

## Section 19 Flood and Water Management Act 2010

### Parham & Hacheston 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. Parham and Hacheston were two nearby villages that were significantly impacted, with approximately 30 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.

Parham and Hacheston are located in areas at significant risk of both fluvial and pluvial flooding and the nature of the surrounding topography and geology contributes to the susceptibility of the community to flooding. The villages are low-lying, surrounded by a reasonably steep rural catchment. Multiple flood water flow paths converge near to village centres, where the gradient is noticeably shallower. The local geology and soils are characterised as having low permeability and high run off, making a high number of properties in Parham and Hacheston 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 Parham and Hacheston were widespread and for the purposes of this report, the affected areas have been categorised into six 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 Parham and Hacheston were 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 the villages. For short term measures, key highlights include the implementation of community flood plans, maximising Property Flood Resilience (PFR) grants, maintenance of watercourses and local Community Self Help schemes. For medium to longer term recommendations, there is emphasis on the investigation of potential improvements to drainage infrastructure, 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*

<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	

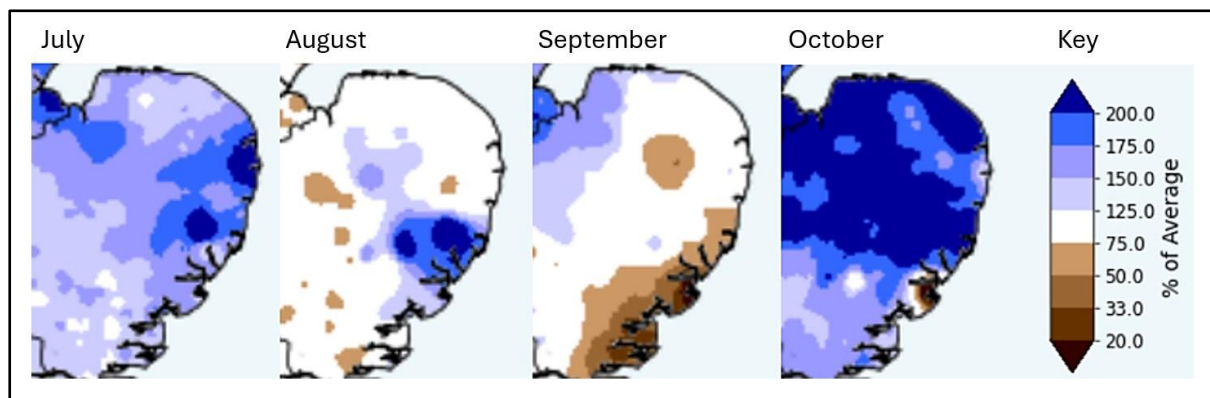
# Understanding the flood context

## 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 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 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 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 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 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

Parham is a small village positioned halfway between the larger market towns of Framlingham and Wickham Market. Hacheston lies nearly 1 mile to the south of Parham. Both are located in the district of East Suffolk.

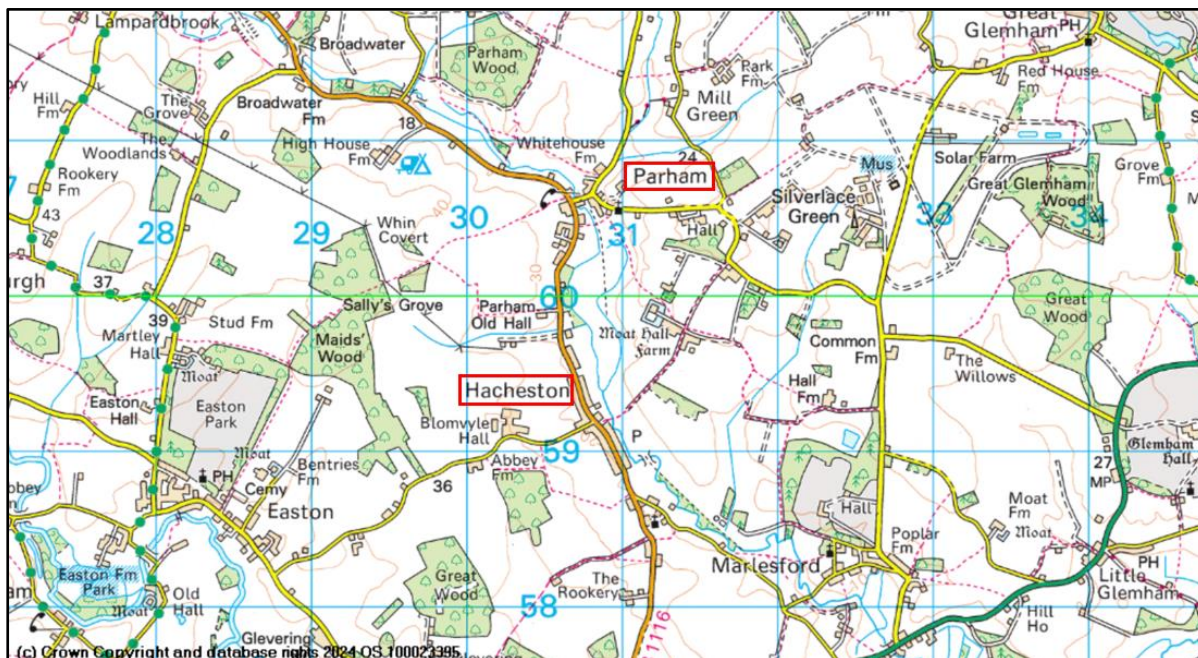


Figure 2. Investigation area map

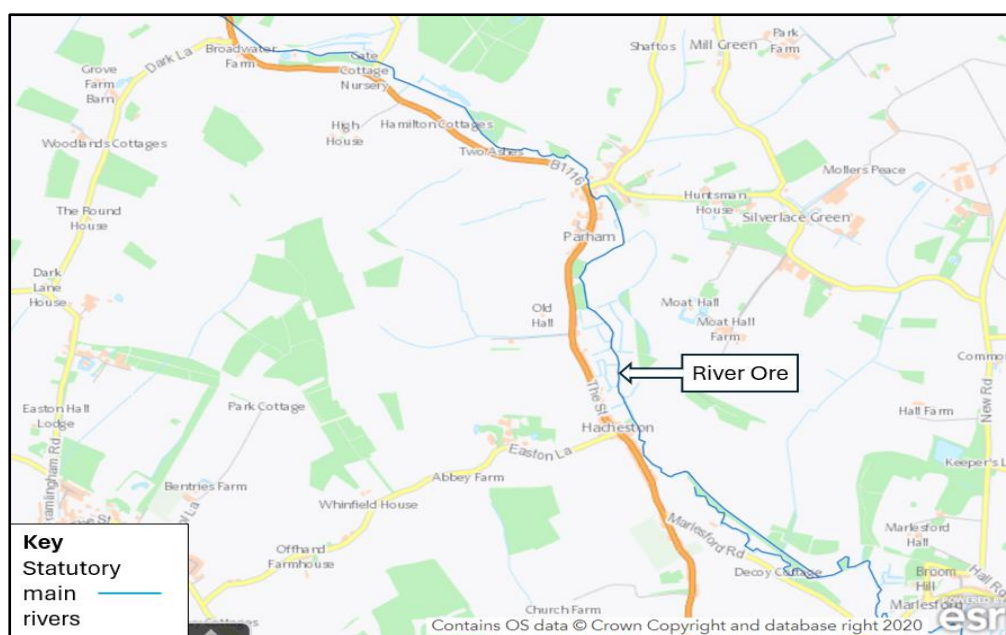
On the 20<sup>th</sup> of October 2023, Storm Babet resulted in significant rainfall in Suffolk on top of an already wetter than average October. This caused internal flooding to properties, residential and commercial, across the county from various flooding sources. The following report is focused on Parham and Hacheston and the surrounding areas and will discuss the possible sources of the event, the observed flow paths through the communities, and the receptors which have been affected.

Parham and Hacheston were significantly impacted with approximately 30 properties reporting internal flooding. Flood water was described as coming from several sources including surface water runoff from surrounding fields and highways (pluvial), the overtopping of local watercourses (fluvial) and overwhelmed sewerage and drainage systems. Within this report, the term 'flood water' may be used to describe all types of flooding.

