Section 19 Flood and Water Management Act 2010

Wetheringsett-cum-Brockford Flood Investigation – Storm Babet 2023

	Name	Date
Report Author	John Jousiffe	
Responsible Officer:	John Jousiffe	
Checked by:	Ellie Beecroft	17/09/2024
RMA Review:		08/10/2024
Approved by:	Matt Hullis	08/11/2024
Date Published		11/11/2024
Date Report Closed		

Contents

Executive Summary

Storm Babet caused significant disruption to communities across Suffolk between 18th - 21st October 2023. Wetheringsett-cum-Brockford, a collection of small hamlets, was significantly impacted, with over 20 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.

Wetheringsett-cum-Brockford is located in an area 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 key impacted areas are low-lying, with multiple flood water flow paths converging 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 Wetheringsett-cum-Brockford 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 the village 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 Wetheringsett-cum-Brockford 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. 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*

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 in a short space of time 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 average rainfall in East Anglia between July and October 2023 against the historical average monthly rainfall.

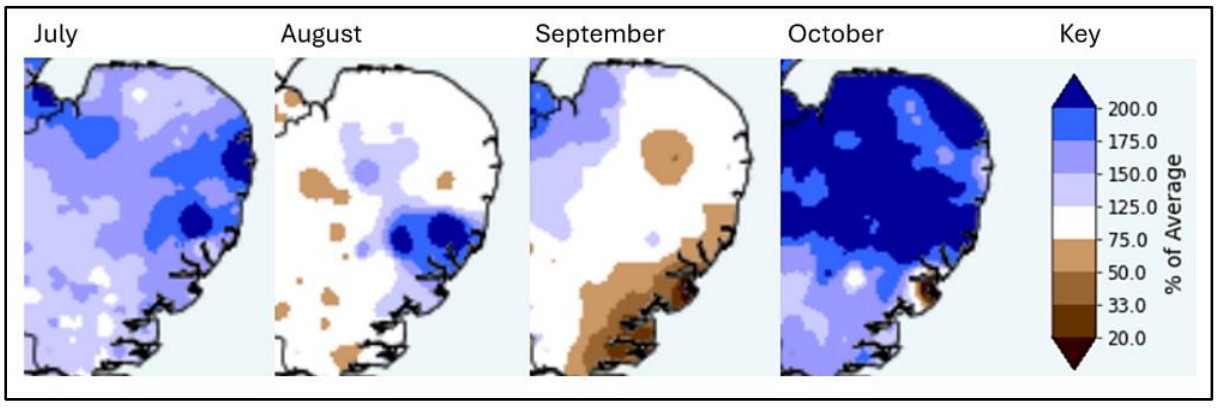

Figure 1 - Average rainfall in East Anglia between July and October 2023 as a percentage of the historical average monthly rainfall

The following report acknowledges that October 2023, and particularly 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 regular 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

Wetheringsett-cum-Brockford is a Parish in the Mid Suffolk district of East Anglia and contains the village of Wetheringsett together with the hamlets of Blacksmiths Green, Broad Green, Brockford Street (located on the A140), Brockford Green, Knaves Green, Pages Green, Park Green, Pitman's Corner, Wetherup Street and White Horse Corner.

On the 20th of October 2023, Storm Babet resulted in, significant internal flooding to property and infrastructure. The following report is focused on Wetheringsett-cum-Brockford and the surrounding areas and will discuss the probable flooding sources, the observed flow paths through the community, and the receptors which have been affected. The Parish was significantly impacted with over twenty properties reporting internal flooding. The main affected areas were Brockford Street which has the river Dove running south to north through the community and Wetheringsett, approximately 1km to the east of the A140, although some localised flooding also occurred in Station Road, Park Green and Weatherup Street (ranging between 1.5 and 3km's south of Wetheringsett).

Flood water was described as coming from several sources including, surface water from surrounding land (pluvial), the overtopping of watercourses (fluvial) and overwhelmed sewage and drainage systems. For the purpose of this report the term 'flood water' may be used to describe all types of flooding.

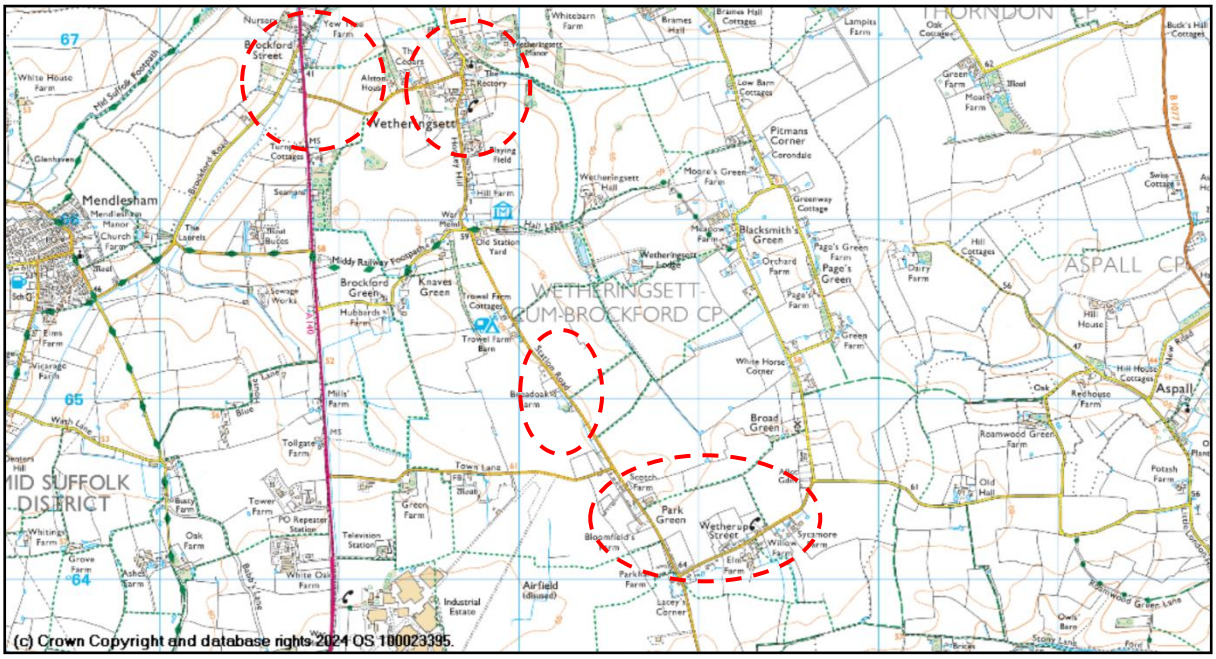

Figure 2 - Investigation Area Map

Due to the dispersed nature of flooding, the affected areas have been categorised into four distinct zones (figure 2). The zones are as follows:

1. Brockford Street (figure 3)

2. Wetheringsett (figure 4)
3. Station Road (figure 5)
4. Park Green and Wetherup Street (figure 6)

Figure 3 – Investigation area (Brockford Street)

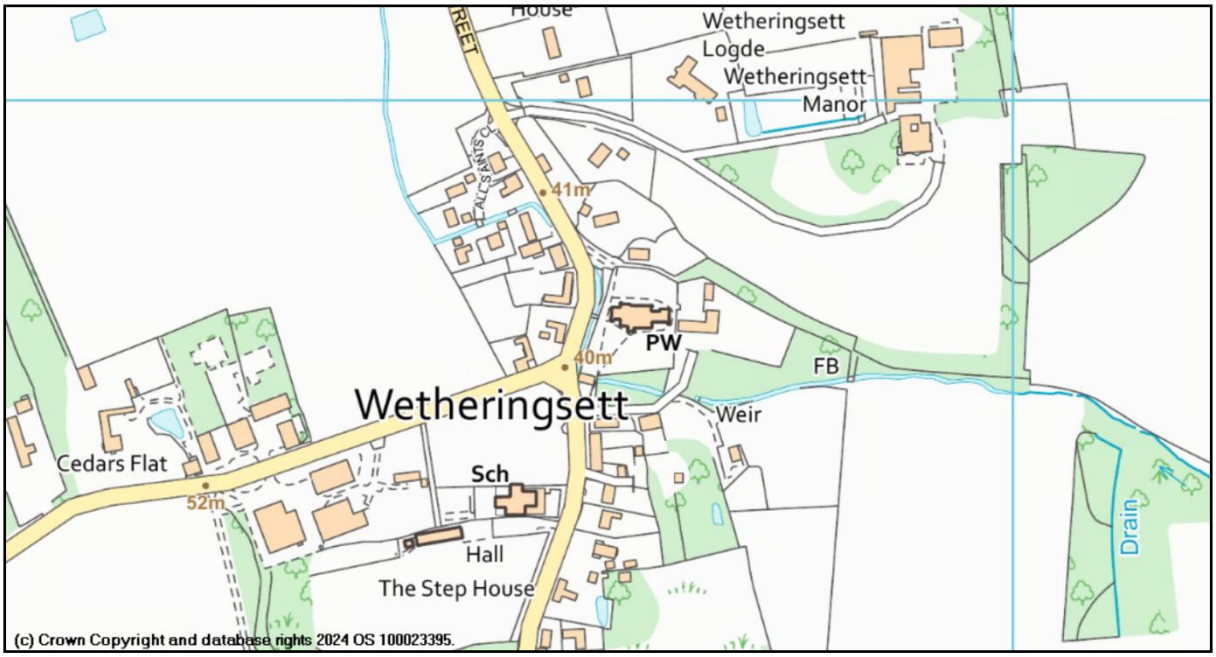

Figure 4 – Investigation Area (Wetheringsett)

