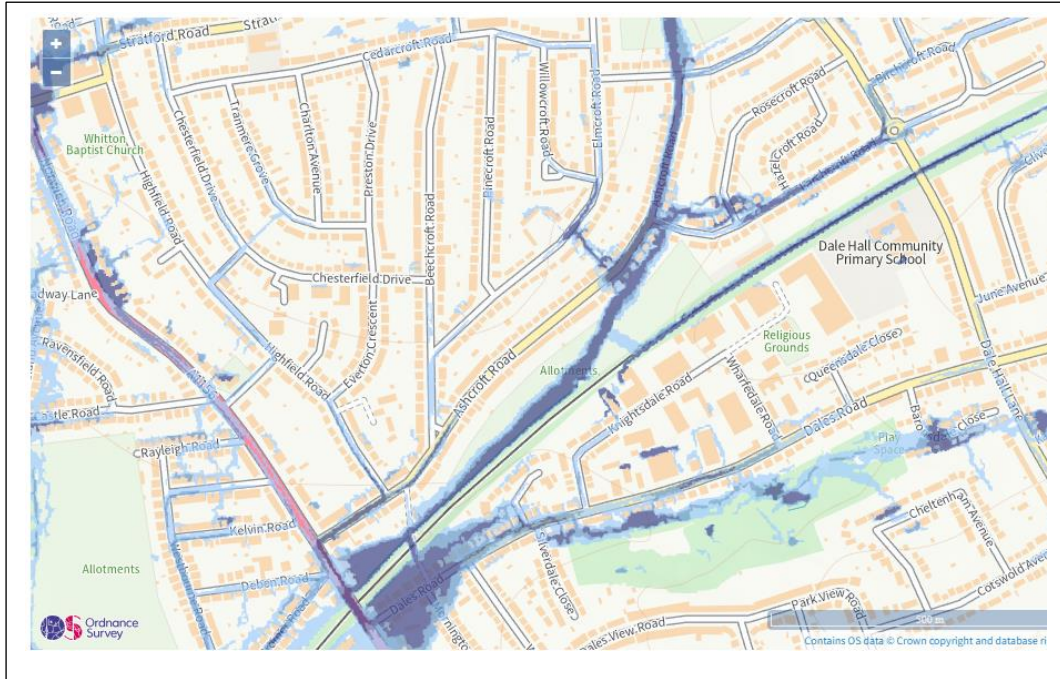


## Section 19 Flood and Water Management Act 2010

**Report Title: Ashcroft Road, Ipswich**

**Report Reference(s): CRNo 420364/ 141608 / 141674**



	<b>Name</b>	<b>Date</b>
<b>Report Author</b>	I. Webb & A. Byamukama	
<b>Responsible Officer:</b>	H. Purkis	
<b>Checked by:</b>	M. Hullis	July 2024
<b>RMA Review:</b>		August 2024
<b>Approved by:</b>	S. Palfrey	October 2024
<b>Date Published</b>		October 2024
<b>Date Report Closed</b>		

## Introduction

Suffolk County Council (SCC), 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	✓

## 1. Road Name, Parish, Postcode

Ashcroft Road, Ipswich, IP1 6AE

## 2. Location of flooding

An intense localised rainfall event was reported by the residents to have occurred on the 12th of September 2023 in Ipswich. The nearest rain gauge, monitored by the Environment Agency (EA) is located in Wherstead (5km southwest of this location) and reported 14.5mm rainfall during this period. We understand however that cloud bursts were very localised, and the intense downpour was verified by a local news website.

This investigation mainly focusses on the flood events that occurred at Ashcroft Road, north of Ipswich town centre. The location is shown in context on the map below (Figure 1). The most recent flood event reported to SCC was on the 12th of October 2023 but flooding was also reported to have occurred in September 2023, May 2023, June 2017 and June 2016.

For the purpose of this report, the impacted properties will be referred to as Property A, Property B and Property C. All are located on the southern side of Ashcroft Road and experienced internal flooding.