Figure 3 shows the most significant watercourses in the area surrounding Parham and Hacheston, including the River Ore, a statutory main river.

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.



*Figure 3. Location of statutory main rivers and significant ordinary watercourses*

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.

Parham and Hacheston fall within the Flood Warning area: The River Ore from Framlingham to Blaxhall, including Parham, Hacheston and Marlesford.

A Flood Warning was in force from 20<sup>th</sup> October 2023 at 12:45pm until it was removed on 22<sup>nd</sup> October 2023.

Parham and Hacheston also lie within the more extensive Flood Alert area of the Thorpeness Hundred River and the River Ore. This Flood Alert was also in force on 20<sup>th</sup> October 2023.

For the purposes of this investigation the various areas affected by flooding have been separated into six distinct locations (see Figures 4 & 5). The locations are as follows:

1. Main Road B116 (northwest of Parham)
2. Hall Road
3. The Street, Brick Lane and North Green Road
4. Main Road, central Parham
5. Main Road and Corrance Close
6. Hacheston

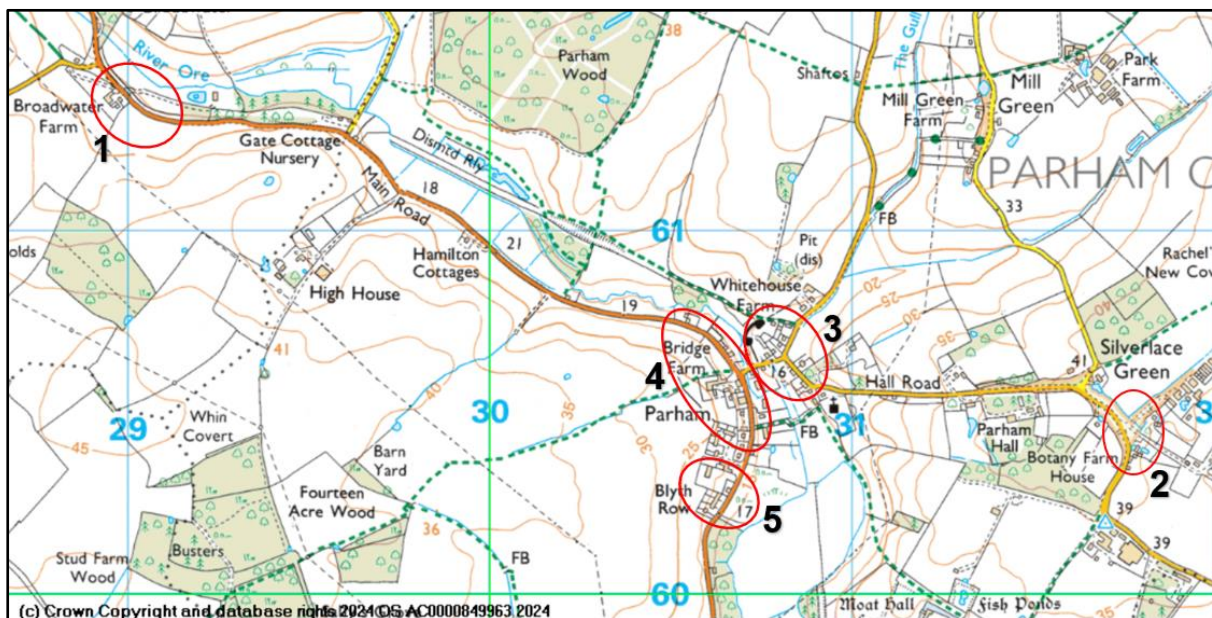
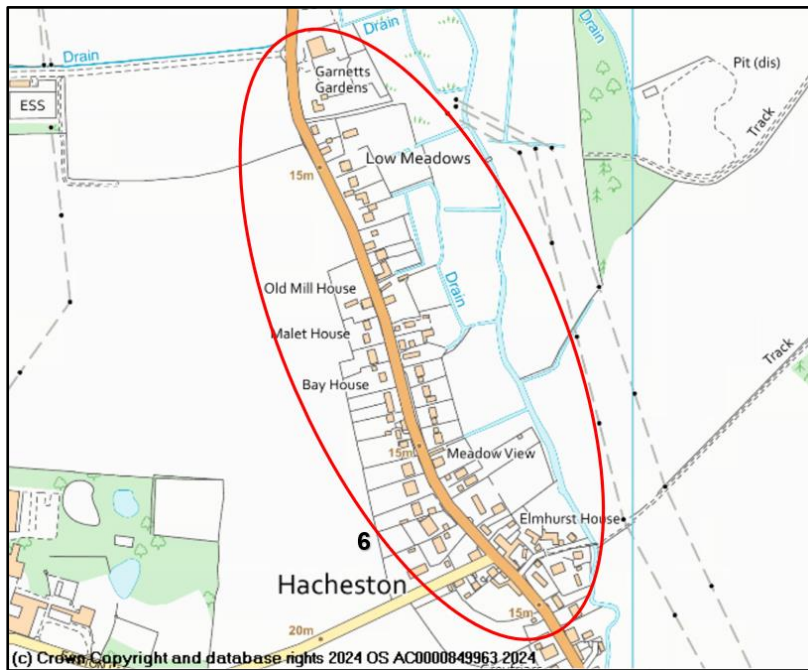


Figure 4. Parham investigation area map with locations



*Figure 5. Hacheston investigation area map*

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

A review of Suffolk County Council's highway reporting tool, local media reports, social media sources and Environment Agency records indicate that Parham and Hacheston have been impacted by flooding to varying extents in the past.

Suffolk County Council Highways records highlight previous flooding on The Street and Main Road Parham due to blocked highway gullies. There have been previous reports of highway flooding on North Green Road next to the culvert opposite Brick Lane.

In Hacheston there have been numerous reports of highway flooding around the Easton Lane and The Street junction area, some of which relate to issue with the roadside watercourse where the highway drainage discharges.

#### 4. Predicted Flood Risk

Several areas of Parham and Hacheston show significant flood risk from pluvial and fluvial sources.