Figure 5 – Investigation area (Station Road)

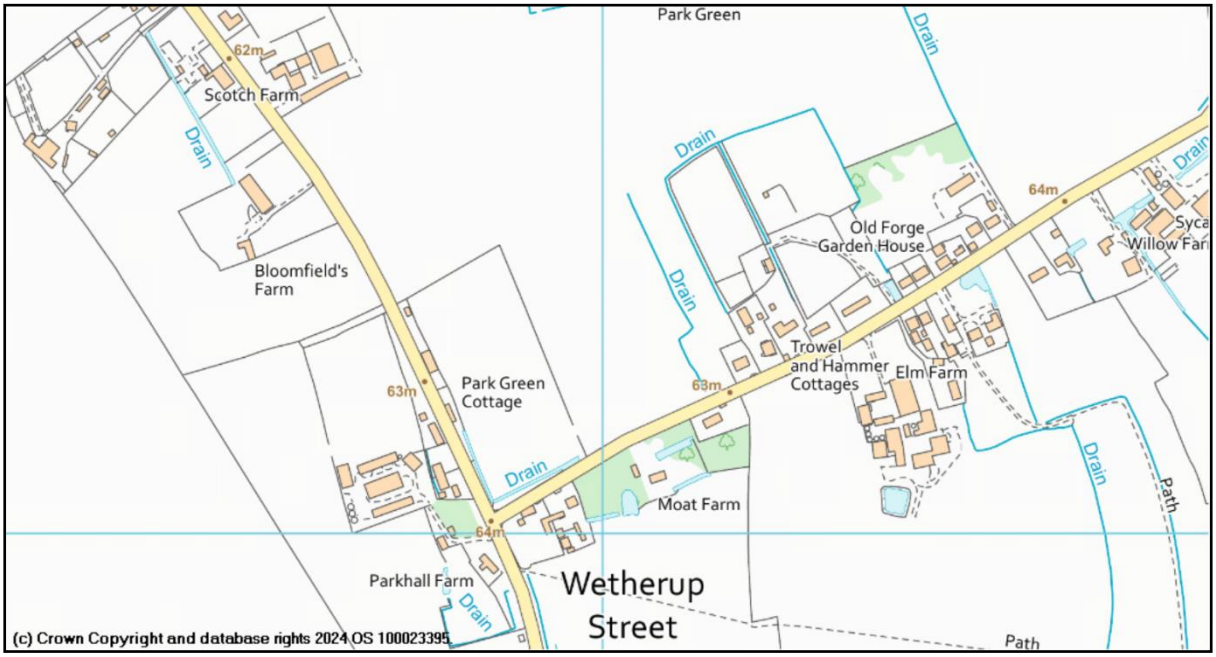

Figure 6 – Investigation area (Park Green and Weatherup Street)

3. Records of any historical flooding

The Parish of Wetheringsett-cum-Brockford has had few reported incidents of internal property flooding prior to Storm Babet. However, reports concerning highways drainage or other infrastructure has been reported in the recent past, with known drainage infrastructure issues being reported and investigated in the last year.

Between the 11th to 15th October 2023 a cluster of low-pressure systems passed across the area, resulting in runoff generation from saturated catchments. Eight properties are recorded to have flooded in The Street, Brockford Street.

4. Predicted Flood Risk

Wetheringsett-cum-Brockford is identified as being at significant flood risk from more than one source of flooding, and this is demonstrated in the following mapping information.

Fluvial flood risk, described as water overflowing out of watercourses, is evident in the area. The River Dove (designated main river) runs through the Brockford Street area, flowing south to north. There is a significant watercourse that flows through Wetheringsett, before discharging into the River Dove, just north of the village. The map shows significant flood risk to central Wetheringsett and Brockford Street from the watercourses, in particular where the river crosses the A140, northwest Wetheringsett and the southern end of Brockford Road, see figure 7.

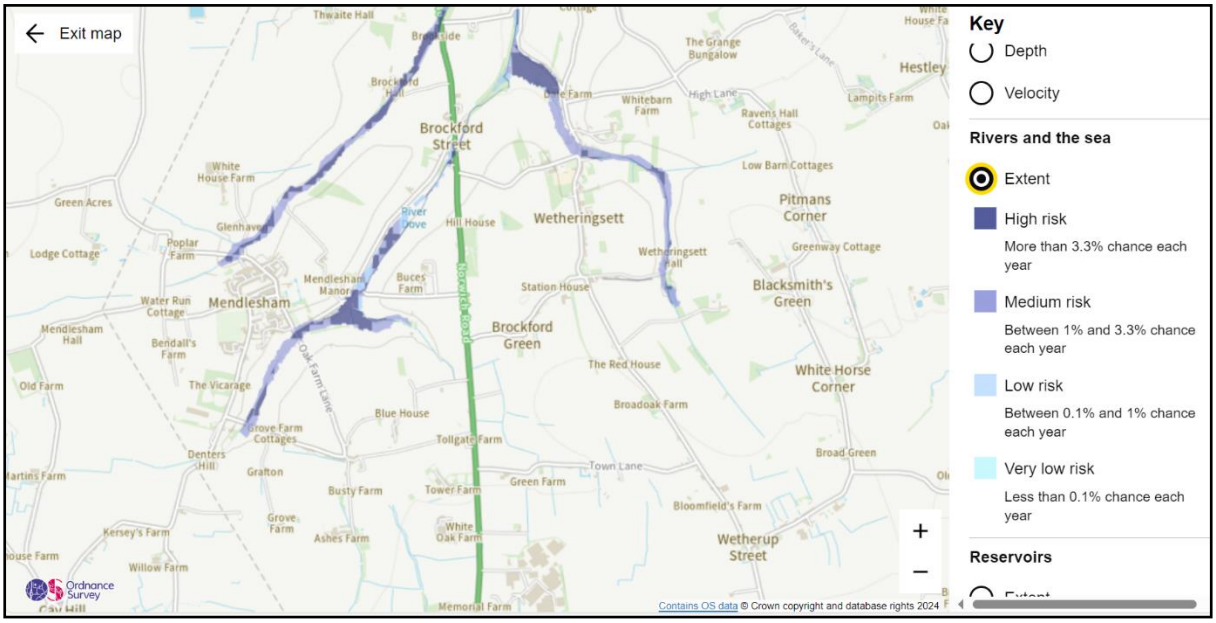

Figure 7 – Fluvial Flood risk map

The catchment is also at risk from pluvial flood risk (surface water run-off from surrounding land). As seen in figure 8, the flow paths roughly following the line of existing watercourses but also identifies changes in topography and localised low points of risk. Areas include Wetherup Street and Station Road.

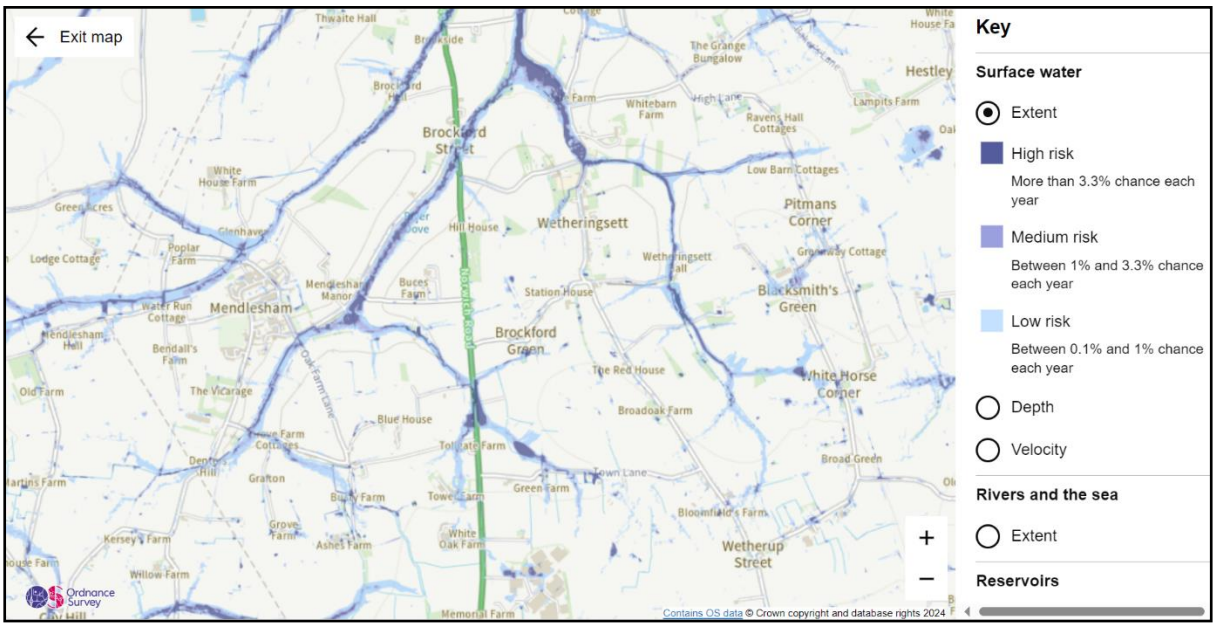

Figure 8 – Surface water flood risk map

There is currently no predicted risk from reservoirs or the sea in this area, and although groundwater has been mentioned as a potential source of flooding in some reports, Environment agency data suggests that Groundwater flooding in this area is very unlikely. It is therefore assumed flood water from Pluvial or Fluvial sources is most likely, with water entering properties via airbricks or gaps underneath the floor.