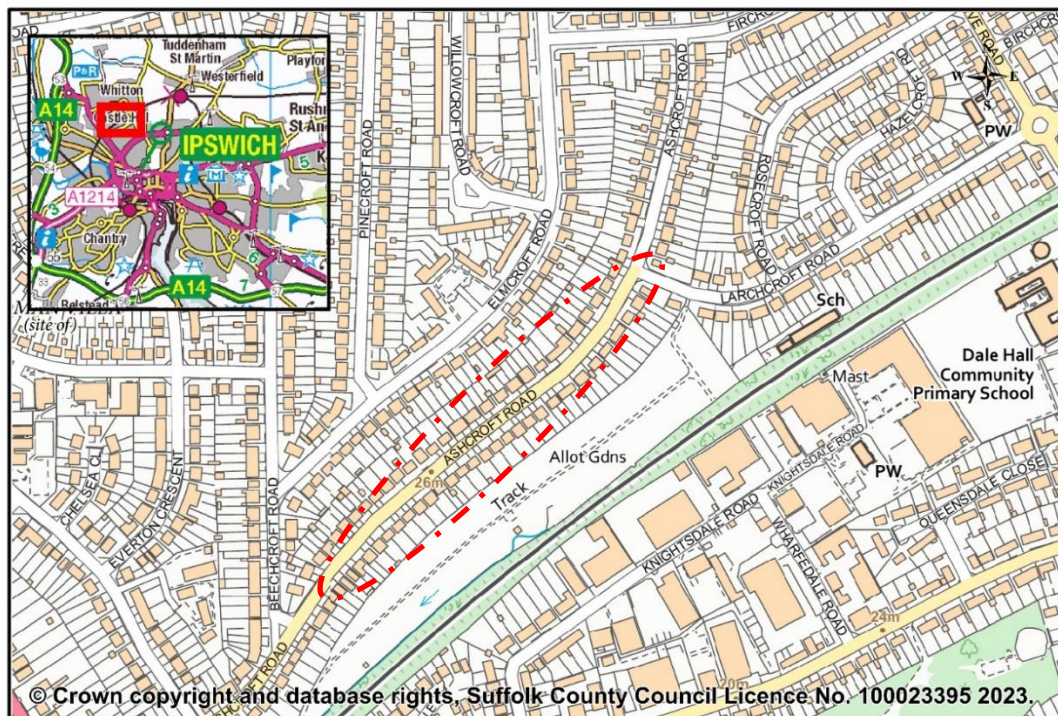


Figure 1: Investigation Area Map

©Crown copyright and database rights, Suffolk County Council Licence No. 100023395 2023

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

Whilst the east of England is typically one of the driest parts of the country, summer rainfall events can be very short and intense, leading to the drainage networks being overwhelmed and unable to cope with the volume of water.

'Property A' on Ashcroft Road flooded most recently in October 2023 and also in May 2023 (according to a report in the East Anglian Daily Times). During the site visit, the occupants reported several other properties on the same road suffered internal flooding although none of the incidents were formally reported to SCC. SCC have records of flooding in the vicinity in June 2017 and June 2016, in which 'Property A' had their driveway flooded with storm water mixed with sewage to a depth of 10-15cm. It was reported that manhole covers in the highway lifted and water flooded the surrounding area. However, no internal flooding is understood to have occurred until the October 2023 event.

Letters requesting further details were distributed to neighbouring properties regarding both the historical and more recent flood flooding incident of the 12<sup>th</sup> of October 2023 on Ashcroft Road. The information subsequently provided is included below.

Since 2002, "Property B", also on Ashcroft Road, has experienced at least 11 flooding events on different occasions. To manage the flooding they have installed their own flood defences, fitting a barrier to the porch and driveway to prevent water entering the property. The resident confirmed that in September 2023, the road was flooded to a depth of around 35cm, with up to 30cm of water entering the garage/outbuildings. After the flood event, foul sewage residue was left in the garden. Flooding occurred a second time in September 2023 to a similar depth and impacted the garden and external property. On previous occasions both the fire service and Anglian Water attended the incident to assist with the clear up following the event.

"Property C" also responded to the letter drop along Ashcroft Road, reporting two flooding incidents that occurred in May and September of 2023, which caused internal flooding to depth of up to 30cm resulting in damage to personal possessions and leaving sewage residue within external areas and lower ground floors.

Discussion with residents during a site visit (October 2023) revealed that some floodwaters had entered the properties via the domestic drainage system instead of through the external fabric of the building.

Liaison with the water and sewerage company, Anglian Water confirmed that the sewer network is subject to calcite build up (mineral deposits that build up in pipes) when groundwater regularly infiltrates the system and flows through the network. This has historically reduced the capacity of the network and resulted in flooding above ground locally.

