fronts between the 11<sup>th</sup> and 13<sup>th</sup> 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 Meteorological Office weather data (Met Office, 1991- 2020). This significant rainfall in a short space of time resulted in saturated land and rivers reaching their capacity. Shortly after this, Storm Babet followed on the 18<sup>th</sup> to 21<sup>st</sup> 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 gauging 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 Suffolk Resilience Forum (SRF) in the afternoon of the 20<sup>th</sup> 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.



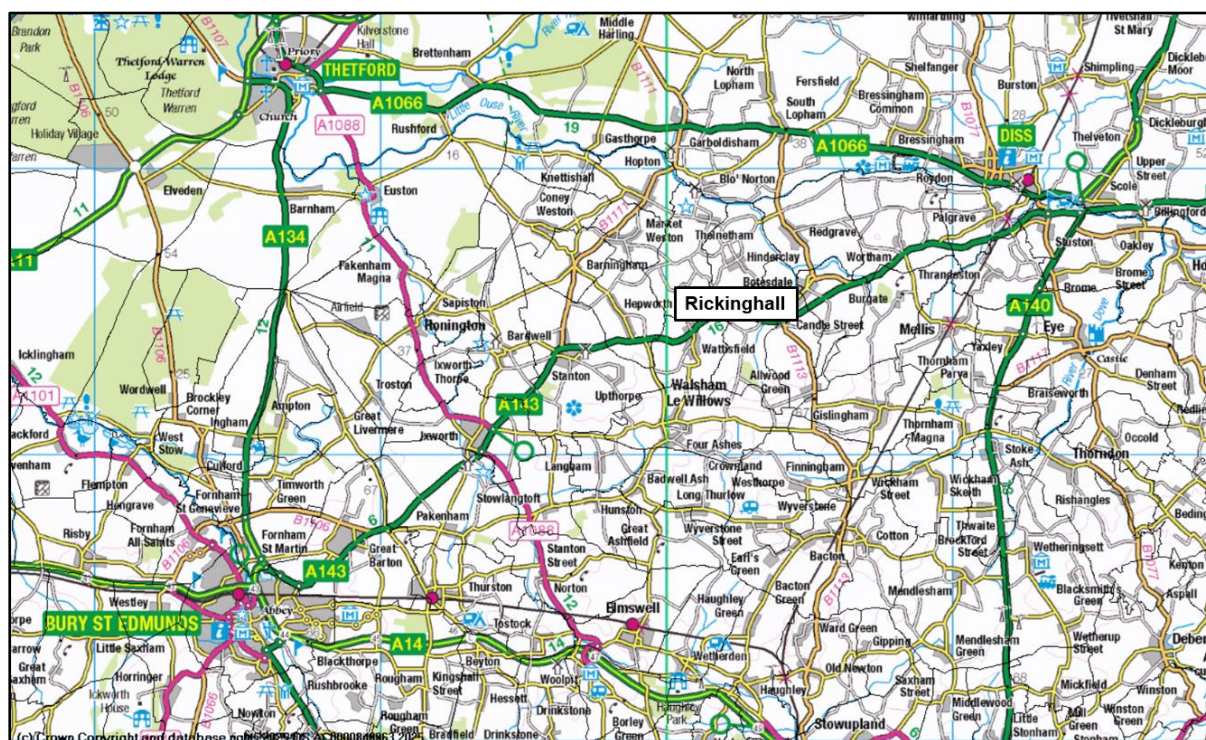
**Figure 1. Average monthly rainfall (July – October 2023) as a percentage of the historic average monthly rainfall**

The following report acknowledges that October 2023 and particularly Storm Babet, was an extreme event and will assess the probable 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.

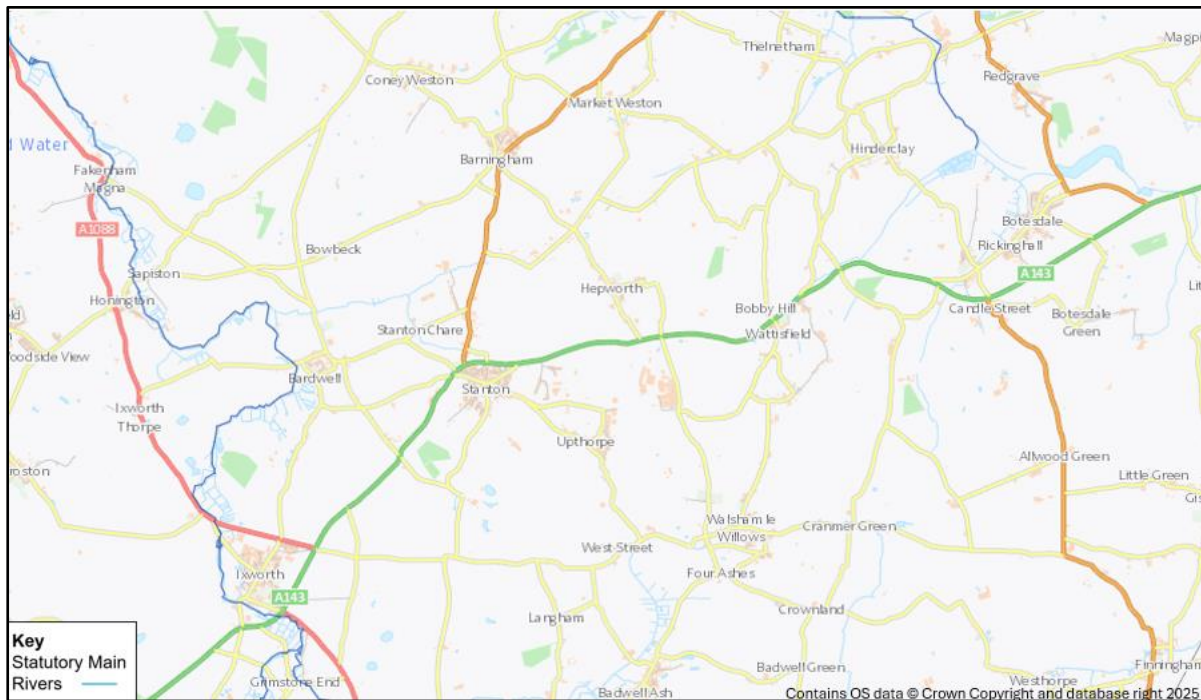
## 2. Location of flooding

The village of Rickingham is located in the district of Mid Suffolk District Council, approximately 5½ miles southwest of Diss and 13½ miles northeast of Bury St Edmunds (Figure 2).



**Figure 2. Investigation area map**

The Environment Agency has permissive powers to carry out maintenance, improvement or construction work on statutory main rivers to manage flood risk. 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. In Rickingham, there are no ordinary watercourses where the IDBs manage the flood risk. Therefore, the flood risk from ordinary watercourses in Rickingham is managed by the LLFA (Suffolk County Council).