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.

Brockford and Wetheringsett are located towards the upper catchment limit of the extensive Flood Alert area of “The River Waveney from Diss and the River Dove to Ellingham, including Bungay”. This flood alert area is triggered from rising river levels reaching a trigger threshold from the issuing gauges at either Diss or Billingford on the main River Waveney.

On 20th October 2023, a flood alert was issued at 11:44am. This flood alert was frequently updated, although remained in force until it was removed on 17th November 2023 at 11:20am. Station Road and Wetherup Street are not covered by a flood alert.

Currently this area is not covered by a flood warning owing to the location at the upper extent of the river catchment. There is no upstream telemetry which could be used to enable the Environment Agency to issue a flood warning with enough lead time to

enable a response. It is simply not currently possible to provide advanced notice of likely flooding here.

5. Catchment characteristics

Areas of Wetheringsett and Brockford Street are significantly lower lying than the surrounding topography to the east, south and west, causing all flow paths in the area to converge in these low spots before continuing their flow north towards the Waveney River (figure 9).

As shown in figure 8, there are several flood flow paths which travel from south to north, flowing through Brockford Street and Wetheringsett. These areas are low-lying and noticeably shallower than the surrounding catchment and will be expected to be the primary locations to experience flooding during high rainfall events.

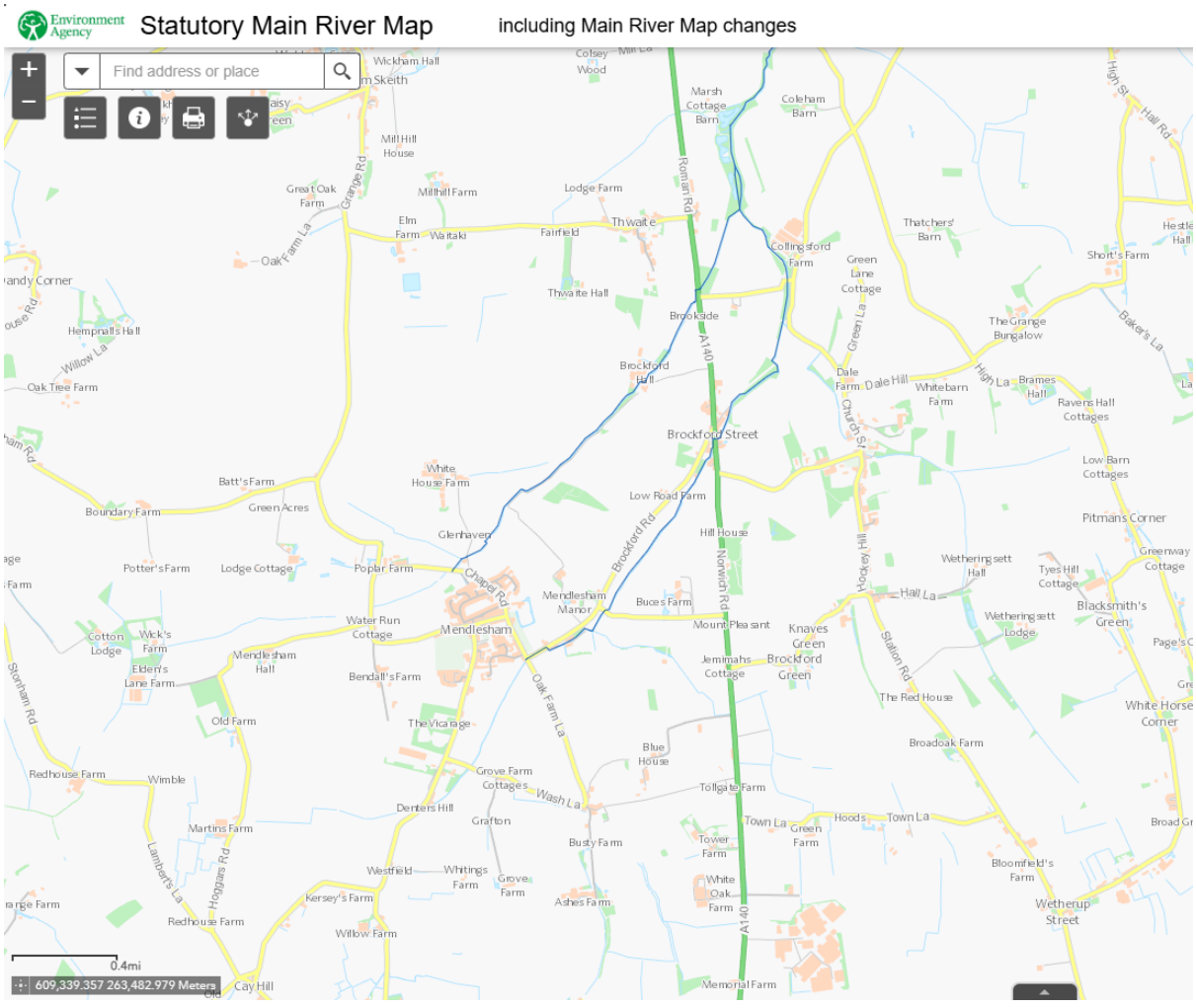

Figure 9 - Statutory main river map

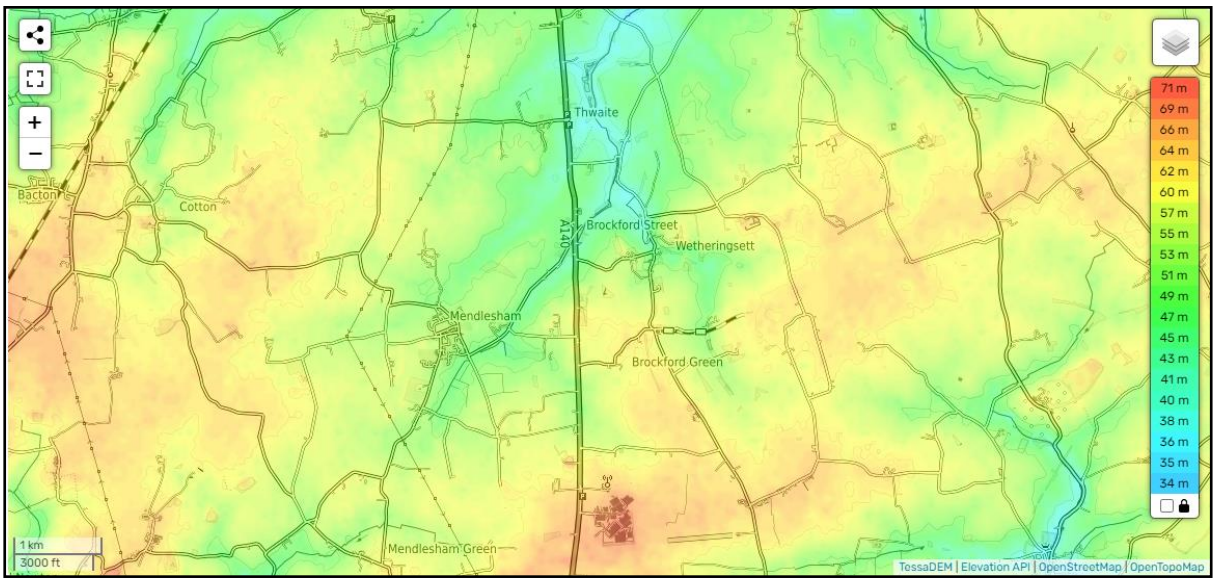

Figure 10 – Topographic map

The superficial geology in the area is primarily ‘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. This soil generally has a low permeability meaning water will tend to flow off it before it can infiltrate, which reflects the reports collected during Storm Babet.