Shown in Figure 2 is a map extract of the recorded historical pluvial (surface water) flood events as held by SCC.

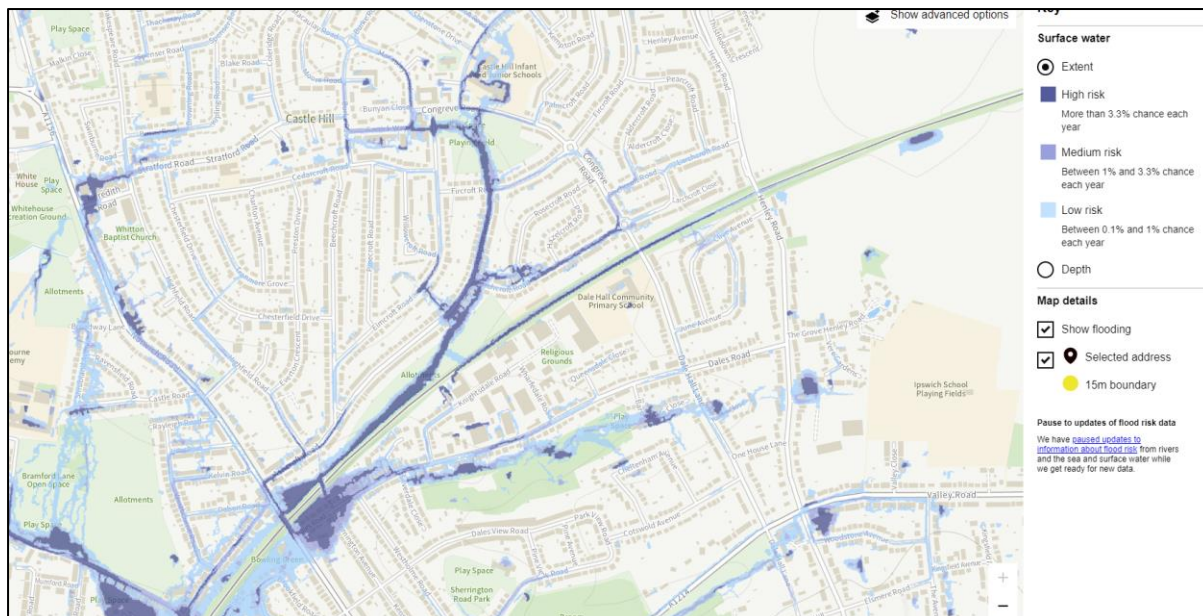


Figure 2: Historical Pluvial Flood Incidents

©Crown copyright and database rights, Suffolk County Council Licence No. 100023395 2023

#### 4. Effects of flood event

Anecdotal evidence indicates that during and shortly after an intense downpour, significant volumes of surface water flowed down Larchcroft Road (north-east of Ashcroft Road) and Ashcroft Road and overwhelmed the highway gullies and the combined (surface water and foul) sewer network. The manhole covers lifted due to the pressure in the system and floodwater from the sewers combined with surface water already accumulating in the highway flooded nearby driveways, gardens and properties. The properties on the south-eastern side of Ashcroft Road were impacted more severely due to the ground levels falling towards the properties.

Significant damage to properties was caused with flooding of internal property in several locations on multiple occasions. The highway was blocked for a significant period of time and the loosened manhole covers became displaced causing a secondary hazard for pedestrians and drivers. Further damage was caused to properties by vehicles driving through the floodwaters resulting in a bow wave.

#### 5. Predicted flood risk

The national “indicative flood risk” mapping hosted by the Environment Agency identifies that neither tidal (sea), fluvial (river) or reservoir flooding represent a significant risk at this location. Pluvial (surface water) flooding however is recorded to

represent a high risk (each year this location has a risk of flooding of greater than 3.3%).

An extract of the pluvial (surface water) flood map is shown in Figure 3 for reference. This extract demonstrates the potential direction and speed of flow during the high risk scenario (more than 3.3% chance of happening in any given year). A flow route of surface water can be identified on both Ashcroft Road and Larchcroft Road in the figure below and is indicative of what was reported by residents. There is also a surface water flow path to the rear of the properties that correlates with residents' reports of separate flow paths occurring in the highway and rear gardens simultaneously.