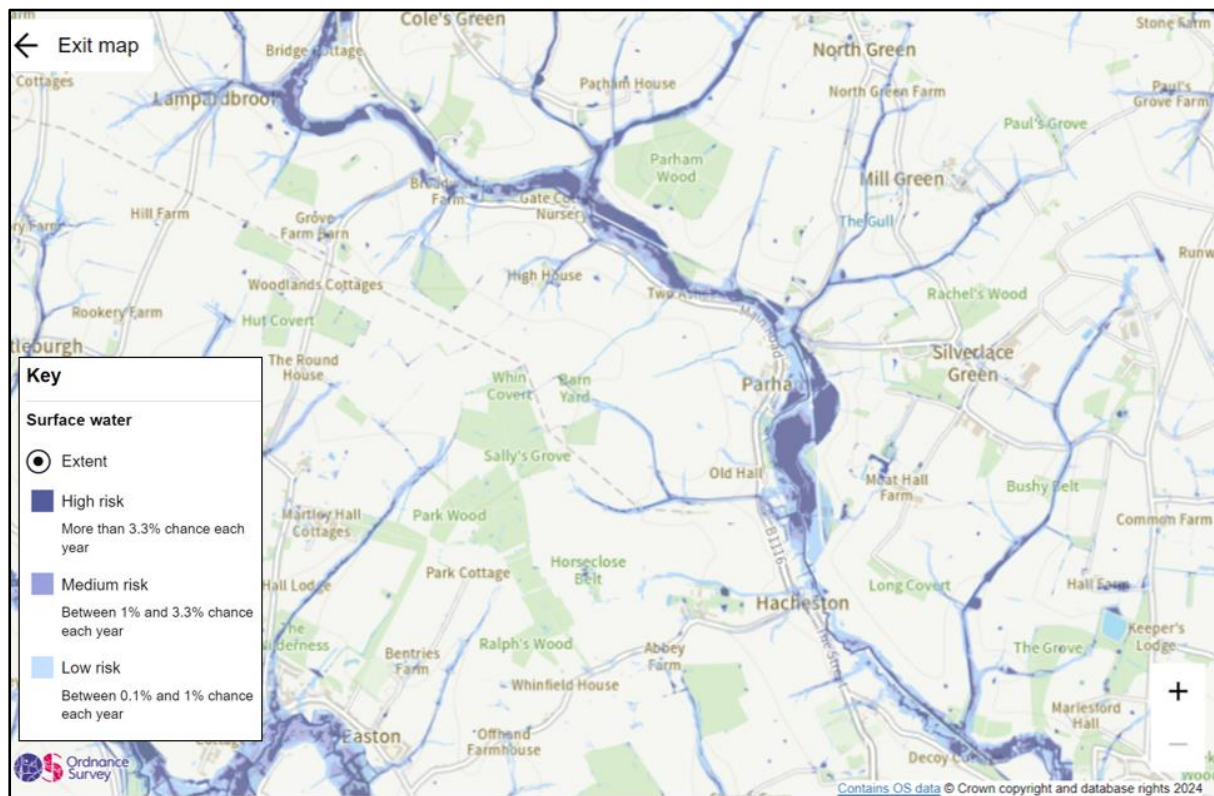
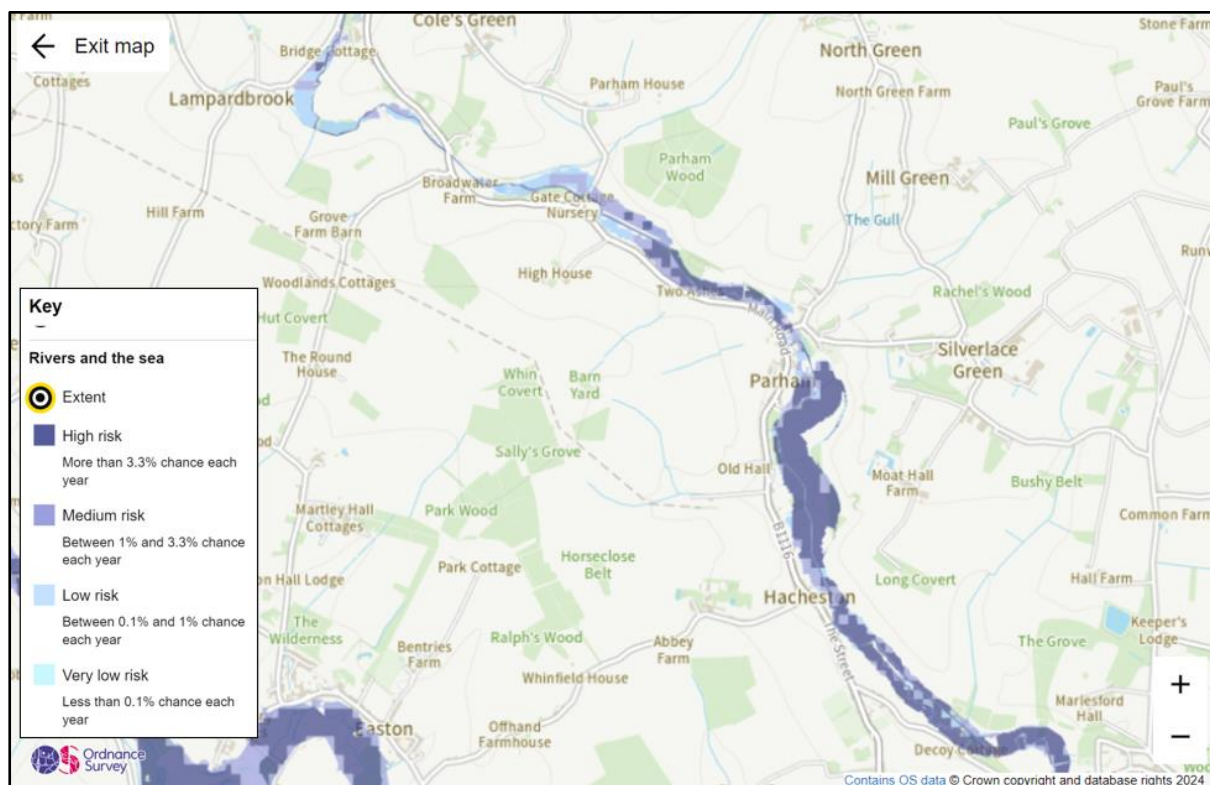


Figure 6. Predicted surface water flood risk

Figure 6 highlights the predicted pluvial (surface water run-off from surrounding land and ditches) flood risk in Parham and Hacheston, with multiple major flow paths coming into Parham from the northeast, north and west. Surface water flow paths come into Hacheston predominately from fields to the west.

There is significant predicted risk of surface water flooding on North Green Road, The Street and sections of Main Road northwest of Parham. These areas were affected by flooding during Storm Babet.



*Figure 7. Predicted flood risk from rivers and sea*

Figure 7 highlights the predicted fluvial (from designated main river and ordinary watercourses) flood risk in Parham and Hacheston. Fluvial flood risk in Parham and Hacheston is associated with the river Ore which passes through both villages.

In Parham, parts of Main Road and the lower end of North Green Road are predicted to be at medium to high risk of fluvial flooding. These areas were affected by flooding during Storm Babet. In Hacheston, the principal area at high risk of fluvial flooding is the fields and flood plain to the east of The Street (B1116).

## 5. Catchment characteristics

The villages of Parham and Hacheston are situated in a rural area dominated by arable agriculture. Parham straddles the river Ore and Hacheston is located on the west side of the river, which flows approximately northwest to southeast through the villages.

The low-lying nature of the two villages mean that during high rainfall events, considerable overland flows converge towards the villages and the river Ore. Overwhelmed drainage infrastructure and watercourses may be observed during these intense rainfall events.

Figure 8 shows the topography surrounding Parham and Hacheston with gradient changes across both. Both villages are lower than the surrounding land. The lowest points in Parham are along The Street and Main Road which are among the areas that were affected by flooding. The Street and eastern end of Easton Lane are among the lowest lying locations in Hacheston. These were identified as being some of the worst affected areas during Storm Babet.

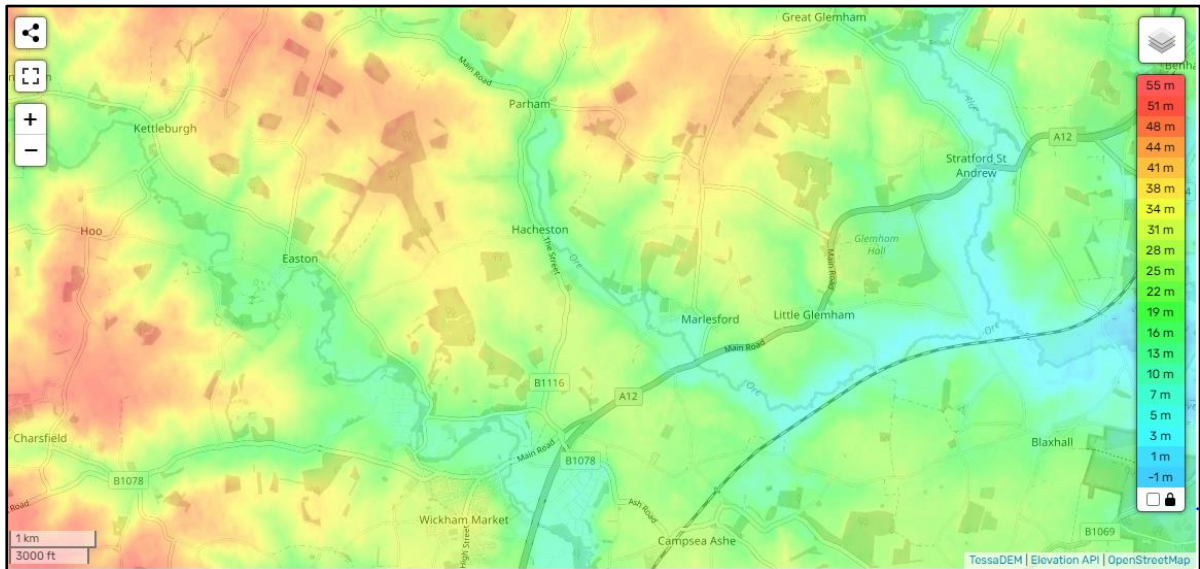


Figure 8. Parham, Hacheston and surrounding topography (TessaDEM as cited in topographic-map.com)