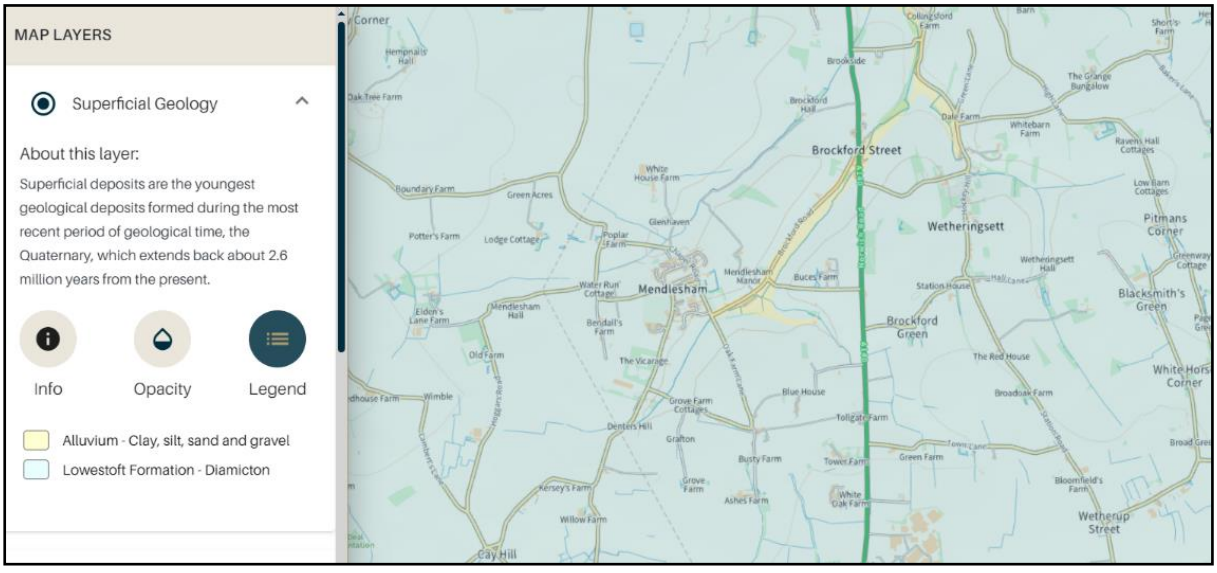

Figure 11 - Superficial Geology

The soils in the area are primarily comprised of slowly permeable seasonally wet loamy and clayey soils with impeded drainage (see figure 12). This matches descriptions from the event of significant levels of surface water runoff and limited infiltration into the ground.

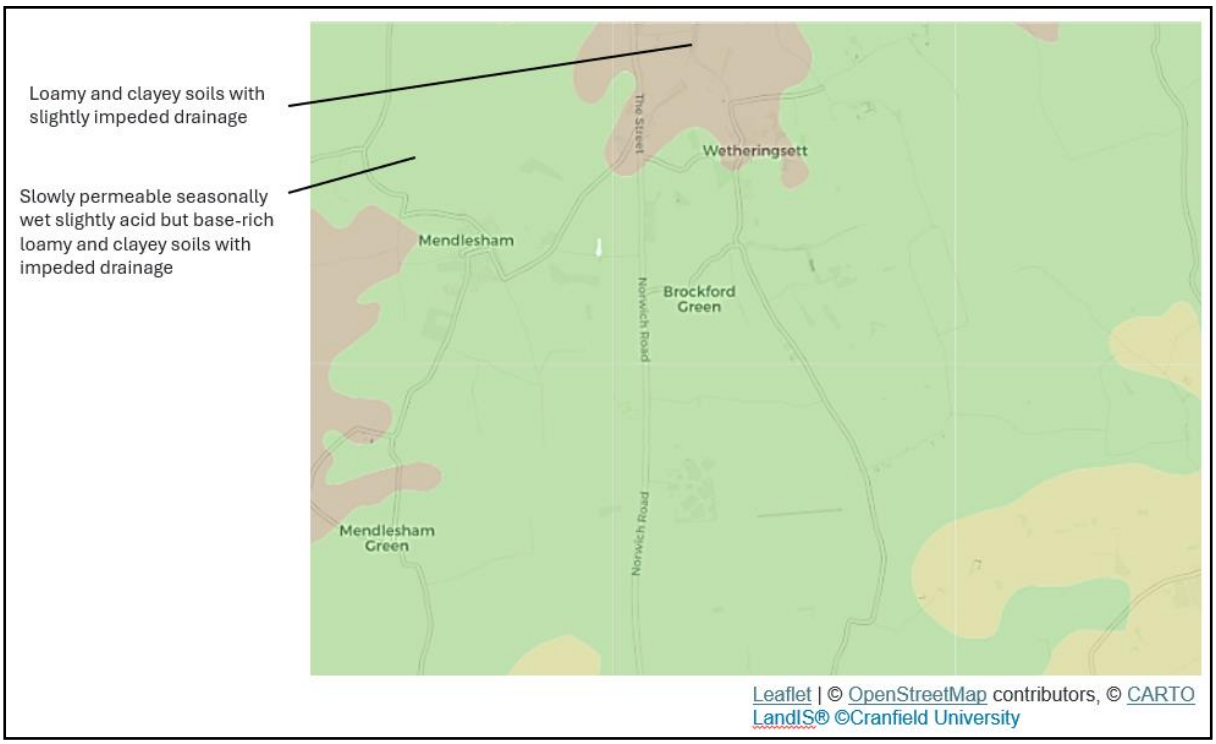

Figure 12 - Area map of soil composition

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

Wetheringsett-cum-Brockford is susceptible to multiple sources of flooding due to the low-lying topography and proximity to large watercourses and rivers. The characteristics of the catchment, coupled with the saturated conditions from a very wet October and significant rainfall experienced during Storm Babet, resulted in significant flooding of residential properties, roads and infrastructure.

An Environment Agency rain gauge in Saxmundham (approx. 16 miles east of the A140) recorded 44mm of rainfall in a 12-hour period, where the average rainfall is 60mm for the entire month of October according to Met Office sources. (Met Office, 2020). Stradbroke gauge recorded 50.15mm in 18 hours, with a critical 4-hour period receiving over 50% of the rainfall at 26.74mm. A similar scenario was observed in Earl Soham, where the Rain Gauge recorded 68.49mm in 21 hours, with 50% of the rainfall (35.34mm) falling within a critical 3-hour period. The data recorded coincides with intensity of rainfall experienced, the speed of onset and the extent of flooding within the area.

The description of the flooding events outlined below has been prepared using reports submitted to Suffolk County Council via the online Highways Reporting Tool and information gathered during community meetings and through community feedback. Any measurements given are estimations based on photographs of the event.

A detailed description of each area affected can be found below.

1. **Brockford Street**

Brockford Street was severely affected by flooding, with approximately 13 properties reported to have experienced internal flooding. Reports suggest that the flood water came from several sources including the overtopped river Dove, significant surface water runoff from the A140 and surrounding fields, as well as overwhelmed watercourses and drainage infrastructure. The river Dove in this area breached the banks at several points on both the east and west of the A140, causing significant flooding to surrounding properties which border the river and causing flooding to the main transport routes in, out and through the area. The A140 was closed for several hours and there was significant traffic congestion on the Brockford Road, caused by the towing of caravans to safety away from the flooding areas. Residents reported that due to the impassable A140 and traffic congestion on the Brockford Road emergency services were unable to pass for several hours.

There is a short section of open watercourse to the north of the main affected area, which borders the A140 to the west (see figure 13). This section of watercourse was reported to have been quickly overwhelmed and caused water to spill onto the highway where it flowed south towards the river. Following a site investigation, this section of watercourse appears to be piped to the north, but no continuation to the south was visible upon inspection. It is presumed that once the capacity was reached, the water

had no continuation route and consequently overspilled onto the highway before continuing down the road.

