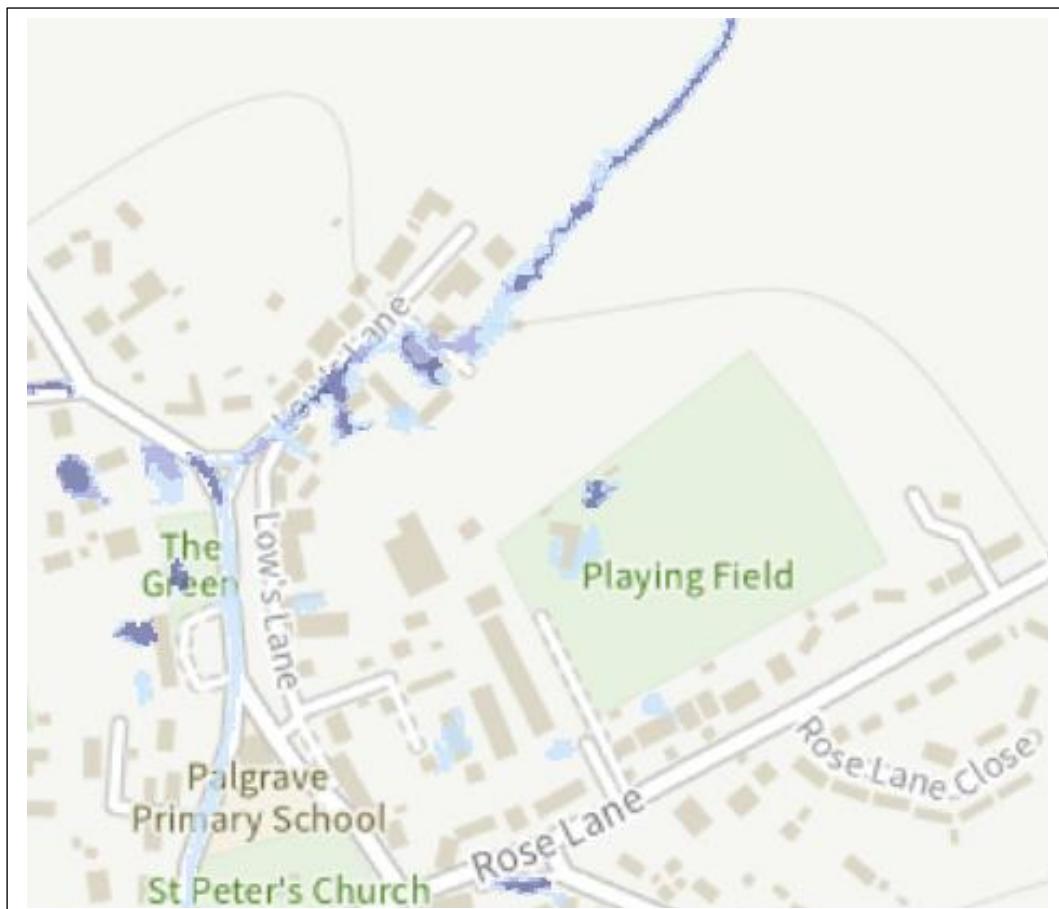




## Section 19 Flood and Water Management Act 2010

### Report Title: Goulds Close, Palgrave



	Name	Date
<b>Report Author</b>	I. Webb	
<b>Responsible Officer:</b>	I. Webb	
<b>Checked by:</b>	E. Coleby	6/11/2025
<b>RMA Review:</b>		
<b>Approved by:</b>	H. Purkis	13/11/2025
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## Executive Summary

Households in Goulds Close have experienced internal flooding on multiple occasions. The most recent flooding event was on the 28<sup>th</sup> of May 2024 flooding two properties internally. 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.

Goulds Close is located in an area at risk from pluvial flooding and the nature of the surrounding topography contributes to the susceptibility. Due to its lower elevation compared to the rest of the village, Goulds Close is particularly vulnerable during rainfall events. Overland flow paths are formed along the highways channelling water through Palgrave, bypassing some drains and directing floodwater toward Goulds Close.

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 overview in this report outlines the context of the flooding events and the impacts. Short, medium and long term recommendations have been published, and each have a potential role to improve resilience and reduce the risk of flooding in Palgrave. Short term recommendations include cleansing any blocked gullies and ensuring they are on the rota for regular maintenance. Medium term to longer term recommendations includes the implementation of installing Property Flood Resilience (PFR) and improvements to highway drainage infrastructure.

# 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. Location of flooding

The village of Palgrave is located in the Mid Suffolk District Council area, approximately 1 ½ miles South of the town Diss (Figure 1).