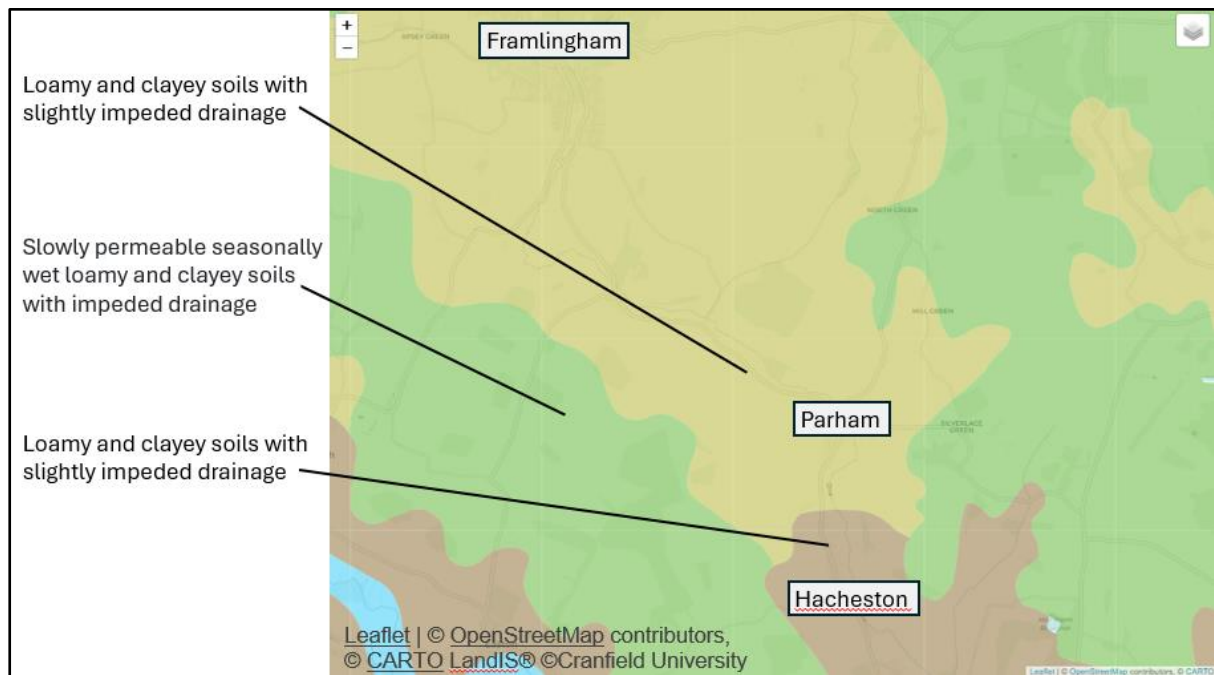


Figure 9. Soil map of catchment area (LandIS Soils)scapes)

The soils surrounding Parham and Hacheston are loamy and clayey with impeded or slightly impeded drainage, meaning that water permeates more slowly and surface water runoff is greater. With regards to soils, Parham and Hacheston are situated on alluvium, mostly sand and gravels with a mixture of clay and silts. The floodplain soils surrounding the river Ore usually have naturally high groundwater and tend to be wetter.

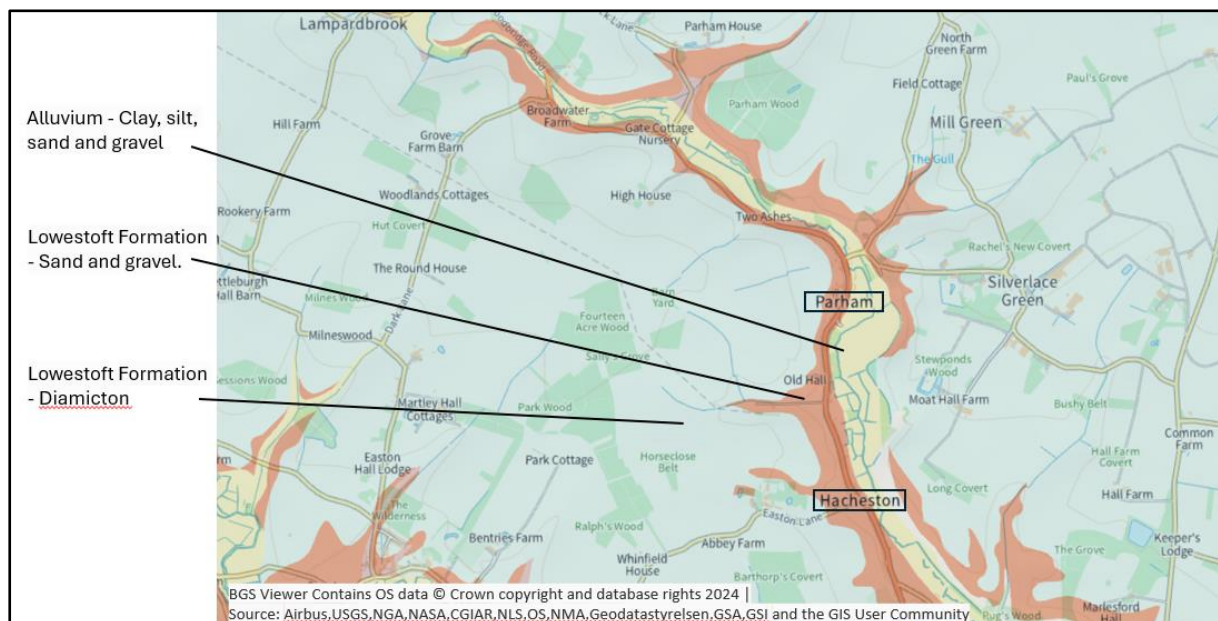


Figure 10. Superficial Geology (BGS Viewer)

Lowestoft Formation 'Diamicton' surrounds the villages of Parham and Hacheston 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, which reflects some of the reports from the Storm Babet event.

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, this makes Parham and Hacheston susceptible to extreme rainfall events and further emphasise the vulnerability of the villages to localised flooding.

## 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 weeks.

Storm Babet delivered significant rainfall in the Parham and Hacheston catchment between 19 and 20 October. The nearest rain gauge to Parham and Hacheston is Earl Soham. At the Earl Soham rainfall gauge there was 68.49mm of rain recorded over a period of 21hrs between 19 Oct 23:15 and 20 Oct 20:00. 35.34mm (almost half) of the rainfall was received in 3hrs between 08:30am to 11:30am 20 October.

The description of the flood events outlined below 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. Main Road B1116 (northwest of Parham)

Northwest of Parham, on Main Road, following heavy rainfall on the morning of the 20 October, internal flooding to property was caused by large amounts of surface water coming across the fields combined with overwhelmed drainage ditches. Internal flooding was reported from 10am onwards. Residents stated drainage ditches were overwhelmed by the volume of water and required maintenance. North of Main Road, the river Ore overtopped its banks and added to the spread of floodwater.



Figure 11. Surface Water flood risk on Main Road northwest of Parham

In Summary:

- Heavy rainfall on the morning of the 20 October caused large amounts of surface water to flow across the fields and drainage ditches towards properties of Main Road.
- The flooding may have been exacerbated by a lack of ditch maintenance.
- Sections of Main Road are shown to be at Medium to High risk of surface water flooding on the national predicted flood risk mapping.

LLFA recommended action(s):

- Residents to install Property Flood Resilience (PFR) via grant funded scheme.
- Investigate potential NFM projects to 'slow the flow' and attenuate water on overland flow paths (leaky dams, restoration of watercourses, etc.) south of Main Road northwest of Parham.
- Landowners to carry out appropriate watercourse maintenance to reduce flood risk as necessary as per their riparian responsibilities.

## 2. Hall Road

Intense rainfall caused surface water to flow across the fields and overwhelm the ditches from the north and east towards Hall Road. Internal flooding occurred from the rear as floodwaters spread into gardens and across the carriageway.