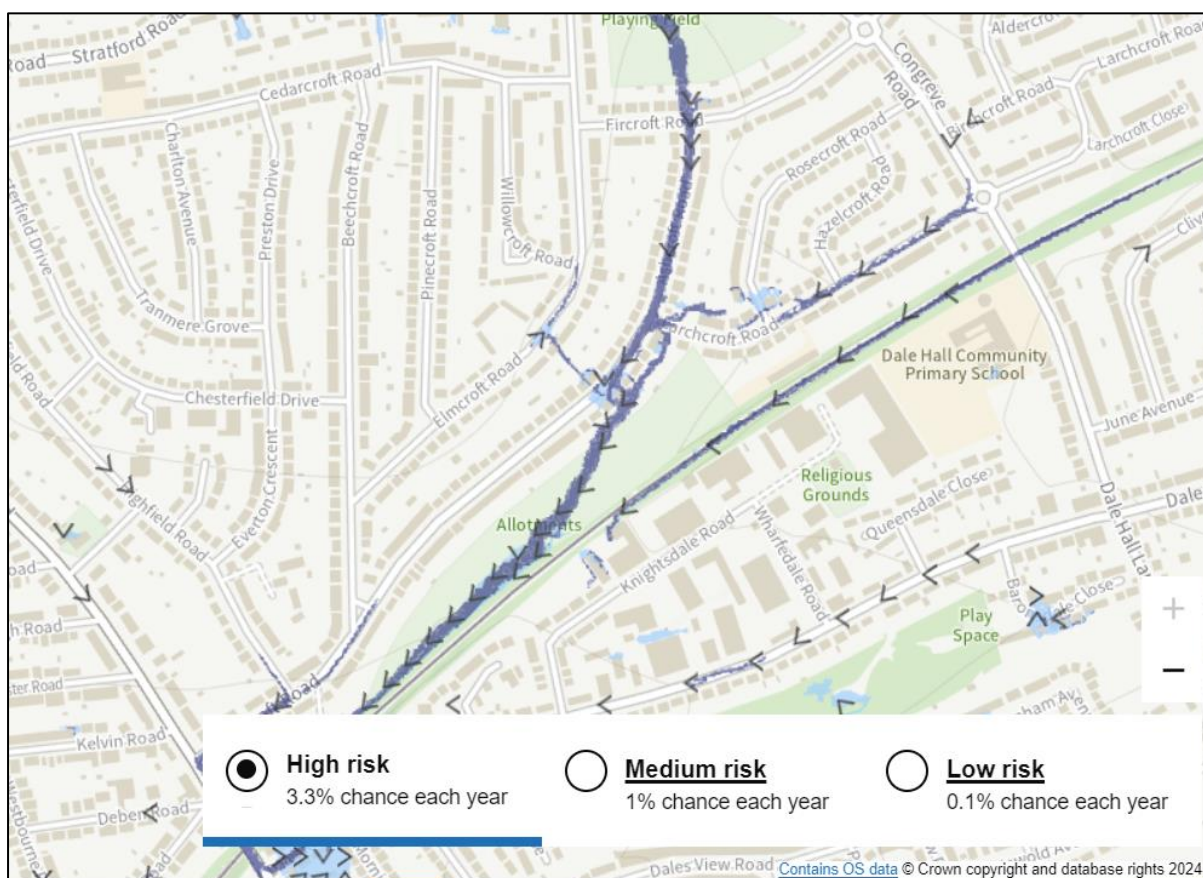


Figure 3: Worst case scenario for surface water flood hazard derived as a function of flood depth and velocity.

The flow path in the rear gardens is likely a result of the natural topography instead of a result of failed drainage or sewer infrastructure. The national flood risk maps use LiDAR data, which highlights variances in ground levels and contours influencing where flow paths will develop. The mapping does not include below ground infrastructure in its model. Any lack of capacity in the drainage networks will therefore be in addition to the flows shown above. The resultant flood mapping is based on a national model and therefore a bespoke model of the Ipswich catchment would refine flows paths, locations and volumes.