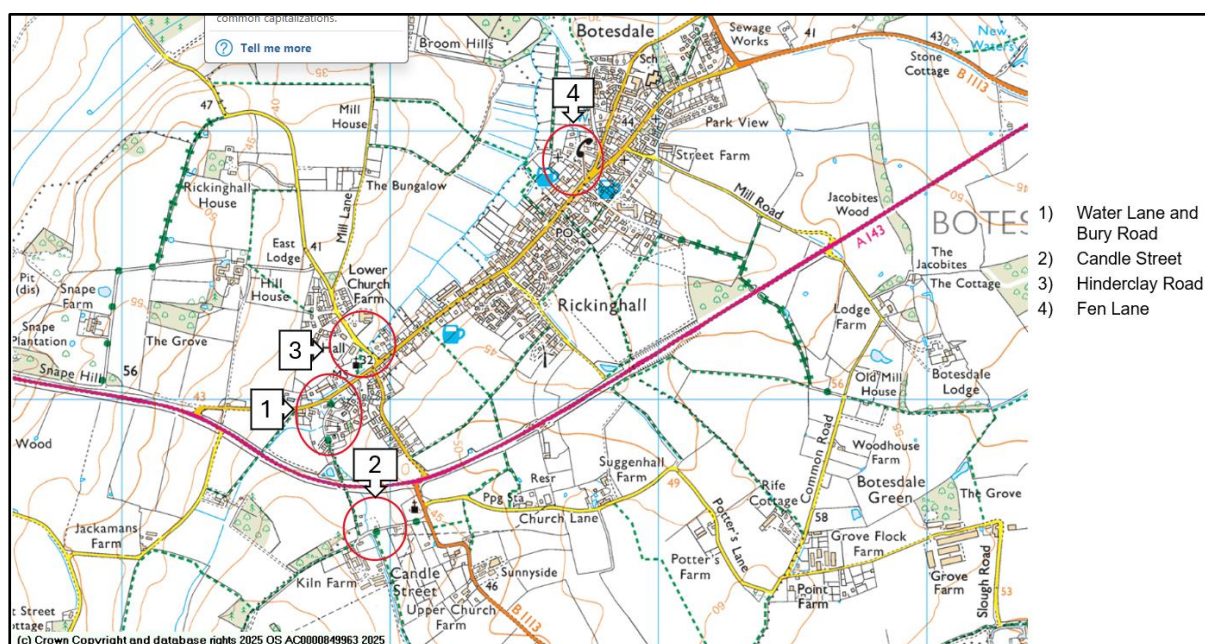


**Figure 3. Location of statutory main rivers (Environment Agency)**

On the 20<sup>th</sup> October 2023, Storm Babet resulted in significant rainfall across Suffolk on already saturated ground due to above average rainfall in the preceding weeks. Rickinghall was significantly impacted with approximately eleven properties reporting internal flooding. Flood water was described as coming from several sources including surface water runoff from surrounding fields (pluvial), the overtopping of local watercourses (fluvial) and overwhelmed drainage systems. Within this report, the term 'flood water' may be used to describe all types of flooding.

For the purposes of this investigation the various areas affected by internal flooding have been separated into four distinct zones (Figure 4):

1. Water Lane and Bury Road
2. Candle Street
3. Hinderclay Road
4. Fen Lane



**Figure 4. Distinct flood zones**

### **3. Records of any historical flooding**

A review of Suffolk County Council's Highways reporting tool, local and social media reports indicated previous episodes of internal flooding of the parish church and school in 1879, in property in Hinderclay Road in 1968. Property in Fen Lane was reported to have flooded internally due to sewers approximately 30 years prior to Storm Babet. Property in New Delight Road was also reported to have flooded internally in 2004, May 2013 and December 2020.

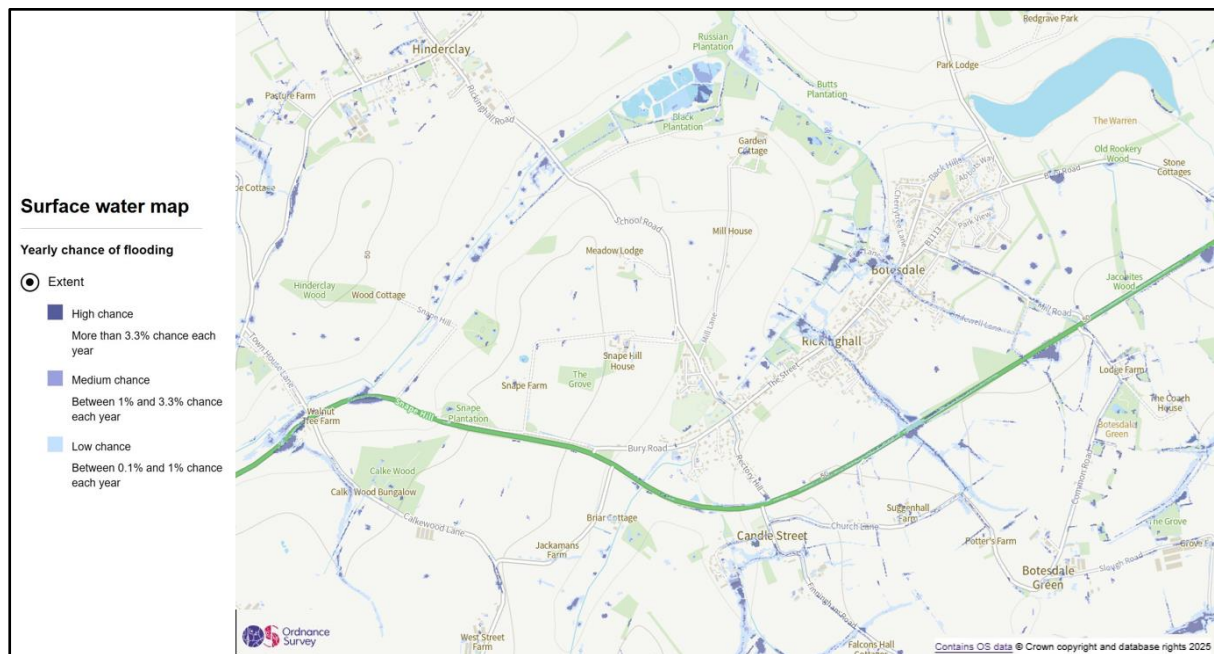
The Environment Agency hold no historic record of flooding in Rickinghall.

SCC Highways has received multiple reports of highway flooding in Candle Street and towards Church Lane. These have been associated generally with discharges from the water treatment plant in Church Lane.