Small section of watercourse described in the text

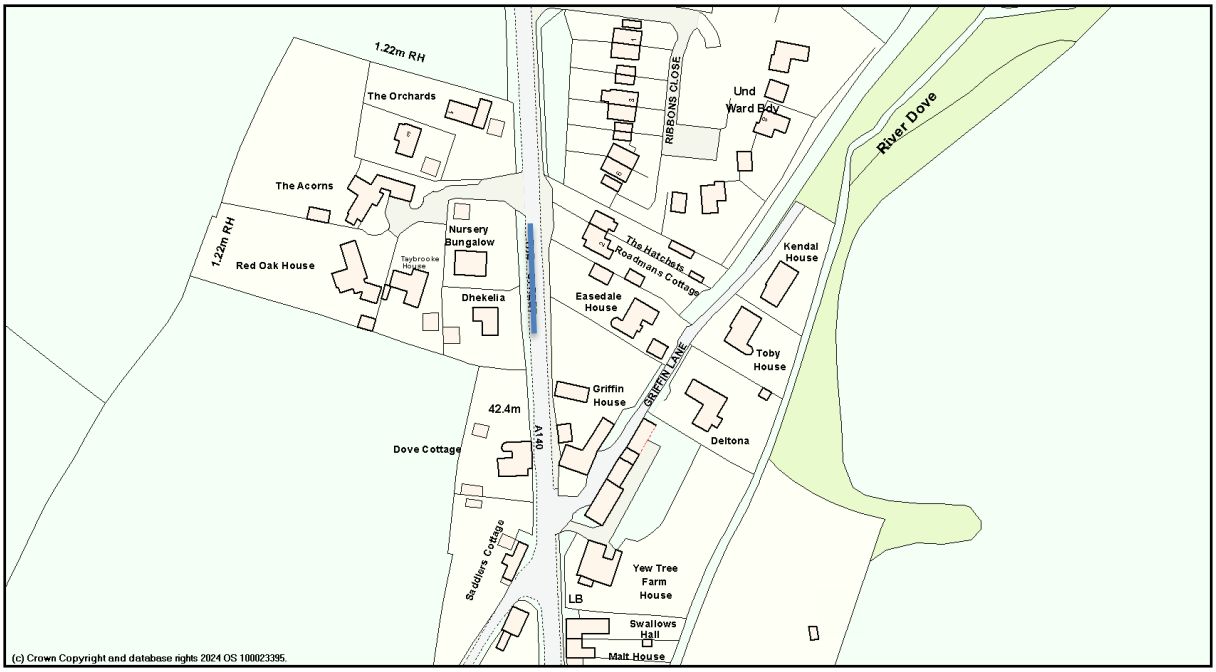

Figure 13 - Small section of watercourse on A140

This watercourse appears to be a Suffolk County Council Highways asset, And following consultation with the Highways Authority, maintenance of the feature is planned to take place. There are several outfall pipes situated in the western bank of the watercourse, likely to be servicing the housing to the west by means of a surface water or sewage discharge points. Modern development standards are required to attenuate water on site and only discharge it at rates the same or lower than predevelopment and as such, it is unlikely that the new development on the western side of the highway was a significant contributing factor. Most Highways drainage assets in the area were shown to be working on the last inspection (July 2022), except one non-operational gully, which should be draining into this watercourse. It is unlikely however that this individual gully would have had any significant impact on the flooding event due to the rainfall experienced. The highway authority has maintenance planned for this short section of watercourse, but timescales are not confirmed.

Further south, but still north of the river Dove, there is a junction on the A140 with Griffin Lane, which travels parallel to the river Dove in a north easterly direction and Brockford Road (leading to Mendlesham), which travels south westerly.

Properties on Griffin Lane were reported to have been affected by the over topped river Dove, and another smaller watercourse running parallel. The river is located east of the properties and the watercourse is located west of the properties with Griffin Lane situated between the two features. Floodwater came from both sides, from the Dove

River to the east, and from the ordinary watercourse and A140 to the west, it travelled across griffin lane and into properties. The main flow of the water was heading southeast in order to rejoin the river.

Approximate location of ordinary watercourse west of Griffin Lane

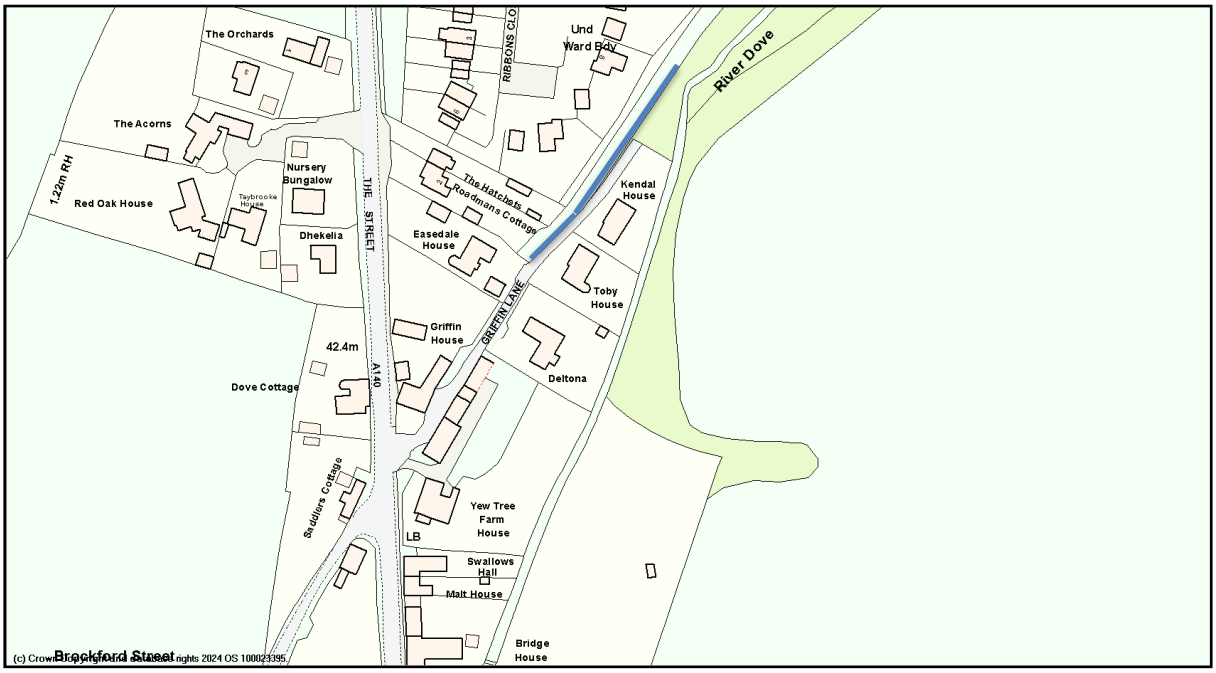

Figure 14 - Griffin Lane watercourse

Reports taken from community feedback is that there have been some tree felling activities further to the north which may have left debris in the Dove River, possibly causing an impedance to the flow of water. It is possible that this blockage caused the water to back up faster than is natural and as such, cause the river to overtop it banks earlier, although given the scale of the event, it is likely that the river would have overtopped anyway, although the impacts may have been less severe. Following consultation with the Environment Agency, they were made aware of the felling activity in June 2023 and larger branches were found to have been left in the river, however due to the location of the activity (distance from properties, gradient of the channel and capacity of the surrounding floodplain), it was evaluated as not to contribute to increased flood risk to Brockford Street and no further action was taken.

Clearance of debris from a watercourse or river is an activity that the riparian owner can undertake and the LLFA would encourage issues such as this to be reported to the relevant landowner who can then remove obvious debris and blockages as part of their riparian maintenance duties.

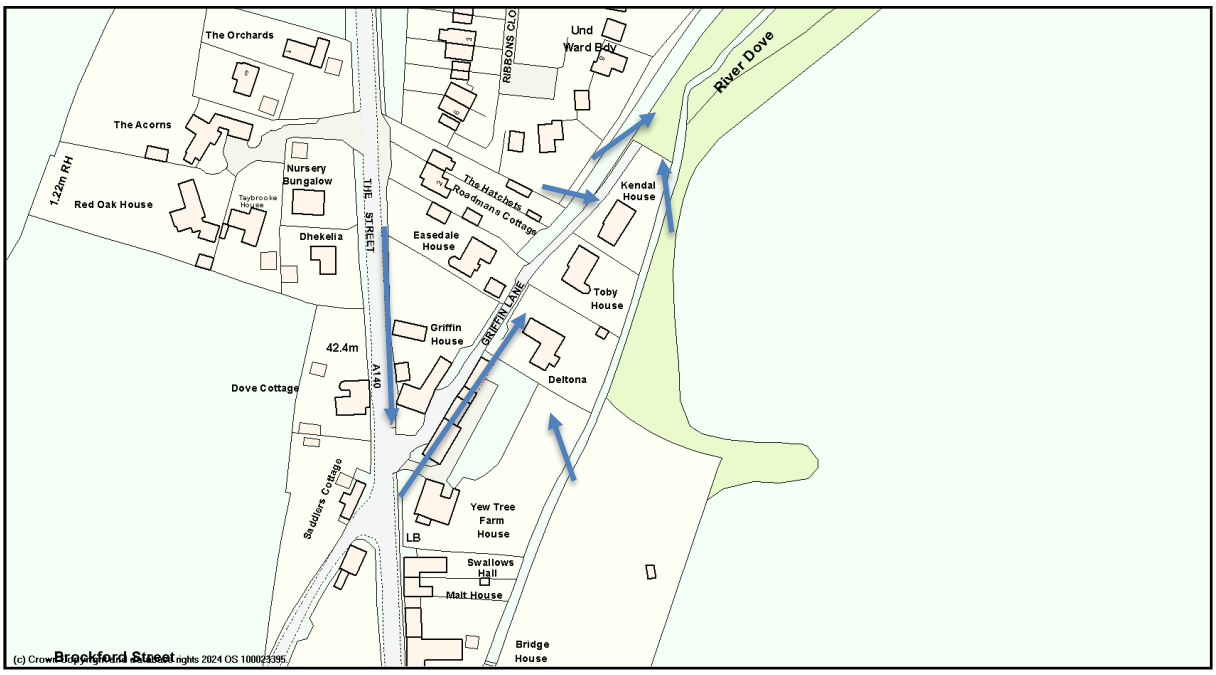

Figure 15 - Waterflow paths in north Brockford Street

Immediately south of the junction with Griffin Lane, there is a small bridge which allows the river Dove to pass underneath the A140. Reports from the community suggest the capacity of the bridge crossing was not of sufficient size to allow the volume of water to pass underneath and during the event, this resulted in a significant portion of the water flowing out of the channel upstream and by the bridge abutments. This water flooded onto the road and surrounding properties on the west side of the A140.