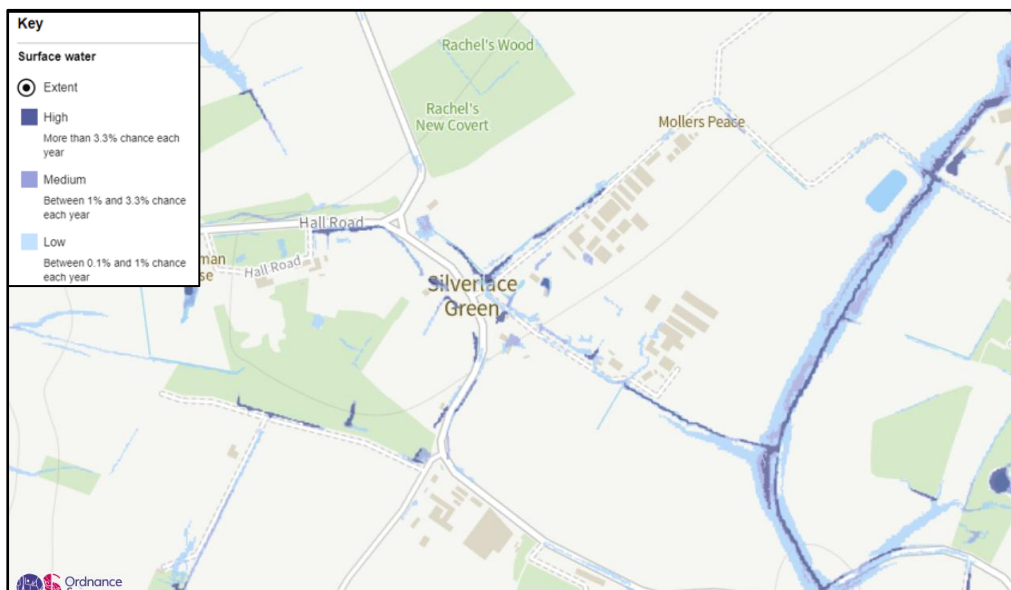


Figure 12. Surface Water flood risk on Hall Road

In Summary:

- Surface water from fields and ditches were overwhelmed causing water to enter property.
- Sections of Hall Road are at Medium to High risk of surface water flooding from the fields and ditches to the north and east.

LLFA recommended action(s):

- Residents to install Property Flood Resilience (PFR) via grant funded scheme.
- Landowners to carry out appropriate ditch maintenance to reduce flood risk as necessary as per their riparian responsibilities.

### 3. The Street, Brick Lane and North Green Road

Properties on The Street were impacted by surface water flooding originating as run off from fields and ditches as well as the highways to the east and northeast along North Green Road and Hall Road. Following heavy rainfall on the morning of 20 October, the surface water was carried along these flow paths into the village (see Figure 10) exceeding the capacity of drainage features. Properties on Brick Lane were impacted as the Gull watercourse along North Green Road, overtopped and added to the floodwater already on the road (see Image 4).

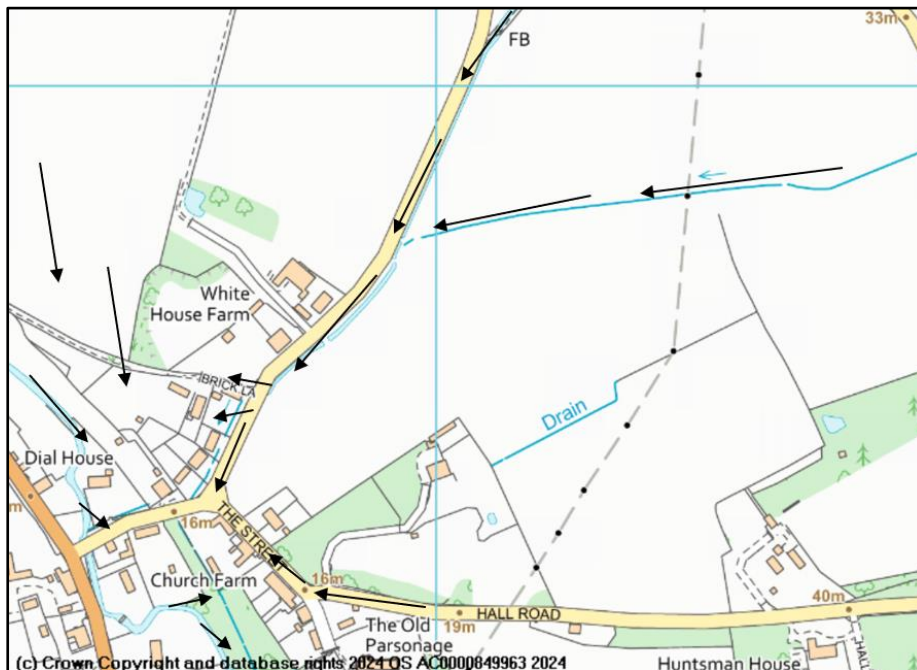
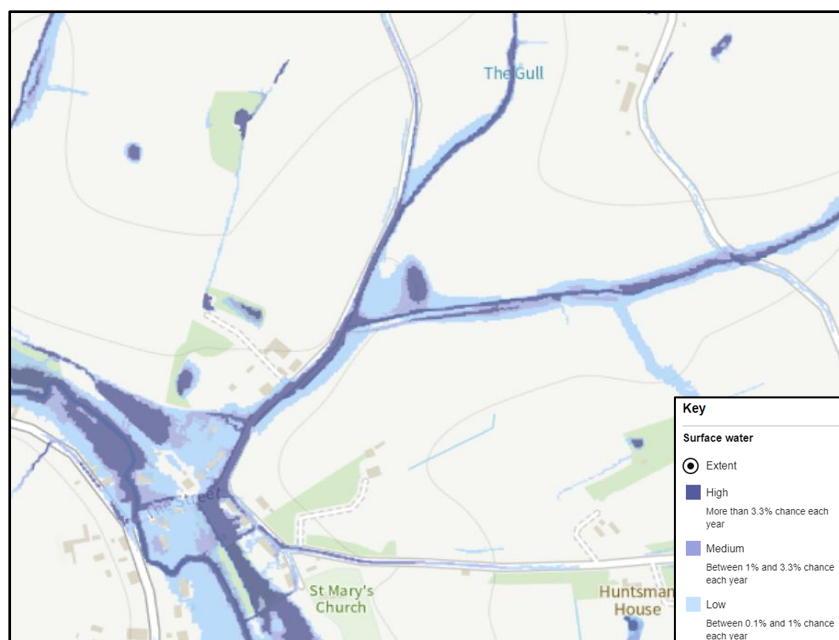


Figure 13. Approximate floodwater flow routes on The Street, Brick Lane and North Green Road

The conveyance of the floodwater in the channel was restricted by the presence of culverts and a build-up of silt immediately downstream of the road bridge opposite Brick Lane causing the floodwater to backup and overflow out of the channel. There was also a significant amount of surface water that travelled along the highway.

The surface water flows from the east and northeast then merged with the fluvial flood water coming from the overtopped river Ore at the lower end of North Green Road (see Image 1). Multiple properties reported internal flooding here as the river Ore breached the channel. The lower end of North Green Road was inundated in floodwater. The highway drainage system was completely overwhelmed with frequent

reports of gullies bubbling up and surcharging as the system could not cope with the volume of water coming into it.



*Figure 14. Surface Water flood risk on The Street, Brick Lane and North Green Road*

The observed extents of the floodwater in this area correlates closely with the predicted surface water flood risk maps, with pluvial flood risk categorised as being high along sections of The Street, Brick Lane and North Green Road.

Properties on North Green Road were impacted from flood water from the road and river Ore but also from the rear. It is reported that surface water flowed off the fields to the north, under the redundant railway line, into an ordinary watercourse. It was noted that the watercourse has historically been partially infilled and during the event, flood water flowed overland into property.

In Summary:

- Surface water from fields and ditches to the east and northeast flowed along the highway and flooded properties on The Street, Brick Lane and North Green Road.
- Conveyance of the floodwater in the channel was restricted by multiple culverts and a build-up of silt downstream of the road bridge causing the floodwater to backup.
- The surface water flows merged with the fluvial flood water coming from the overtopped river Ore at the lower end of North Green Road overwhelming the highways drainage infrastructure.

LLFA recommended action(s):

- Residents to install Property Flood Resilience (PFR) via grant funded scheme.