### **4. Predicted Flood Risk**

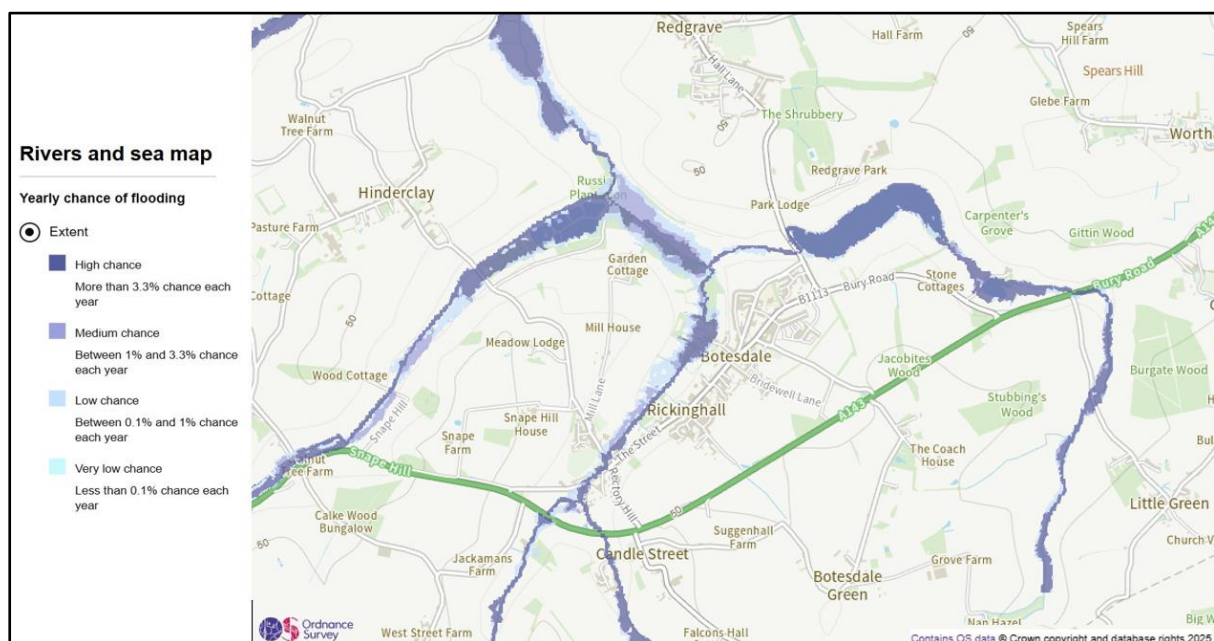
Areas of Rickinghall are at significant surface water (pluvial) flood risk See figure 5. Affected property in Fen Lane is projected to be at low or medium surface water flood risk and adjacent to a high risk area. Affected property in Kiln Farm Lane, Candle Street is at medium surface water flood risk and adjacent to a high risk area. However, affected property in Water Lane and Hinderclay Road is not projected to be at surface water flood risk. One of the affected properties on Bury Road is projected to be at low surface water flood risk and other affected property in Bury Road is projected to be at no risk.

It should be noted that low chance of flooding indicates a flood risk during extreme events, such as Storm Babet.



**Figure 5. Projected flood risk from surface water (Environment Agency)**

Areas of Rickinghall are at significant projected fluvial flood risk. See figure 6. Affected property in Water Lane and Kiln Farm Lane, Candle Street is projected to be at high risk of fluvial flooding. Fluvial flood risk for affected property in Bury Road and Hinderclay Road is projected to range from low to high. Affected property in Fen Lane is not projected to be at fluvial flood risk.



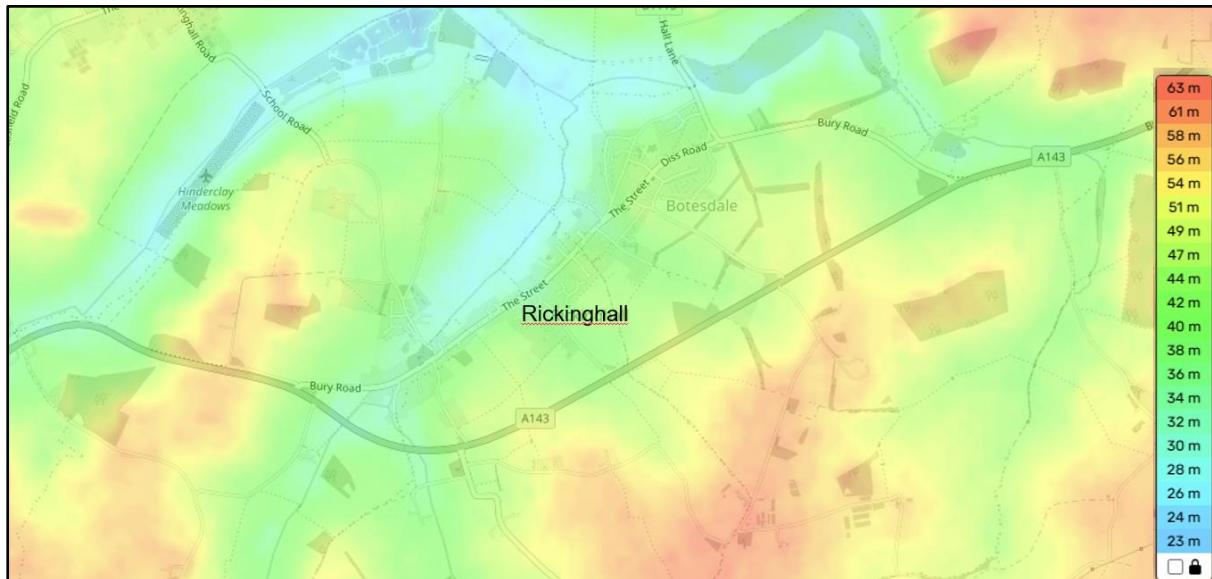
**Figure 6. Projected flood risk from rivers and seas (Environment Agency)**

## 5. Catchment characteristics

Rickinghall is situated in a rural area with farmland used predominantly for arable agriculture. The main settlement of Rickinghall lies predominantly on the east side of