Consultation with the Suffolk Highways have confirmed that the structure is a single span masonry arch structure with a width of 2.7m and is believed to have been constructed circa 1881. Confirmation that the bridge was the main restriction in this area is not possible to quantify and instead is likely to be a combination of factors. Whilst the bridge can cater for the vast majority of flow conditions in the river, there will be instances during extreme events when water flow is greater than capacity, which might lead to a restriction in flow in the river at the bridge. The bridge is one of the lower lying points in this area and is therefore susceptible to breaches if water volumes and/or blockages impede the flow of water. The bridge is subject to biennial inspections, the last one being undertaken in May 2024, at which there was no blockage.

Further reports have suggested that recent works on the bank close to the bridge need some repair, with rocks from the Gabion Baskets spilling out and further reducing the capacity under and close to the bridge. However, recent inspections by the structures team from the Highway Authority, suggest that the gabions are in good condition and it was noted that some material was laid in the bed of the river as part of these works for scour protection. It is possible that the rocks noted by the residents were part of this scour protection and as such are unlikely to have a significant impact on capacity.

Since 2020, works have taken place on the grazing land adjacent to the River Dove between Buces Hill and the caravan park downstream at Brockford Road, Mendlesham. The works include dividing the land into plots, and installing caravans, close boarded fencing, hard standing and other structures, including raising the banks of the river.

Through consultation with the Environment Agency, the lead organisation for regulating works on or near to a designated main river, it's been confirmed that the works did not have planning permission and were contrary to planning policy as they consisted of 'More Vulnerable development in Flood Zone 3a (High Probability) and Flood Zone 3b (Functional Floodplain)', which should not be permitted. The works also did not have the required Flood Risk Activity Permit (required for works within 8m of the main river or within the floodplain) from the Environment Agency under the Environmental Permitting (England and Wales) Regulations 2016 (EPR).

Subsequent planning applications were submitted and refused by Babergh and Mid Suffolk District Council (BMSDC), and planning enforcement notices were then served on the owners by BMSDC. The notices were appealed, and a planning enforcement hearing took place. The Planning Inspectorate's Appeal Decision gave the appellants three-year temporary planning permissions until April 2025, and one site an 18-month temporary planning permission, but included a condition that after this date they would need to leave the site and return the land to how it was previously.

Landowners were notified that the Environment Agency were investigating the works with investigation starting when the temporary planning permissions expire. It is understood that the sites flooded in Storm Babet, and the floodplain continued to function.

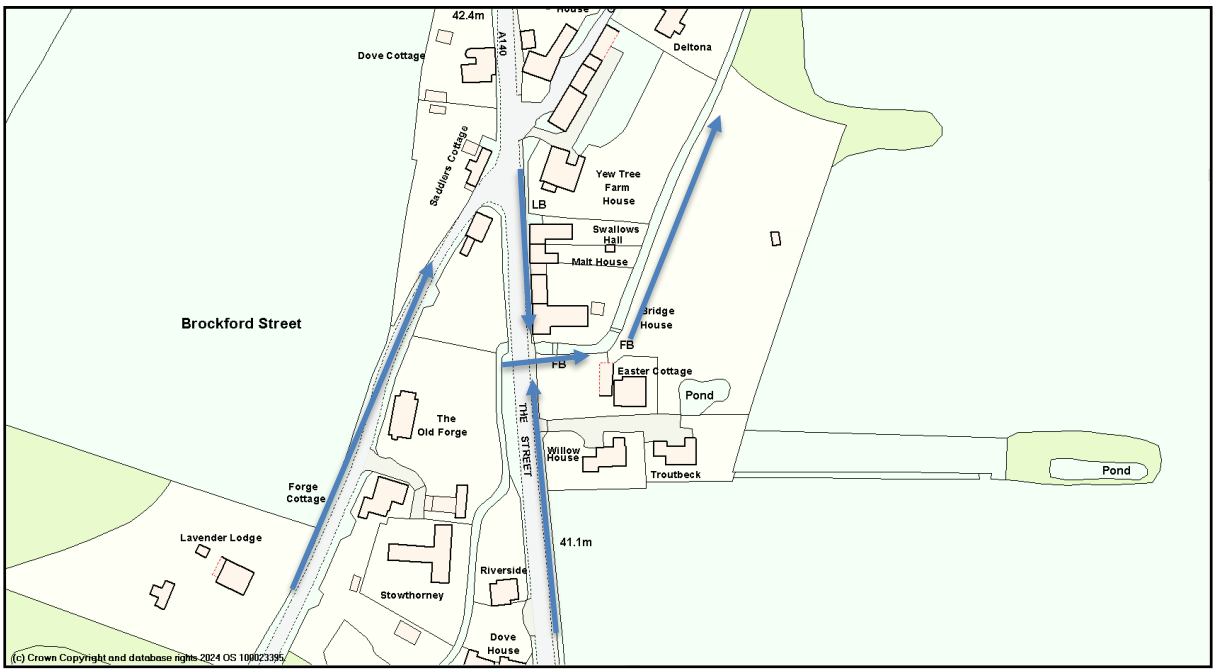

Figure 16 - Waterflow paths in south Brockford Street

Sewage was reported as being present in the flood water in this area and continues to be an issue going forward with reports of toilets backing up regularly during rainfall events. There are no Anglian Water assets in the area and instead sewage systems are considered to be private, managed and maintained by individual property owners.

South of the bridge, properties have been reported to have been affected by significant surface water runoff from surrounding fields to the east and south. There have been reports from the residents that some possible infilling of a watercourse has taken place in this area. A loss of watercourse features could have exacerbated the impacts within this area. The lead local flood authority has visited the area to investigate the possible infilling and have sent letters detailing landowner riparian responsibility to all possible owners of the watercourses in question.

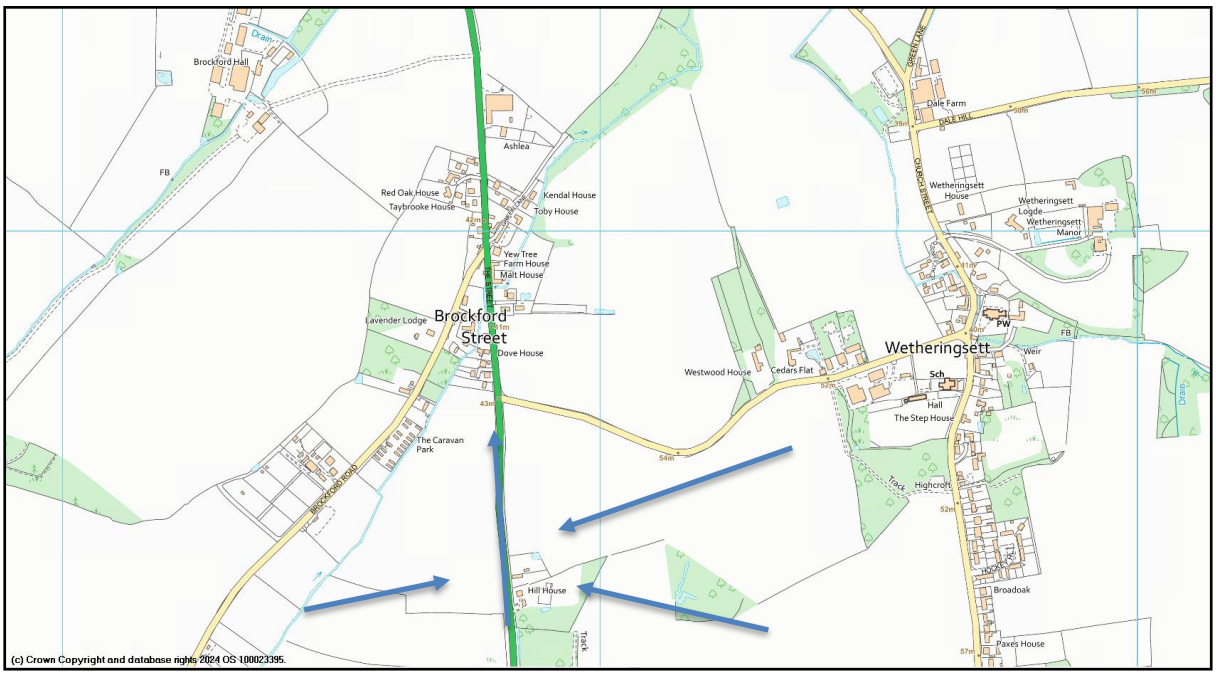

Figure 17 – Flow path map of south of Brockford Street

Summary:

- At least 13 properties reported internal flooding to depths of approximately 600mm.
- A140 road was closed and impassable for a period of time.
- Significant rainfall onto saturated ground caused local watercourses to become overwhelmed.
- Overtopping of the river Dove added to surface water runoff from highway and surrounding fields affecting properties.
- Private sewerage works in the area continue to be affected in months following the event by high water levels.
- Possible infilling and/or lack of maintenance of watercourses in the area prevented water egress.