- Investigate potential NFM projects to 'slow the flow' and attenuate water on overland flow paths (leaky dams, restoration of watercourses, etc.) northeast and east of Parham.
- Investigate realignment of the old watercourse behind properties on north green road to reinstate connection with the river Ore.
- Silt buildup immediately downstream of the road bridge on north green road to be removed by SCC Highways.
- Report any observed blockages below the road bridge on north green road on the Suffolk Highways Online Reporting Tool.
- Landowners to carry out any watercourse / culvert maintenance to reduce flood risk as necessary as per their riparian responsibilities.
- Ensure the completion of highway drainage asset cyclic maintenance on North Green Road and The Street.

#### 4. Main Road, central Parham

The primary source of flooding in Parham was fluvial, with the Main Road being significantly impacted when flood water overtopped the banks of the river Ore. There was also surface water runoff from the east and west, caused flooding to multiple properties from the front and rear along Main Road (see Figure 15).

The overtopping of the watercourse occurred slightly north of the village and continued to breach the riverbank as it flowed through Parham. Flood water was on the highway and effectively created a second flow path along the road towards Hacheston and extended along the lower end of North Green Road toward The Street (see Image 2).

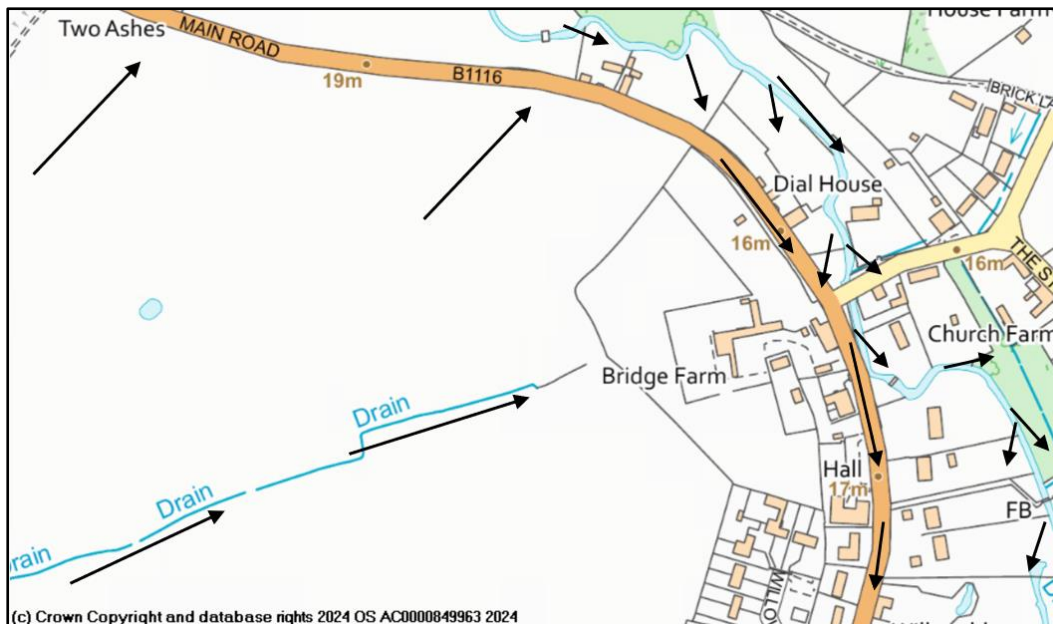


Figure 15. Approximate floodwater flow routes on Main Road, central Parham

There were reports of unmaintained or slightly obstructed sections within the river Ore. It is unlikely this significantly contributed to the flooding on the 20 October but

some localised maintenance of the channel has since occurred and flow improved through the village.

In Summary:

- Main Road in central Parham was significantly impacted by fluvial flooding from the river Ore.
- Surface water runoff from fields to the east and west contributed to the flooding.
- A large expanse of floodwater was on the highway and effectively created a second flow path along the road causing flooding to multiple properties from the front and rear.

LLFA recommended action(s):

- Residents to install Property Flood Resilience (PFR) via grant funded scheme.
- Investigate potential NFM projects to 'slow the flow' and attenuate water on overland flow paths (leaky dams, restoration of watercourses, etc.) northeast and east of Parham.
- Landowners to carry out any watercourse / culvert maintenance to reduce flood risk as necessary as per their riparian responsibilities.
- Ensure the completion of highway drainage asset cyclic maintenance on Main Road, Parham.

## **5. Main Road and Corrance Close**

The primary source of flooding suffered on this section of Main Road and Corrance Close was pluvial flooding from the adjacent fields to the west. Surface water flows coming across the fields flowed through and around properties from the back on the western side of Main Road and spilled onto the highway impacting Corrance Close from the front. The whole of the Corrance Close estate was described as being externally flooded by residents.

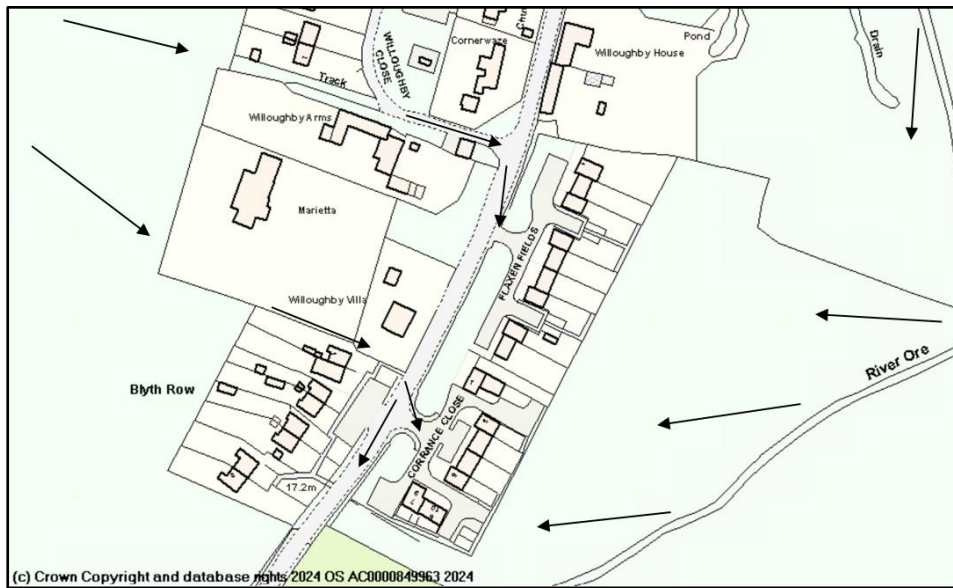


Figure 16. Approximate floodwater flow routes on Main Road and Corrance Close

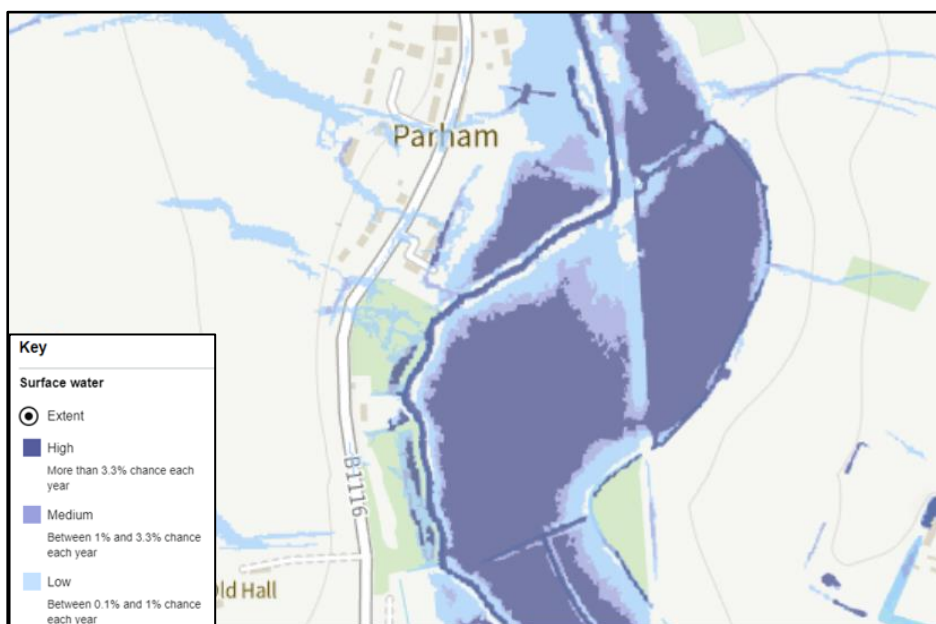


Figure 17. Surface Water flood risk on Main Road and Corrance Close

The observed floodwater flow paths and flood extents closely match the national predicted surface water flood risk mapping. Later in the day there was also fluvial flooding from the River Ore which impacted properties externally from the rear as the river levels continued to rise.