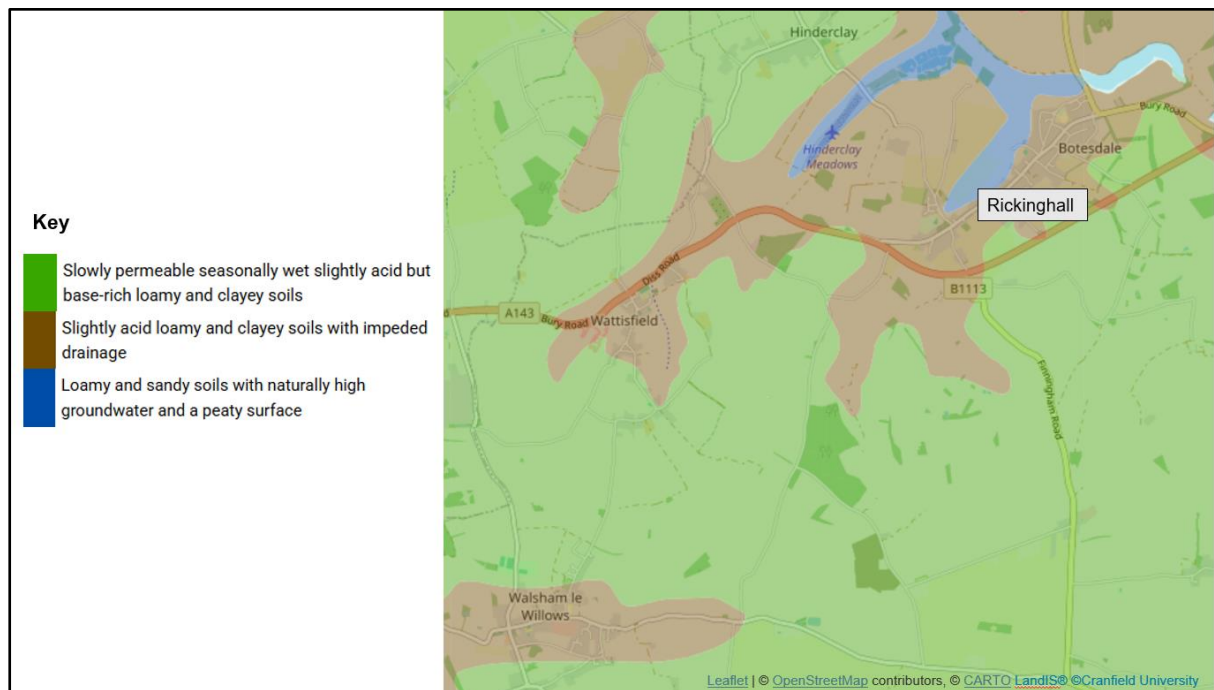
a valley which descends from the southwest to the northeast. Two major flowpaths converge southwest of Water Lane, contributing to a stream which flows north on the west side of Water Lane and under Bury Road. This stream continues to flow northeast to the rear of property on the west side of The Street. It then flows northwest to join the Little Ouse River.

During high rainfall events, considerable flows of water converge towards low-lying areas of the village, meaning that overwhelmed infrastructure and watercourses may be observed at these times.



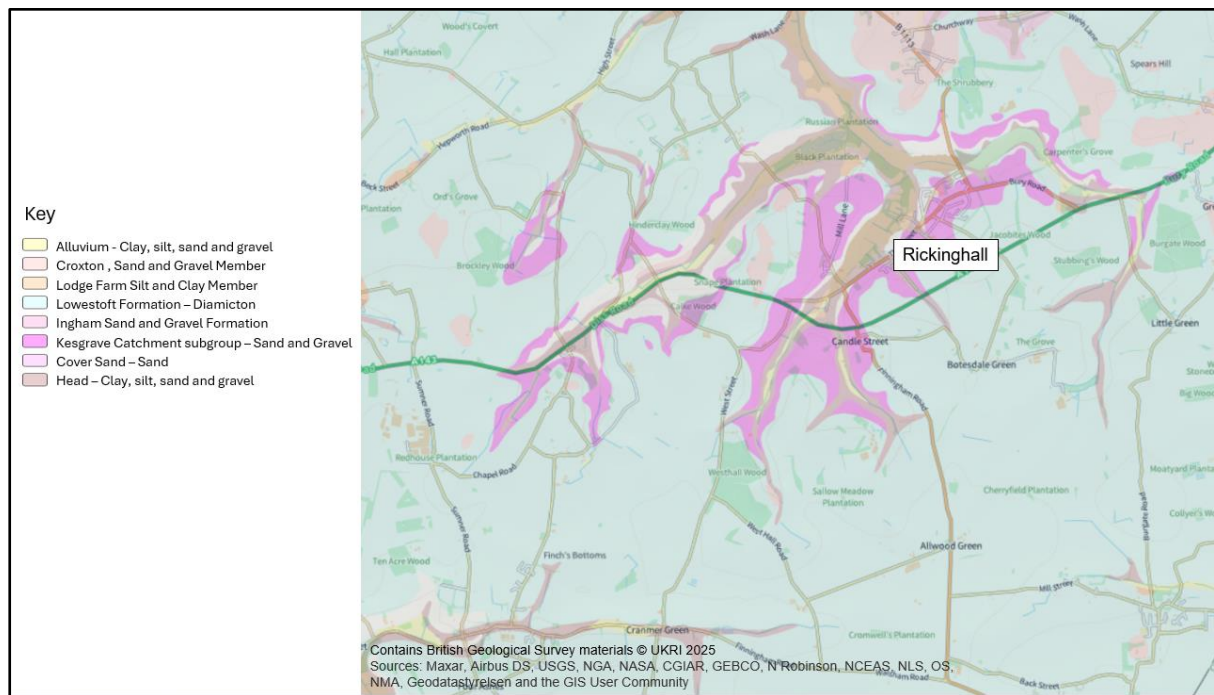
**Figure 7. Topography (TessaDEM as cited in [topographic-map.com](http://topographic-map.com))**

The soils across which surface water flows towards the village of Rickingham are loamy and clayey (Figure 8). This means that water infiltrates the soil more slowly and surface water runoff is greater, particularly during intense rainfall. However, the saturated nature of the soils leading up to the event would also have prevented some infiltration.



**Figure 8. Soil map of catchment area (LandIS® Soils)**

Figure 9 shows that the superficial geology in the catchment immediately upstream of Rickinghall is sand and gravel based and relatively permeable. However, further upstream the superficial geology is made up of 'Lowestoft Formation – Diamicton' 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 is sometimes known as boulder clay. Generally, this has a low permeability, meaning water will tend to flow off it before it can infiltrate in short term events, which also reflects the reports collected during Storm Babet.



**Figure 9. Superficial geology (BGS Viewer)**

The predominant bedrock in Rickinghall village and in the surrounding upstream area of the catchment consists of various chalk formations and Crag Group – Sand which are generally relatively permeable. However, during short term intense rainfall events, soil composition and superficial geology become more influential in affecting the volume of surface water runoff. Combined with the topography within the catchment, the soils and superficial geology make Rickinghall susceptible to extreme rainfall events. Saturated ground and high rainfall, like that of Storm Babet, will further emphasise the vulnerability of the parish and localised flooding could be experienced.

## Flooding Sources, Pathways & Receptors

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

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 a subsequent request to Rickinghall parish council for community information.

Data from surrounding Environment Agency rain gauges indicates that a significant volume of rain was experienced during Storm Babet. The nearest rainfall gauge to Rickinghall is Stanton (approximately four and a half miles west of Rickinghall). The Stanton rainfall gauge recorded 72.7mm of rain between 19 Oct 20:00 and 20 Oct

16:45. 31.1mm (more than half) of rainfall was received between 8:00 and 12:15 on the morning of 20 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.