LLFA recommended action(s):

- Residents to install Property Flood Resilience (PFR) via grant funded scheme.
- EA to continue to investigate and review whether any action in relation to unpermitted activities on River Dove is appropriate.
- Relevant landowners to carry out required maintenance or inspections of private sewerage systems to ensure these are functioning correctly.
- LLFA to investigate possible unconsented works of infilling a watercourse and check if local watercourses require maintenance.
- SCC highways authority to carry out maintenance on the watercourse adjacent to A140, (200m north of bridge, west side of carriageway) and investigate if

outfall pipe is present/operational, and carry out repair/maintenance of the non-operational gully which feeds into this watercourse.

- Ensure the completion of highway drainage asset cyclic maintenance.

2. Wetheringsett

The village of Wetheringsett had at least 10 properties reported to have suffered internal flooding during Storm Babet. Flood damage to properties was significant, with internal depths of up to 500mm. Several factors contributed to the flooding in this area, with reports ranging from historic issues with drainage features to significant surface water runoff and the overtopping of the watercourse located in the village.

The most significantly impacted area of the village was near the centre, to the west of the church. This area is a topographic low spot and has a significant watercourse and associated flow path which travels roughly south-east to north-west through village.

Starting from the eastern edge of the village, there is a very large rural catchment, where significant levels of surface water runoff were observed during the event. Due to saturated ground conditions and generally low permeability of soils, significant surface water runoff travelled towards the watercourse which enters the village from the east. This area was one of the first affected as the watercourse was very quickly overwhelmed, with water levels rising rapidly, exacerbated by a series of constrictions in the network.

The watercourse which travels into the village from the east, is of sufficient size and can accommodate substantial flood flows. However, as it enters the residential areas in Wetheringsett, its capacity is reduced, with shallower banks and a number of constrictions, including a weir, two small brick arch bridges, a culvert passing under the old mill, followed by an engineered turn through nearly 90°, turning the watercourse north where it meets the highway. The sharp changes in direction of the channel and small capacity structures were observed to have exacerbated localised flooding.

Reports from the community suggest that the watercourse in this area overtopped early on during the event. At the points where the waterflow met a restriction, the water was observed to force its way around or over the top of the constrictions, adding to flood water on the highway and in surrounding properties. Additionally, reports from the north of the village suggest some sections of the watercourse as it leaves the village, require some maintenance to ensure a suitable flow. It is possible that unmaintained watercourses may have reduced capacity within the channel, impeding the flow of water through the village during the event.

The central part of the village has a junction, serving 3 routes from the south, west and north. The southern and western access roads have a significant gradient which caused surface water to travel across the highway at high speed. Reports from the event described a torrent of water coming down both sections of the highway with the extents of the flooding reaching several meters up the road from the watercourse in both directions. There is a watercourse on the eastern side of the highway on the

southern road (Hockey Hill) which manages the water flows until it reaches the culvert at the entrance to the primary school where, once capacity is reached, it overtops into the highway. To the north, the road has a small increase in height before flattening out, so while little water was being added to the flood from this direction, the small rise in the highway was causing the water to attenuate in the low spot in the centre of the village.

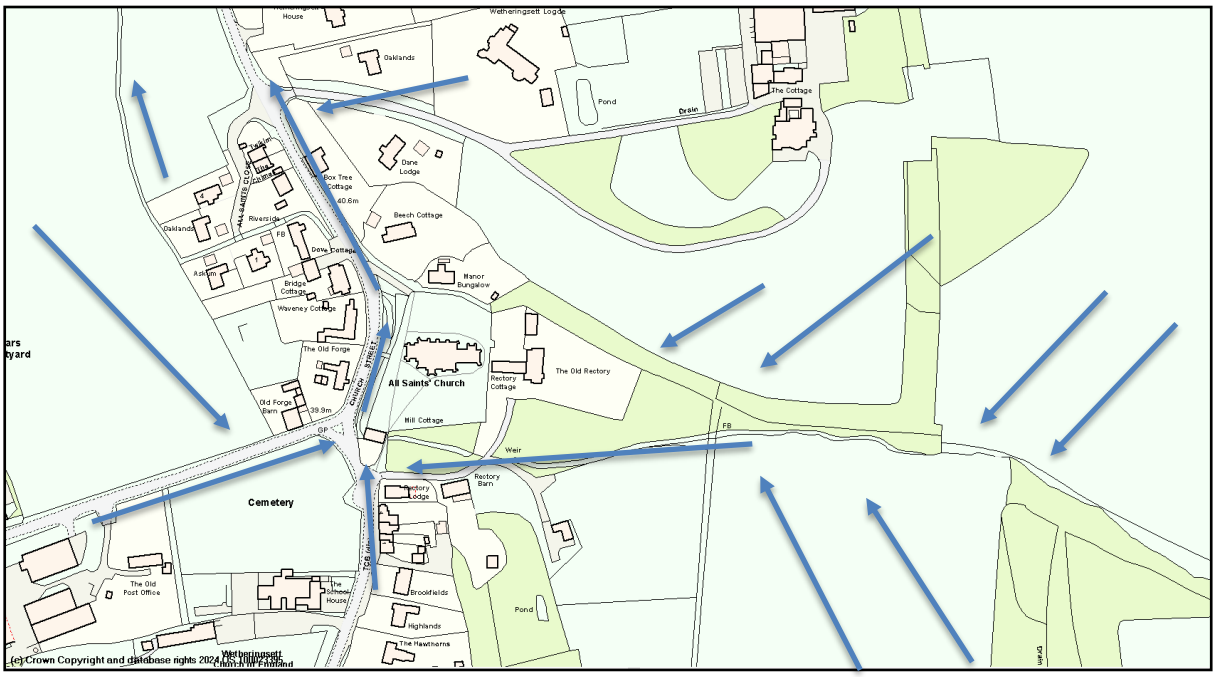

Figure 18 - Flow path map in Wetheringsett

Houses on Hockey Hill (south and east) and Church Street (north) were affected by flood water entering their properties from the highway, this water was the combination of surface water runoff from the surrounding fields and overtopped watercourse.

Houses affected on Cedars Hill (west) were overwhelmed both from surface water cascading down the highway and off surrounding fields as well as the swell from the overtopped watercourse, which was being exacerbated by large vehicle movements through the flood water in the area.

Further to the north along Church Street there is a known highways drainage issue on the west side of the carriageway. Suffolk Highways inspectors have been to site and reported a severe blockage or collapse of the connecting drainage pipe meaning the surface water from the highway has no route to the nearby watercourse. As a result of this blockage, the water on the highway very quickly backs up on the western side causing pooling of water, which overtops the kerb line and flows down into the adjacent houses.

There is an additional flow of surface water which travels down Manor Drive, which has a noticeably steep gradient to the junction with Church Street and is part of the large catchment area to the east of the village. Some residents have reported an

increase in surface water flowing down Manor Drive in the months preceding Babet and there are concerns that changes to the Manor itself could be a possible cause of this. Following discussions with the present occupiers of the manor, significant work has been undertaken on the driveway to the manor, with new soakaways being constructed and historic pipework being replaced and regular maintenance taking place on the current large capacity soakaways already in place. Building works have not increased the size of the impermeable area and as such, it is unlikely that any changes which have taken place would have increased the flood risk.

As the water travels away from the village to the north, the watercourse borders the highway where it becomes Green Lane before flowing into the River Dove near the village of Thwaite. The watercourse which borders the highway is very shallow with limited capacity, meaning the highway infrastructure in this area, is regularly flooded during heavy rainfall events.

Anglian water has a foul sewer system in Wetheringsett which reports suggest was overwhelmed during the event and several times since. The piped system flows towards a pumping station in the centre of the village which during Babet, was a considerable depth underwater. Residents to the north of the village have expressed concerns that each time the highways drainage becomes overwhelmed, the sewer system also overflows causing raw sewerage to spill out of piped networks and into gardens and highways in the area. Following discussions with Anglian Water, they have confirmed work has been completed on the system to rectify the problem and an additional monitoring solution is to be implemented, designed to provide an early warning of possible issues, meaning proactive works can be undertaken to prevent raw sewage escape.