## 6. Flooding sources & likely causes:

- **Significant rainfall:** the intense nature of the localised rainfall event in a very short time. This overwhelmed the drainage systems which resulted in large volumes of surface water accumulating in the highway and front gardens/driveways resulting in internal flooding of property.
- **Overwhelmed gullies/unknown highway drainage:** the intensity of the rainfall is likely to be greater than the capacity of the highway infrastructure along both Larchcroft Road and Ashcroft Road. Further information is required regarding the highway drainage network as whilst the gullies may have been recently checked and cleansed, there are no records of where these gullies discharge to or how surface water captured by these features is managed (e.g., directed to river or to soakaways).
- Property A is located at the lowest topographic point on Ashcroft Road which means that when the gullies cannot accommodate the flows, excess water runoff flows towards the property.
- **Overwhelmed Anglian Water assets:** the Anglian Water sewers in the area are combined sewers and are thus under greater pressure as they have constant foul flows combined with sudden influxes of surface water during heavy or prolonged rainfall events. Sewers in Larchcroft Road and Ashcroft Road meet in close proximity to the location of the flood event.
- Anecdotal evidence indicates that during the recent flood events, the pressure in the sewer network resulted in access chamber covers lifting and sewage mixing with surface water runoff in the road. The pressure in the combined sewer also resulted in household drains backing up and causing further flood damage within the properties.
- **Possible calcite build up in the Anglian Water network:** groundwater is understood to be infiltrating the network allowing calcite contained within the water to build up and restrict the available capacity in the sewer.
- **Absence of sufficient property level flood resilience:** None of the properties along Ashcroft Road have sufficient flood resilience measures to have provided adequate protection against the impacts of the flood event.

**7. Photos of flooding**



Flooding in Ashcroft Road



Manholes in Larchcroft Road which were lifted during the flood event



Yellow line showing the height of inundation outside property A



Flood water flowing from Ashcroft Road to the back garden of property B



**8. Risk Management Authorities, Non-Risk Management Authority, and flood risk functions**

<b>Risk Management Authority</b>	<b>Relevant Flood Risk Function(s)</b>
Suffolk County Council	Lead Local Flood Authority (LLFA), Highways Authority (HA) & Asset Owner
Anglian Water	Asset Owner
Ipswich Borough Council	Local Planning Authority & Asset Owner
<b>Non-Risk Management Authority</b>	<b>Relevant Flood Risk Function(s)</b>
Property owners/Occupants	Installing property level flood resilience measures and/or formation of flood action group

**9. Actions completed to date:**

<b>Action</b>	<b>Risk Management Authority</b>	<b>Progress</b>
CCTV survey of sewer network to identify any blockages or known defects	Anglian Water	Completed

**10. LLFA Recommended Actions:**

<b>Action</b>	<b>Risk Management Authority / Action Owner</b>	<b>Latest Progress Update for Actions</b>
<b>Short Term Actions (Quick Wins)</b>		
Review requirement for Flood Re Insurance & Property Flood Level Resilience (PFR) measures (if properties flooded during Storm Babet/Oct 2023 then may be eligible for grant funding)	Homeowner/occupant with support from National Flood Forum <a href="https://nationalfloodforum.org.uk/">https://nationalfloodforum.org.uk/</a> and/or SCC LLFA <a href="mailto:floodgrants@suffolk.gov.uk">floodgrants@suffolk.gov.uk</a>	Pending
Consider placement of flood warning signs on the highway to mitigate vehicles displacing flood water from the highway onto property	Homeowner/occupant with support from <a href="mailto:communityselfhelp@suffolkhighways.org">communityselfhelp@suffolkhighways.org</a>	Pending
<b>Medium Term Actions (Longer term actions but potential for greater impact)</b>		
Undertake highway investigation to better understand point of discharge (soakaways vs sewer connection), capacity and condition. Review frequency	SCC - HA	Pending

of maintenance regime and increase frequency if required.		
Commission surface water model of Ipswich catchment to identify locations at greatest risk. Establish potential options to reduce surface water flow paths locally.	SCC LLFA	Pending
Investigate upstream Anglian Water sewer network to establish if sufficient capacity and acceptable condition. Establish quantity of calcite build up in the network, and if applicable, schedule maintenance to remove it alongside managing ingress of spring water into sewers to reduce its formation in the future.	Anglian Water	Ongoing
<b>Long Term Actions (Significantly longer timescales and budget required but equally greater mitigation potential)</b>		
Consider implementation of mitigation options recommended within surface water model of Ipswich catchment to mitigate risk of surface water flooding to properties	SCC LLFA	Pending
To consider benefit of installing natural flood management features and/or SuDS in Schools in upstream catchment to reduce pressure on sewer network	Anglian Water	Ongoing

## 11. Reviews

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

Reviewer	Date of Review

## **12. 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.

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.

Suffolk County Council forbids the reproduction of this report or its contents by any third party without prior agreement.