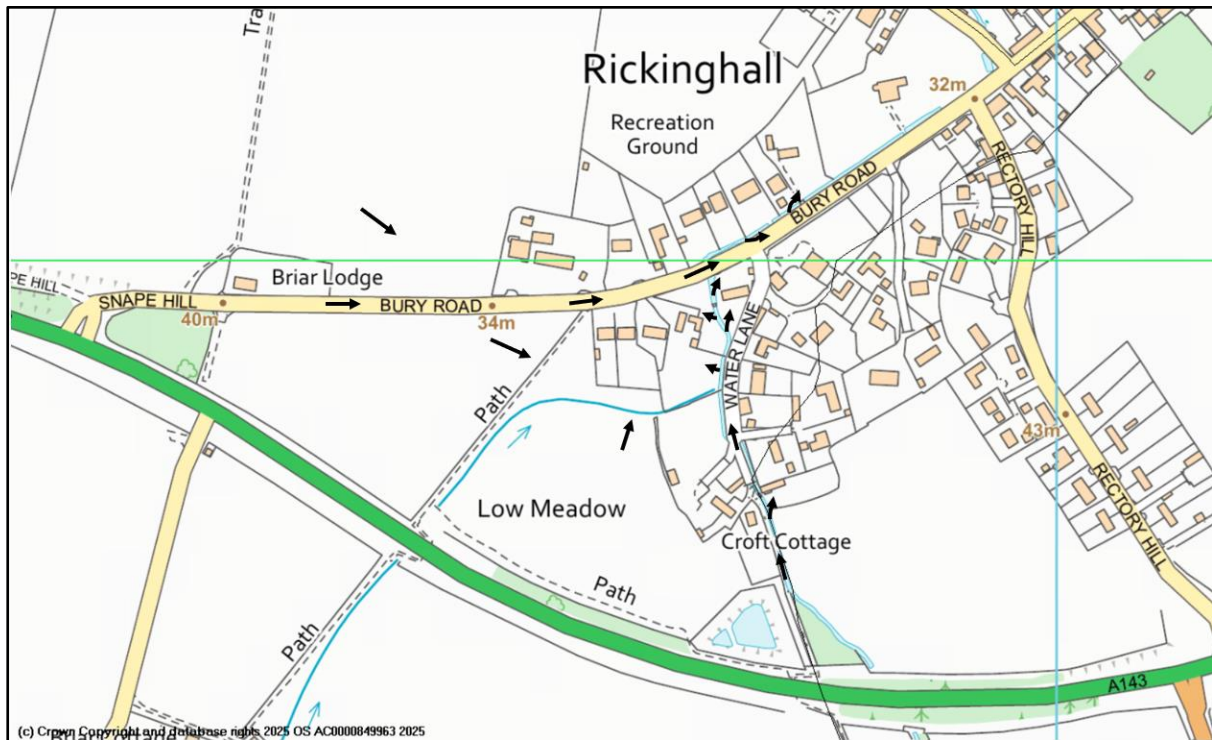
A tributary of the Little Ouse runs through Rickinghall. Although the watercourse is not gauged, the area at risk of flooding in Rickinghall is covered by a Flood Alert area. The flood alert was issued by the Environment Agency on 20 October 2023 at 15:30 and removed on 28 October at 09:18, based on the level on the River Little Ouse at Abbey Heath, Thetford.

Detailed descriptions of each investigation area can be found below. Garden House Lane was also reported to have flooded extensively during Storm Babet and on the 4<sup>th</sup> January 2024 although there were no reports of internal property flooding.

1. Water Lane and Bury Road
2. Candle Street
3. Hinderclay Road
4. Fen Lane

### **1. Water Lane and Bury Road**

Six properties were reported to have flooded in Water Lane and the nearby area of Bury Road. Of these, one in Bury Road was projected to be at low surface water flood risk and the remainder were projected to be at no surface water flood risk. Affected property in Bury Road ranged from low to high projected fluvial flood risk. All property in Water Lane was projected to be at high fluvial flood risk.



**Figure 10. Approximate floodwater flow paths surrounding the area of affected property in Water Lane and Bury Road**

Significant rainfall on a relatively large catchment caused considerable quantities of surface water to flow from fields and field drainage ditches primarily from the south and west of Rickinghall towards Water Lane. Water levels rose in a watercourse flowing from the south of Water Lane, which then crosses Water Lane from east to west through a culvert and flows north on the west side of Water Lane. A further watercourse joins this watercourse on the west side of Water Lane from the southwest. These watercourses reached capacity by 8am and had overtopped by 11am on 20<sup>th</sup> October, flooding adjacent property and fields.

Watercourses in the vicinity of Water Lane were reported to have been poorly maintained. A culvert and gullies in Water Lane and nearby Bury Road were also reported to be blocked and poorly maintained. In Water Lane, only one of the culverts (the one that carries the highway) is SCC owned and maintained. It was inspected in November 2023 and no significant defects were noted. In July 2024, deterioration of the highway retaining wall adjacent to the culvert in Water Lane was reported. Repairs have been ordered by SCC Highways for this retaining wall. Due to the extreme rainfall conditions during Storm Babet, the capacity of the wider drainage system, even if fully functioning, would have been exceeded by the amount of water present.

High groundwater levels were reported and may have been a contributing factor as floodwater was also described as rising through flooring. Sewage was also reported to be in the floodwater affecting some properties, the most likely cause being overwhelmed private sewage treatment facilities.

Floodwater in Water Lane was reported to have reached 1 metre depth and to be flowing fast northwards. Internal property floodwater levels in Water Lane exceeded 30cm. Late in the evening of 20<sup>th</sup> October it was reported that council staff (presumed to be SCC) came and cleared the gullies and pumped some water away. Floodwater took 24 hours to drain away.

Surface water also flowed from fields on to Bury Road and down Bury Road from the west into driveways and towards the Water Lane road junction. Flood water levels in Bury Road reached approximately 50cm and were fast flowing. The watercourse on the west side of Water Lane flows under Bury Road and then eastwards on the north side of Bury Road, where it was also reported to have overtopped. Internal property flood water levels in this area on the north side of Bury Road reached 15cm.

Further flooding of Water Lane was reported in Storm Ciaran and Storm Henk. Floodwater levels in Water Lane on 4<sup>th</sup> January 2024 were reported to have peaked at approximately 60cm, reaching the capacity of the culvert under Bury Road and causing further property flooding. Further flooding of Water Lane and Bury Road occurred again in late February 2024. Subsequent cyclical maintenance visits by SCC Highways indicated that three of the gullies in the vicinity were not fully functioning. However, residents were reported to have resorted to clearing drains and gullies themselves, which may also have impacted these records. The highways drainage system in the vicinity of Water Lane and nearby Bury Road merits further investigation for blockages.

In summary:

- Significant rainfall and a large catchment caused considerable quantities of surface water to flow from the south and west towards Water Lane.
- This surface water flowed into two watercourses converging adjacent to Water Lane.
- The watercourses overtopped, flooding nearby property and fields.
- Private sewage treatment systems were overwhelmed.
- Some internal groundwater flooding may have occurred.
- A culvert and gullies in Water Lane and nearby Bury Road were reported to be blocked and poorly maintained. The only culvert in Water Lane which is owned and maintained by SCC was inspected in November 2023 and no significant defects were noted.
- Ditches and watercourses in the vicinity of Water Lane were reported to be poorly maintained.
- Surface water flowed eastwards from fields on to Bury Road.
- The watercourse overtopped on the north side of Bury Road, flooding further property.
- Further flooding occurred in Storm Ciaran and Storm Henk and in late February 2024.