In Summary:

- Internal flooding occurred in over 10 properties with internal flood water depths of up to 500mm.
- Surface water from a large catchment area to the east, south and west flowed towards the centre of the village overwhelming the watercourse.
- Historic drainage issues prevented effective draining of the highway in isolated spots.
- Overwhelmed sewerage systems overflowed into properties and gardens.
- Steep surrounding topography caused rapid onset of flooding.
- Possible watercourse maintenance issue to the north and west of the village may have caused a slower flow out of the village.
- Significant constrictions causing irregular flows in high water levels

LLFA recommended action(s):

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

- Increase maintenance of the watercourse throughout the village to ensure a good flow is always possible.
- Look into possible natural flood management features to the east of the catchment to capture water upstream and reduce the intensity of the water getting to the village.
- Carry out repairs to highways drainage infrastructure to allow for water movement to nearby watercourses unimpeded.
- Ensure the completion of highway drainage asset cyclic maintenance.
- Community to consider uptake of Suffolk Highways Community Self-Help Scheme to deploy flood warning signs.

3. Station Road

The flooding at Station Road was different to the other locations, instead being an isolated incident in which surface runoff came from the surrounding fields, and flooded a single property located in a dip in the road. The event caused the shared septic tank to flood and overflow into the garden. Reports suggest the watercourses in the nearby fields may not have been maintained possibly exacerbating the event.

Reports from the community suggest maintenance of these watercourses has since been undertaken and the flooding issue has not reoccurred.

Figure 19 - Map of station road

In Summary:

- Significant rainfall caused surface water flows to pool in low spots causing internal flooding.

LLFA recommended action(s):

- Residents to install Property Flood Resilience (PFR) via grant funded scheme.
- Ensure regular maintenance of watercourses by riparian owners.
- Ensure the completion of highway drainage asset cyclic maintenance.

4. Park Green and Wetherup Street

Park Green and Wetherup Street were further isolated incidents with a small number of properties reporting internal flooding. Reports that have been received fall in line with predicted flood risk from surface water mapping.

Reports from the community in Park Green suggested high levels of surface water overwhelmed the drainage systems and surface water ingress into homes was a combination of runoff from both the highway and surrounding fields as saturated ground could not cope with the volume of rainfall.

Reports from Wetherup Street suggested similar issues with the addition of watercourses and ponds also overflowing. The area contains no mains drainage and agricultural land around the affected properties was already saturated, resulting in watercourses flooding and the village pond, located to the west of the affected properties, being unable to cope with the volume of water. Due to the prolonged precipitation event, flood water began to pool in the isolated dips and flood water ingress was through the floorboards of the affected properties.

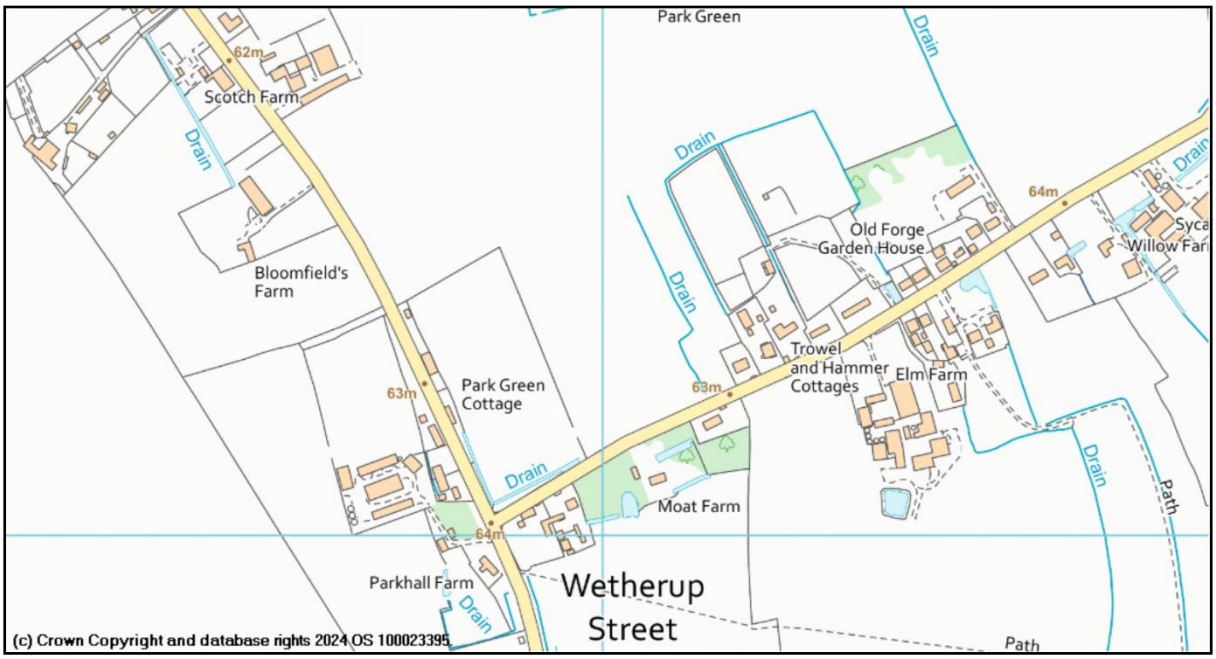

Figure 20 - Map of Park Green and Wetherup Street

In Summary:

- Significant rainfall caused surface water flows to pool in low spots causing internal flooding.

LLFA recommended action(s):

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

Photo(s) 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.

Flooding event in east Wetheringsett

Flooding close to the church in Wetheringsett

View of Church Street during the event

View down Manor Drive during the event

Church Street and Cedars Hill Junction

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

Risk Management Authority	**Relevant Flood Risk Function(s)**
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 river
Anglian Water	Asset Owner
Babergh & Mid Suffolk District Council (BMSDC)	Local Planning Authority & Asset Owner
Non-Risk Management Authority	**Relevant Flood Risk Function(s)**
Private Landowners	Riparian Responsibilities of watercourses
Private Homeowners	Improving flood resilience to property

Action(s) completed to date:

Action	**Risk Management Authority**	**Progress**
Watercourse alongside Church Street has been cleared by the riparian owner	Riparian owner	Complete
Flood diversion measures have been installed in Manor Drive to divert surface water flow away from Church Street	Riparian owner and homeowners	Complete
A community emergency group comprising parish councillors and parishioners has been set up to action the emergency plan	Community	Ongoing
LLFA to investigate possible unconsented works of infilling a watercourse and check if local watercourses require maintenance	SCC LLFA	Site visit carried out and riparian ownership letters sent to all landowners
Concerns in the community surrounding	Residents / AW / BMSDC	Anglian Water have carried out works to the rising main in

sewage escape in gardens of home since Babet have been reported to Anglian water and BMSDC for further investigation.		the village of Wetheringsett and installed an early warning system to detect and prevent any future issues. Residents are recommended to report any further issues to the relevant authority.

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 Wetheringsett-cum-Brockford. 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
Short Term Actions (e.g. standard maintenance activity and initial investigation of options that can be undertaken with limited need for forward planning)			
Establish or revise a community emergency plan that includes reference to flood events – liaison with Suffolk Resilience forum	Parish council	6-12 Months	In progress
Consider uptake of Suffolk Highways Community Self-Help Scheme to deliver minor maintenance works within their communities, including deployment of flood warning signs.	Parish council	6-12 Months	
Maximise the take up of the £5k PFR Grant currently available to residents before the April 2025 deadline	SCC LLFA / Residents	7 Months	
Inspect and remove observed blockages within ordinary watercourses and main River.	Riparian Owners	As required	Ongoing
Increase the maintenance of watercourse management, where appropriate, across the parish and report observed	Riparian Owners / Community	As required	Ongoing

blockages to riparian owners or relevant RMA			
SCC Highways to carryout repairs to drainage features on Church Street in Wetheringsett	SCC Highways	6-12 Months	In the planned drainage programme, timescales to be confirmed
Relevant landowners to carry out required maintenance or inspections of private sewerage systems to ensure these are functioning correctly in Brockford Street	Residents	As required	
Medium Term Actions (e.g. longer planning timescales and potential need to source funding but potential for greater impact)			
The EA will continue to investigate and review whether any action in relation to unpermitted activities on River Dove is appropriate.	Environment Agency	TBC	
SCC highways authority to include watercourse adjacent to A140, (200m north of bridge, west side of carriageway) in routine maintenance schedule and investigate if outfall pipe is present/operational.	SCC highways	Maintenance to be carried out as and when required	Ongoing – clearance of the watercourse is planned and investigation if there is an outfall will be carried out
Investigate the feasibility of utilising land to the east of Wetheringsett for Natural Flood Management features	Landowners/Parish council, supported by LLFA where possible	TBC	
Investigate potential viability and seek funding for projects which aim to attenuate water in the upper catchments e.g. storage ponds, wetland areas.	SCC LLFA, EA, Landowners	TBC	
Investigate the feasibility of improving the watercourse network through Wetheringsett and investigate if capacity can be increased at the engineered turns to	Riparian owners / SCC LLFA	TBC	

allow a more natural flow path.			
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/Parish council, supported by LLFA where possible	TBC	
Deliver any capital interventions that are economically, technically and environmentally feasible and acceptable to improve the flood resilience of the village.	SCC LLFA, EA and landowners	TBC	
Improvements to watercourse network within Wetheringsett to manage SW Flows if investigation works suggest it is beneficial and viable.	Riparian owners / SCC LLFA	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

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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