In Summary:

- Surface water flows across the fields to the west of Main Road impacted properties to the rear, flowed across and along Main Road and flooded Corrance Close from the front.
- Fluvial flooding from the River Ore impacted properties externally from the rear, as the river levels continued to rise later in the afternoon.

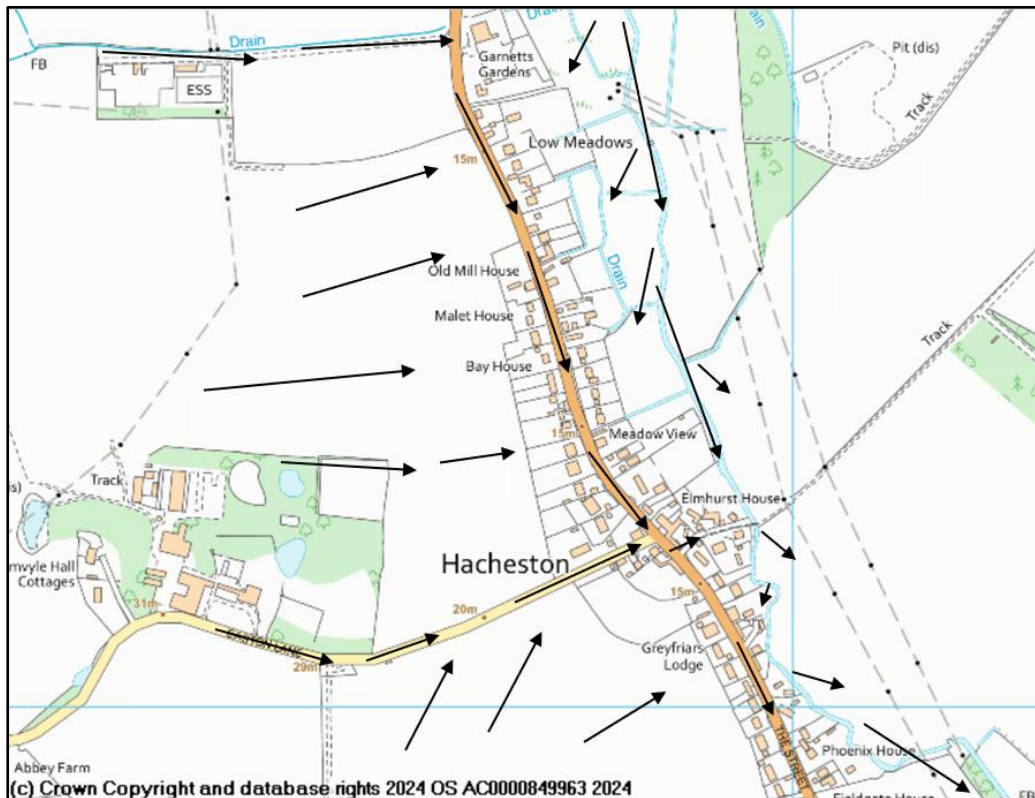
LLFA recommended action(s):

- Residents to install Property Flood Resilience (PFR) via grant funded scheme.
- Investigate potential NFM projects to 'slow the flow' and attenuate water on overland flow paths (leaky dams, restoration of watercourses, etc.) west of Parham.
- LLFA & East Suffolk Local Planning Authority to investigate the flooding on Corrance Close to fully understand the source and or if any possible flooding issues weren't accounted for in the development. Landowners to carry out any watercourse maintenance to reduce flood risk as necessary as per their riparian responsibilities.
- Ensure the completion of highway drainage asset cyclic maintenance on Main Road, Parham.

## **6. Hacheston**

Following prolonged heavy rainfall on the morning of 20 October, by midday, the majority of the floodwater impacting Hacheston was from field run off to the west of the village (see Images 5 and 6). The surface water flowed along multiple flowpaths down the gradient from the higher fields west of Hacheston, towards properties on The Street.

Floodwater flowed across fields to the west before emerging onto the carriageway, pouring through hedges and roadside verges. One of the issues reported by residents was the lack of ditches present along the lower boundaries of the fields to intercept and direct water away from housing and connect with the river behind. Many properties were flooded from the front as floodwater on the highway flowed onto driveways situated at a lower elevation and across dropped kerbs.



*Figure 18. Approximate floodwater flow routes in Hacheston*

Large extents of the carriageway on The Street were submerged by floodwater as the existing drainage assets were overwhelmed by the volumes of water flowing from the fields and roads to the west. Flooding to property was exacerbated by vehicles driving through flood water, creating a bow wave that flowed into properties.

Easton Lane acted as a significant flowpath for the runoff from the fields, carrying floodwater down toward properties at the southern end of The Street. It was reported that some land drains from the field to the south are not intercepted and instead discharge directly onto Easton Lane, contributing to the large volume of floodwater. It has also been reported that the highway drainage gullies on Easton Lane and next to the junction with The Street are frequently blocked with silt carried by the field run off, this may have contributed to the surface water pooling on the carriageway and inhibited drainage in the early stages of Storm Babet.

Later in the day, the river Ore through Hacheston exceeded its capacity as it was overwhelmed by the floodwaters from upstream. The river Ore overtopped across the surrounding fields and flowed towards gardens and the rear of properties, effectively surrounding homes in floodwater. Water levels in the Ore peaked at about 6pm. The river Ore remained well above previous peak levels for over 24 hours.

#### In Summary:

- The majority of the floodwater impacting Hacheston was from field run off to the west of the village.
- Floodwater flowed across the fields before emerging onto the carriageway, pouring through hedges and roadside verges.
- Many properties on the Street were flooded from the front.
- Easton Lane acted as a significant flowpath for the runoff from the fields west of The Street.
- Later in the day the river Ore overtopped its banks and flowed toward gardens and the rear of properties, surrounding homes in floodwater.

#### LLFA recommended action(s):

- Residents to install Property Flood Resilience (PFR) via grant funded scheme.
- Investigate potential NFM projects to 'slow the flow' and attenuate water on overland flow paths (leaky dams, restoration of watercourses, etc.) west of Hacheston.
- Landowners to investigate options around installing new boundary ditches / other surface water mitigation measures in the fields west of the Street and south of Easton Lane.
- Landowners, with support from relevant authority to investigate options to re-connect surface water flows from the west to the main river Ore.
- Landowners to carry out any watercourse / culvert maintenance to reduce flood risk as necessary as per their riparian responsibilities.
- Ensure the completion of highway drainage asset cyclic maintenance on Easton Lane and The Street.
- Investigate if there is any potential for additional highway drainage assets on Easton Lane to manage surface water flows.

## Images of Flooding

Photos included in the report have been submitted via a range of sources, including customer reports, community information and by Risk Management Authorities. The use of photos has been included in good faith to support the investigation and provide further context of the flood event.