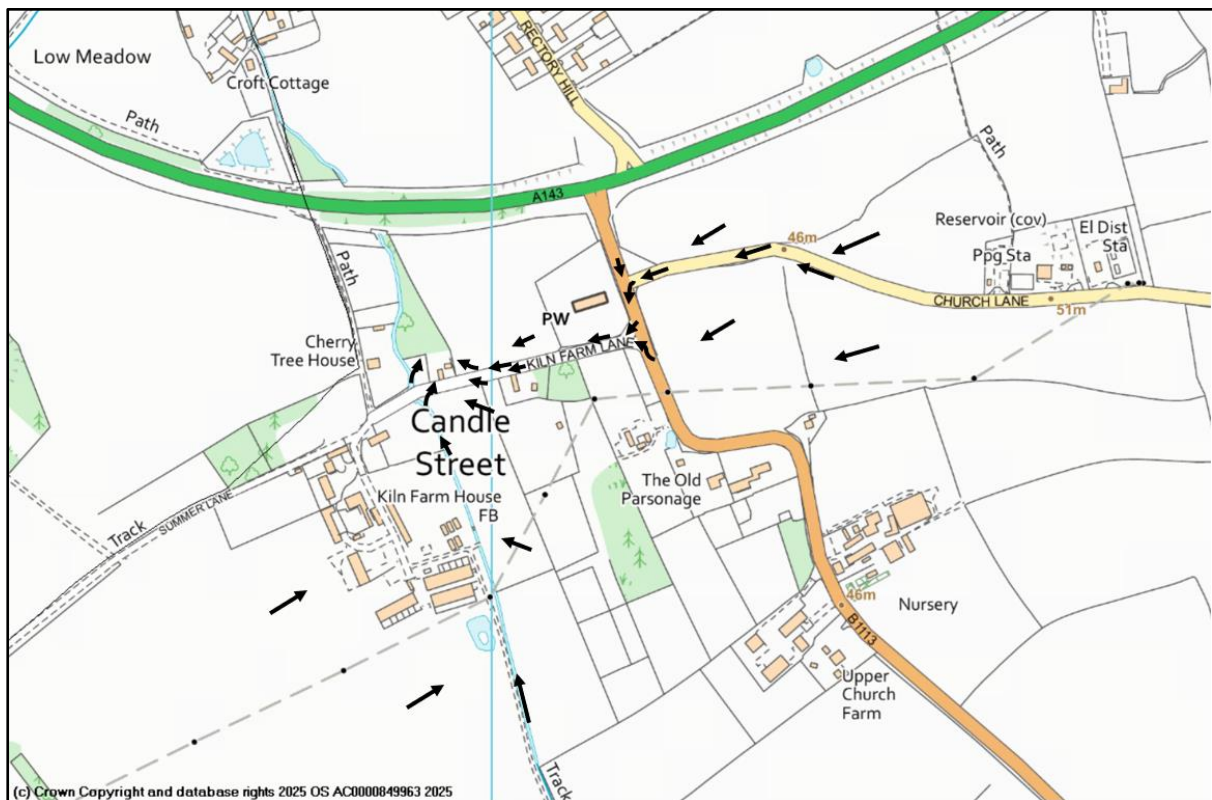
- In July 2024, deterioration of the highway retaining wall adjacent to the culvert in Water Lane was reported and repairs have been ordered for the headwall.

Recommended actions:

- Residents to install Property Flood Resilience (PFR) measures.
- SCC Highways to investigate the highways drainage system in Water Lane and nearby Bury Road for potential blockages.
- SCC Highways to ensure completion of highway drainage asset cyclic maintenance.
- Explore potential natural flood management measures on surface water flow paths in the upstream catchment (eg. leaky dams, buffer strips, tree planting and attenuation ponds and floodplain reconnection) to “slow the flow” and attenuate water.
- Landowners to carry out watercourse maintenance, to reduce flood risk as necessary in accordance with their riparian responsibilities.

## **2. Candle Street**

One property was reported to have flooded internally in Kiln Farm Lane, Candle Street. Affected property in Kiln Farm Lane is projected to be at high risk of fluvial flooding and at medium surface water flood risk and adjacent to a high surface water flood risk area.



**Figure 11. Approximate flood water flow paths in Candle Street**

Surface water runoff from fields was reported to have combined with surface water on Church Lane and flowed west on Church Lane and across the B1113 into Kiln Farm Lane. Field drainage ditches adjacent to Church Lane and Kiln Farm Lane were reported to have been in poor condition with overgrown vegetation and overtopped. It was reported that this floodwater may have been supplemented by floodwater being released by a waterworks on Church Lane which flows onto the highway and continues to be described as a persistent issue. Essex and Suffolk Water have previously reported that the volume of discharge was within permissible levels.

Significant rainfall on a relatively large catchment caused considerable quantities of surface water to flow from fields and into a watercourse which flows north through a culvert under Kiln Farm Lane and towards Water Lane, subsequently contributing to the watercourse that flows on the west side of Water Lane. The culvert was reported to be obstructed by debris collecting at the entrance which contributed to flooding. (During subsequent cyclical maintenance inspections by SCC Highways the culvert was reported to be clear, but with overgrown vegetation on the adjacent banks. However, the culvert has a central support which makes the culvert more prone to obstruction from floating debris becoming trapped at the upstream end of the culvert. This watercourse also overtopped adjacent to affected property on the north side of Kiln Farm Lane, causing floodwater levels to rise. Floodwater entered property in Kiln Farm Lane at 10am on 20<sup>th</sup> October and started to clear at 6pm.

In summary:

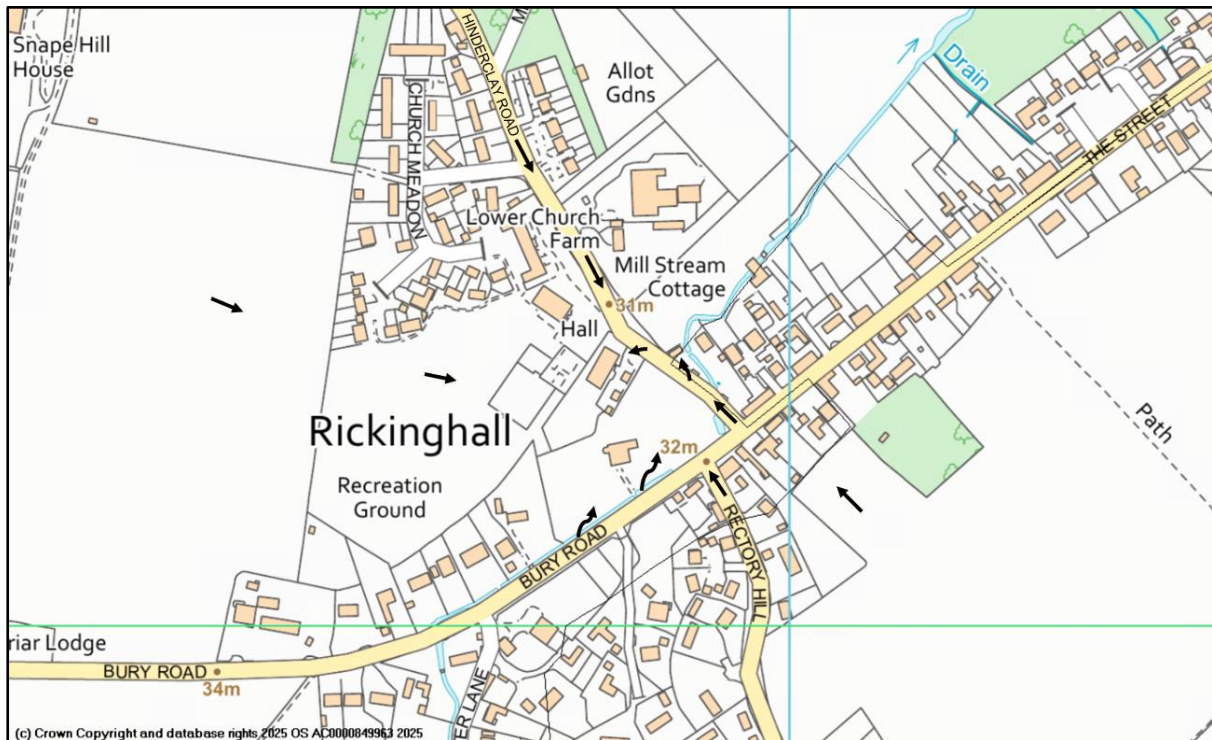
- Surface water runoff from fields combined with surface water on Church Lane and flowed west, across the B1113 into Kiln Farm Lane.
- This floodwater may have been supplemented by water released from the Essex and Suffolk Water treatment plant on Church Lane.
- Field drainage ditches adjacent to Church Lane and Kiln Farm Lane were reported to be poorly maintained and overtopped.
- Significant rainfall and a large catchment caused considerable quantities of surface water to flow from fields in the south towards Kiln Farm Lane and the join the watercourse flowing under it.
- This watercourse overtopped in the vicinity of Kiln Farm Lane.
- The culvert on Kiln Farm Lane was reported to be obstructed by debris, exacerbating flooding. The culvert was found to be clear subsequently, but with adjacent overgrowing vegetation.

#### Recommended actions:

- Residents to install Property Flood Resilience (PFR) measures.
- SCC Highways to ensure completion of highway drainage asset cyclic maintenance.
- Essex and Suffolk Water to investigate the discharges from their treatment site on Church Lane and ensure these do not increase flood risk.
- SCC LLFA to investigate the discharges from their treatment site on Church Lane and ensure these do not increase flood risk.
- Explore potential natural flood management measures on surface water flow paths in the upstream catchment (eg. leaky dams, buffer strips, tree planting and attenuation ponds and floodplain reconnection) to “slow the flow” and attenuate water.
- Landowners to carry out watercourse maintenance, to reduce flood risk as necessary in accordance with their riparian responsibilities.

### 3. Hinderclay Road

Two properties were reported to have flooded in Hinderclay Road. Fluvial flood risk for affected property in Hinderclay Road is projected to range from low to high. Affected property in Hinderclay Road is not projected to be at surface water flood risk.



**Figure 12. Approximate floodwater flowpaths, Hinderclay Road**

Significant rainfall on a relatively large catchment caused considerable quantities of surface water to flow from fields and into a watercourse which flows north on the west side of Water Lane and then east along the north side of Bury Road. This watercourse overtopped its banks to the west of Hinderclay Road and floodwater flowed northeast across the grounds of St Mary's Church towards Hinderclay Road. Surface water also flowed down Rectory Hill into Bury Road and surface water from Bury Road then flowed down Hinderclay Road. Affected property is in a low-lying location on Hinderclay Road, towards which flood water converged.

Blockages in highways drainage were reported to be an ongoing issue in Hinderclay Road and on 18<sup>th</sup> October 2023, a drain near to affected property in Hinderclay Road was reported to be compacted with earth. However, due to the extreme rainfall conditions, the capacity of the wider drainage system, even if fully functioning, would have been exceeded by the amount of water present.

Affected property reported flooding at 1pm on the 20<sup>th</sup> October, causing internal floodwater levels to reach approximately 10cm. Floodwater ceased to enter property by 4.30pm. Preliminary jetting and clearing has subsequently been undertaken on the highways drainage system in Hinderclay Road. However, further investigation for blockages by SCC Highways is required.

In summary:

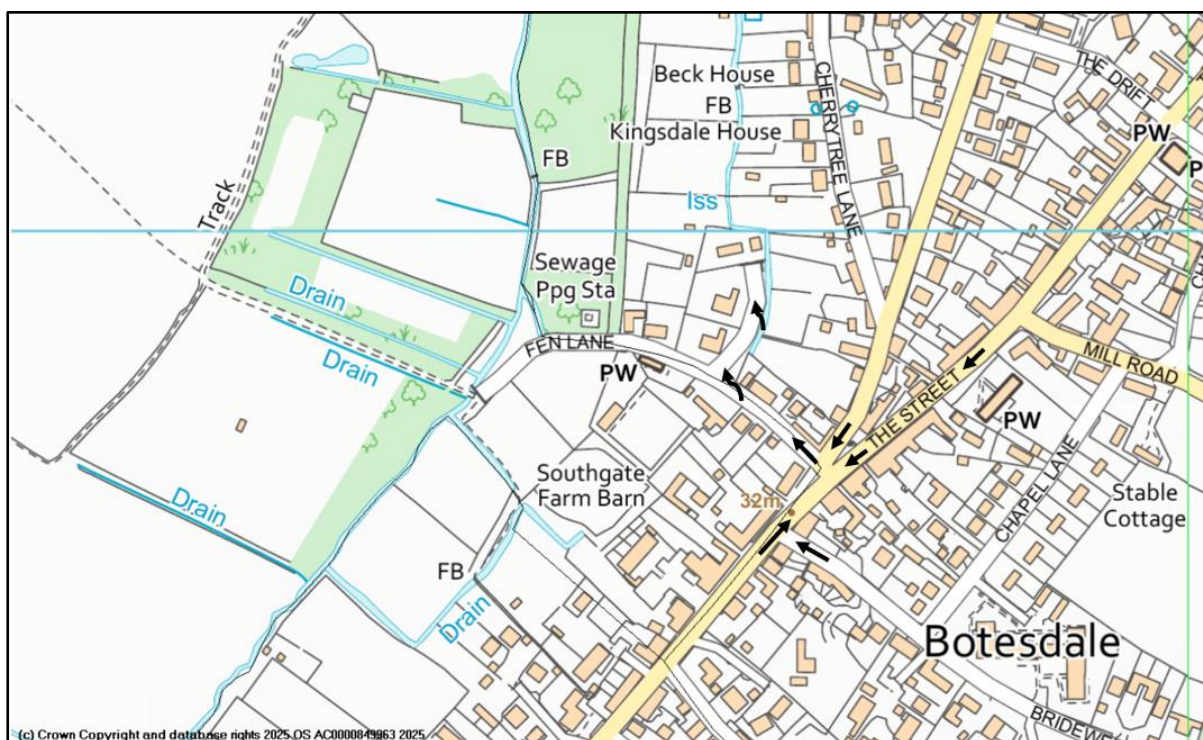
- Significant rainfall on a relatively large catchment caused considerable quantities of surface water to flow from fields and into a watercourse which flows east along the north side of Bury Road.
- The watercourse overtopped.
- Floodwater flowed northeast towards the low point of Hinderclay Road, combining with surface water flowing from land and roads to the southeast.
- Highways drainage was reported to be blocked in Hinderclay Road.
- Preliminary jetting and clearing of highways drainage has been undertaken but further investigations are required.