*Image 1. Lower end of North Green Road*



*Image 2. Central Parham*



*Image 3. Parham highway flooding*



*Image 4. Highway flooding outside Brick Lane*



*Image 5. Surface water flows from fields west of Hacheston*



*Image 6. Surface water runoff opposite Garnett's Garden Centre, Hacheston*

## 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.

<b>Risk Management Authority</b>	<b>Relevant Flood Risk Function(s)</b>
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
Internal Drainage Board (IDB) East Suffolk Water Management Board	Supervising land drainage and flood defence works on ordinary watercourses
East Suffolk District Council	Local Planning Authority (LPA) & Asset Owner
<b>Non-Risk Management Authority</b>	<b>Relevant Flood Risk Function(s)</b>
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.
Parham and Hacheston Parish Councils	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	Ongoing
Highway gullies throughout Parham and Hacheston were inspected and cleansed in November 2024. Further gully cleansing is programmed for March 2025.	Suffolk County Council Highways Authority	Complete and ongoing.
Project to relocate the dropped kerb outside flooded property, Hacheston	Suffolk County Council Highways Authority	Complete. Working with landowners, works have been completed to relocate dropped kerbs further north and create an exceedance path towards a watercourse, directing water away from property.
Following a thorough review of the coverage of our Flood Warning Service, and learning from the impacts of Storm Babet, we have made changes to the spatial extent of our Flood Warning and Flood Alert Areas.	Environment Agency (EA)	We have expanded the area covered by our Flood Warning Service in the Ore catchment, to ensure that all properties which were reported as impacted during Storm Babet from main river sources are now within the area extents. Many more customers can now sign up to receive Flood Alerts and Flood Warnings.
Engagement with riparian landowner on removal of a tree causing a blockage in the watercourse.	Environment Agency (EA)	Ongoing
EA information letters have been sent to main river riparian landowners	Environment Agency (EA)	Complete

in Parham and Hacheston.		
Identification of several possible NFM opportunities upstream of Parham and Hacheston.	Community and local landowners	Ongoing
Ensure riparian landowner responsibilities are understood with regard to watercourse management.	SCC LLFA	SCC published " <a href="#">Flood Smart Living</a> " online and hard copy guide to increasing flood resilience for residents, landowners and communities, December 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 Parham and Hacheston. 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 (June 2025)
<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	Parham & Hacheston Parish Councils	6 months	<p><b>Ongoing.</b> Parham Parish Council has agreed to create an Emergency Plan and will liaise with JEPU in this regard.</p> <p><b>Ongoing.</b> Hacheston Parish Council have agreed to make a community emergency plan.</p>
Maximise the take up of the £5k PFR Grant currently available to residents before the April 2025 deadline	Residents / SCC LLFA	4 months	<p><b>Complete</b></p> <p>DEFRA PFR Grant has now closed for new applications. Installation of PFR measures on approved applications has been extended to December 2025.</p> <p>Further information on PFR measures can be found within SCC published "<a href="#">Flood Smart Living</a>" handbook</p>

Understand the annual event probability of the rainfall & river flow across the region	EA	6 months	<p><b>Complete</b></p> <p>The Environment Agency have completed a piece of work which looked to establish the annual probability of Storm Babet and Storm Ciaran. This short report summarises the findings of a hydrological study which looked at the context, magnitude and rarity of the rainfall and river flows during these two events. You can read this information in the <a href="#">Autumn 2023 East Anglian Flood Hydrology Investigation Report</a>.</p>
Ensure the completion of highway drainage asset cyclic maintenance across Parham. Key areas include The Street, North Green Road and Main Road	SCC Highways Authority	Annually	<p>Ongoing. Routine cleansing of the gullies will be completed in line with the set cycles (annual or biennial).</p> <p><b>The Street</b> Works are programmed for July 2025 to clear the ditch south of Church Farm, addressing silt buildup that has partially buried the existing outfall pipe. The associated culvert is also scheduled for clearance. All other assets within this network were confirmed operational during the last visit in March 2025</p> <p><b>North Green Road</b> No recorded issues currently exist within the network. Routine biennial cleansing of all gullies was completed in November 2024.</p> <p><b>Main Road</b> Jetting operations were concluded on five assets that</p>

			were previously non-operational in May 2025. The defects preventing their functionality have been resolved, resulting in the network now being fully operational.
Ensure the completion of highway drainage asset cyclic maintenance across Hacheston. Key areas include The Street and Easton Lane	SCC Highways Authority	Annually	<p><b>Ongoing:</b></p> <p>Routine cleansing of the gullies will be completed in line with the set cycles (annual or biennial).</p> <p><b>The Street</b></p> <p>Following jetting works; most of the drainage network is clear. However, two issues persist: concrete debris in gully 60071317 is reducing its capacity, and a structural defect 18.2m downstream of gully 60071354's pipe channel affects upstream gully 60071353. Further investigation and repairs are being organised to fully restore network functionality.</p> <p><b>Easton Lane</b></p> <p>Following jetting in May 2025, a previously slow-running gully near Whitefield House, whose outfall was buried in the adjacent ditch, is now fully operational, with no further issues within the network.</p>
Utilise the Community Self Help scheme to undertake minor maintenance activities and deployment of flood warning signs	Parish Councils / SCC Highways Authority	6 -12 months	<p><b>Complete:</b></p> <p>Update from Parham Parish Council: The Parish Council already considered joining this scheme but decided not</p> <p>Update from Hacheston Parish Council: The Parish Council have signed up to the Community Self-help</p>

			Scheme and hope to get a volunteer on the required training later this Summer
Riparian Owners to carry out roadside ditch and or watercourse maintenance to reduce flood risk as necessary as per their riparian responsibilities	Landowners/Residents	6 - 12 months	<p><b>Complete:</b></p> <p>SCC published "<a href="#">Flood Smart Living</a>" online and hard copy guide to increasing flood resilience for residents, landowners and communities, December 2024</p> <p>Update from Parham Parish Council: We have been helping to advise residents of their riparian responsibilities and are pleased to report that the response has been good – several residents have been maintaining their trees and clearing vegetation from near watercourses adjacent to their properties.</p>
Report any observed blockages below the road bridges over the river and watercourses on the Suffolk Highways Online Reporting Tool	Landowners, EA, IDB, SCC Highways	N/A	<p><b>Update from the Environment Agency:</b> Report to EA of fallen tree in Parham, engaged with landowner and has now been removed. Report of material being deposited on floodplain in Hacheston, site</p> <p><b>Update from Suffolk Highways:</b> The Main Road culvert was investigated and confirmed to be clear, with no flow obstructions.</p>
<b>Medium Term Actions</b> (e.g. longer planning timescales and potential need to source funding but potential for greater impact)			
Explore potential NFM projects to 'slow the flow' and attenuate water on overland flow paths affecting The Street, North Green Road, Main Road (Parham), Easton Lane and The Street (Hacheston). E.g. leaky dams, woody debris	Landowners, supported by relevant authority, resource dependant (SCC LLFA, EA, IDB)	12 - 24 months	<p><b>Ongoing:</b></p> <p>Parham Parish Council have been successful in securing funding through the East Anglia NFM Local Levy Approach. The funding will support the delivery of three new features designed to 'slow the flow' and mitigate flooding in Parham.</p>

installation, restoration of watercourses			
LLFA & LPA to investigate the flooding on Corrance Close to fully understand the source and or if any possible flooding issues weren't accounted for in the development.	East Suffolk District Council Local Planning Authority, SCC LLFA	12 - 24 months	No updated expected as yet
Remove the buildup of silt at the downstream end of the road bridge over the Gull watercourse on north green road	SCC Highways Authority	12 - 24 months	<b>Ongoing</b> – There is a project that is currently being designed to repair the retaining wall that supports the edge of the highway at the downstream end of the culvert - as part of these works we also plan to undertake some localised clearance of silt alongside the retaining wall.
Explore potential NFM measures which aim to attenuate water in the upper catchments e.g. storage ponds, wetland areas	Landowners, supported by relevant authority, resource dependant (SCC LLFA, EA, IDB)	12 - 24 months	<b>Ongoing:</b> Parham Parish Council have been successful in securing funding through the East Anglia NFM Local Levy Approach. The funding will support the delivery of three new features designed to 'slow the flow' and mitigate flooding in Parham.
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	East Suffolk District Council Local Planning Authority, SCC LLFA	12 months+	Update from East Suffolk District Council Local Planning Authority - We are not aware of any Neighbourhood Plan activity in Parham or Hacheston. Work on a new East Suffolk Local Plan is anticipated to begin in 2025 with adoption by 2029.

Investigate options to re-connect surface water flows from the fields west of Hacheston to the main river Ore	Landowners, supported by relevant authority, resource dependant (SCC LLFA, EA )	12 - 24 months	No updated expected as yet
Investigate if there is any potential for additional highway drainage assets on Easton Lane to manage surface water flows.	SCC Highways Authority	12 - 24 months	No updated expected as yet
<b>Long Term actions</b> (significantly longer timescale and budget required with potentially greater positive impact)			
Deliver improvements to highway drainage network to manage surface water flows if investigation works suggest it is beneficial and viable	SCC Highways Authority	TBC	No updated expected as yet
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 updated expected as yet
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 updated expected as yet

## Approval

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

Reviewer	Date of Review
Ellie Coleby	31/07/2025

## 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