Recommended actions:

- Residents to install Property Flood Resilience (PFR) measures.
- SCC Highways to investigate further the drainage system for blockages in the vicinity of affected property on Hinderclay Road.
- SCC Highways to ensure completion of highway drainage asset cyclic maintenance.
- Explore potential natural flood management measures on surface water flow paths in the upstream catchment (eg. leaky dams, buffer strips, tree planting and attenuation ponds and floodplain reconnection) to “slow the flow” and attenuate water.

#### **4. Fen Lane**

Two properties were impacted by internal flooding in Fen Lane. Affected property in Fen Lane is projected to be at low or medium surface water flood risk and adjacent to a high-risk area. Affected property in Fen Lane is not projected to be at fluvial flood risk.



**Figure 13. Approximate flood water flowpaths, Fen Lane**

Surface water flowed from roads east of Fen Lane towards the lower-lying junction between The Street and Fen Lane and then down into Fen Lane and its northern cul-de-sac. Surface water also flowed from land east of the northern cul-de-sac towards it. Surface water flowed into the ditch on the eastern side of the cul-de-sac and the ditch overtopped, flooding adjacent property. A manhole in Fen Lane is reported to have surcharged during Storm Babet and a large quantity of silt and hard debris such as bricks and tiles were reported at the exit point of the drain into the watercourse after floodwater subsided. It was reported that the surface water drainage for Botesdale converges on this drain and this merits further investigation by Anglian Water. However, due to the extreme rainfall conditions, the capacity of the wider drainage system, even if fully functioning, would have been exceeded by the amount of water present during Storm Babet.

In summary:

- Surface water flowed from roads and land east of Fen Lane towards the junction between Fen Lane and The Street.
- It flowed down Fen Lane and into the ditch on the east side of the northern cul-de-sac.
- It flowed across land from the east towards the cul-de-sac in Fen Lane.
- A manhole in Fen Lane surcharged.
- The ditch on the east side of the cul-de-sac overtopped flooding adjacent property.

- Subsequently, a considerable quantity of hard debris and silt was found at the exit point of the drain into the ditch.

Recommendations:

- Residents to install Property Flood Resilience (PFR) measures.
- SCC Highways to investigate the highways drainage system in Fen Lane for potential blockages.
- SCC Highways to ensure completion of highway drainage asset cyclic maintenance.
- Anglian Water to identify their surface water drainage system converging in Fen Lane and investigate for blockages in Fen Lane.
- Explore potential natural flood management measures on surface water flow paths in the upstream catchment (eg. leaky dams, buffer strips, tree planting and attenuation ponds) to “slow the flow” and attenuate water.
- Landowners to carry out watercourse maintenance, to reduce flood risk as necessary in accordance with their riparian responsibilities.

## Risk Management Authorities, Non-Risk Management Authorities and flood risk functions

<b>Risk Management Authority</b>	<b>Relevant Flood Risk Function(s)</b>
Suffolk County Council	Lead Local Flood Authority, Highways Authority & Asset Owner
Environment Agency	Lead organisation for providing flood risk management under its permissive powers and warning of flooding from main rivers
West Suffolk District Council	Local Planning Authority & Asset Owner
Anglian Water	Asset Owner
<b>Non-Risk Management Authority</b>	<b>Relevant Flood Risk Function(s)</b>
Private Landowners	Riparian responsibilities for watercourses
Private Homeowners	Improving flood resilience to property
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 to date:

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.

<b>Action</b>	<b>Responsible Party</b>	<b>Progress</b>
Offer of £5k Property Flood Resilience (PFR) grant funded scheme to eligible properties that flooded during Storms Babet	Suffolk County Council Lead Local Flood Authority (LLFA)	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	SCC LLFA	SCC published " <a href="#">Flood Smart Living</a> " handbook designed to increase flood resilience for residents, landowners and communities, November 2024

## 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 Rickingham. 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
<b>Short Term Actions</b> (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	Rickingham Parish Council	6 months	
Residents to consider installing Property Flood Resilience (PFR) measures to property to reduce damage caused by flooding.	Residents	N/A	<p>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 "<a href="#">Flood Smart Living</a>" handbook.</p> <p>There are currently no active PFR schemes being managed by the LLFA in Suffolk.</p>
Investigate the highways drainage system in Water Lane and nearby Bury	SCC Highways	6 months	

Road for potential blockages.			
Further investigate the drainage system for blockages in the vicinity of affected property on Hinderclay Road.	SCC Highways	6 months	
Investigate the highways drainage system in Fen Lane for potential blockages.	SCC Highways	6 months	
SCC Highways to ensure completion of highway drainage asset cyclic maintenance.	SCC Highways	N/A	Ongoing
Identify the Anglian Water surface water drainage system converging in Fen Lane and investigate for blockages in Fen Lane.	Anglian Water	6 months	
Investigate the discharges from the water treatment site on Church Lane and ensure these do not increase flood risk.	Essex and Suffolk Water	6 months	
Investigate the discharges from the water treatment site on Church Lane and ensure these do not increase flood risk.	SCC LLFA	6 months	
Landowners to carry out watercourse maintenance, including culverts, to reduce flood risk as necessary in accordance with their riparian responsibilities. (See Appendix A)	Riparian landowners	6 months	Ongoing
<b>Medium Term Actions</b> (e.g. longer planning timescales and potential need to source funding but potential for greater impact)			
Explore potential natural flood management measures on surface water flow paths in the upstream catchment (eg. leaky dams, bunds, buffer strips, tree planting, attenuation ponds and floodplain reconnection) to “slow the	Landowners supported by SCC LLFA, EA	12 - 24 months	

flow” and attenuate water. (See Appendix A)			
Deliver improvements to highway drainage assets if investigation works suggest it is beneficial and viable.	SCC Highways	12-24 months	
<b>Long Term actions</b> (significantly longer timescale and budget required with potentially greater positive impact)			
Deliver any capital interventions that are economically, technically and environmentally feasible and acceptable to improve the flood resilience of the village, eg. NFM and PFR measures. (See Appendix A)	SCC LLFA, EA and landowners	TBC	

## Approval

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

Reviewer	Date of Review

## 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](mailto: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.

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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