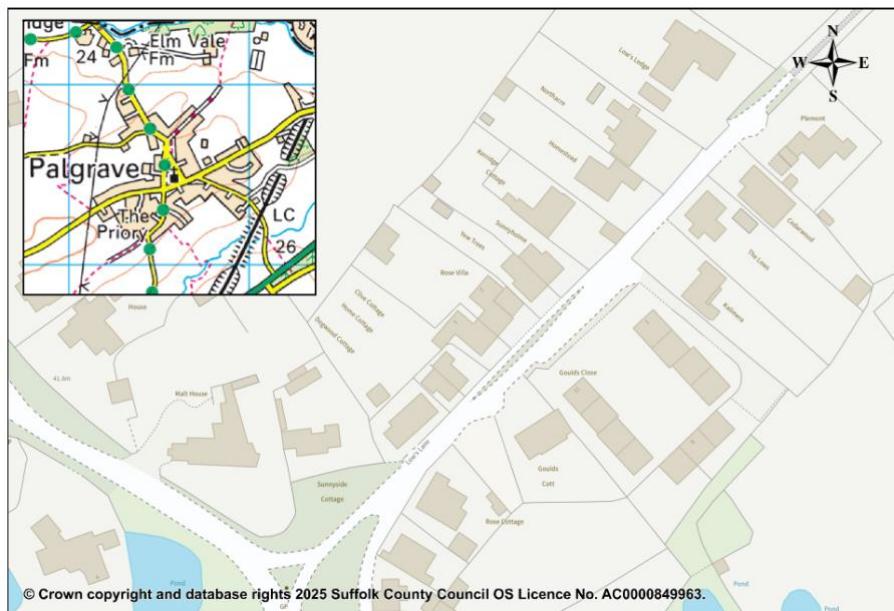


Figure 1- Investigation Area Map

The Environment Agency has permissive powers to carry out maintenance, improvement or construction work on statutory main rivers to manage flood risk. 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 2 below, shows the most significant watercourses in and around Palgrave.

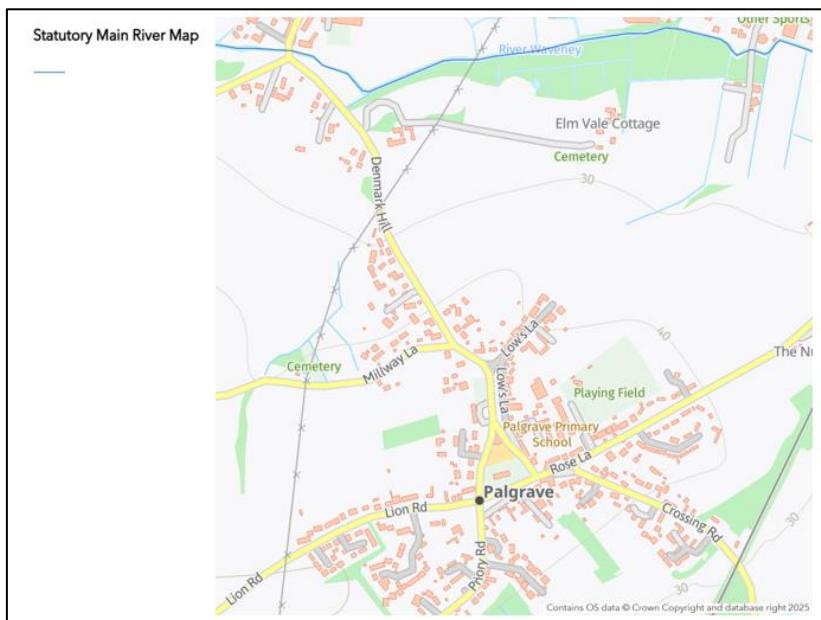


Figure 2- Location of statutory main river and ordinary watercourses.

On the 28th of May 2024, significant localised rainfall led to two properties reporting internal flooding. Flood water was described as coming from the highways and overwhelming drainage systems. Within this report, the term 'flood water' may be used to describe all types of flooding.

## 2. Records of any historical flooding

A review of Suffolk County Council's Highways reporting tool and correspondence from Mid Suffolk District Council indicated previous incidents of internal flooding of the properties. Reported incident dates are as follows:

- 21<sup>st</sup> April 2016
- 7<sup>th</sup> August 2018
- 1<sup>st</sup> September 2020
- 21<sup>st</sup> May 2024
- 28<sup>th</sup> May 2024

Most involve blocked or overwhelmed drains with some relating to flooding of properties. Information received from residents also confirmed the multiple incidents.

Drainage improvements have been carried out on Priory Road and Lows Lane in 2017.

### 3. Predicted Flood Risk –

Areas of Palgrave are at risk of flooding from Pluvial sources.

The surface water flow path in this area varies in risk level from low risk along Priory Road, increasing to medium and high risk along Lows Lane and Goulds Close. Goulds Close has been affected by flooding on several occasions.

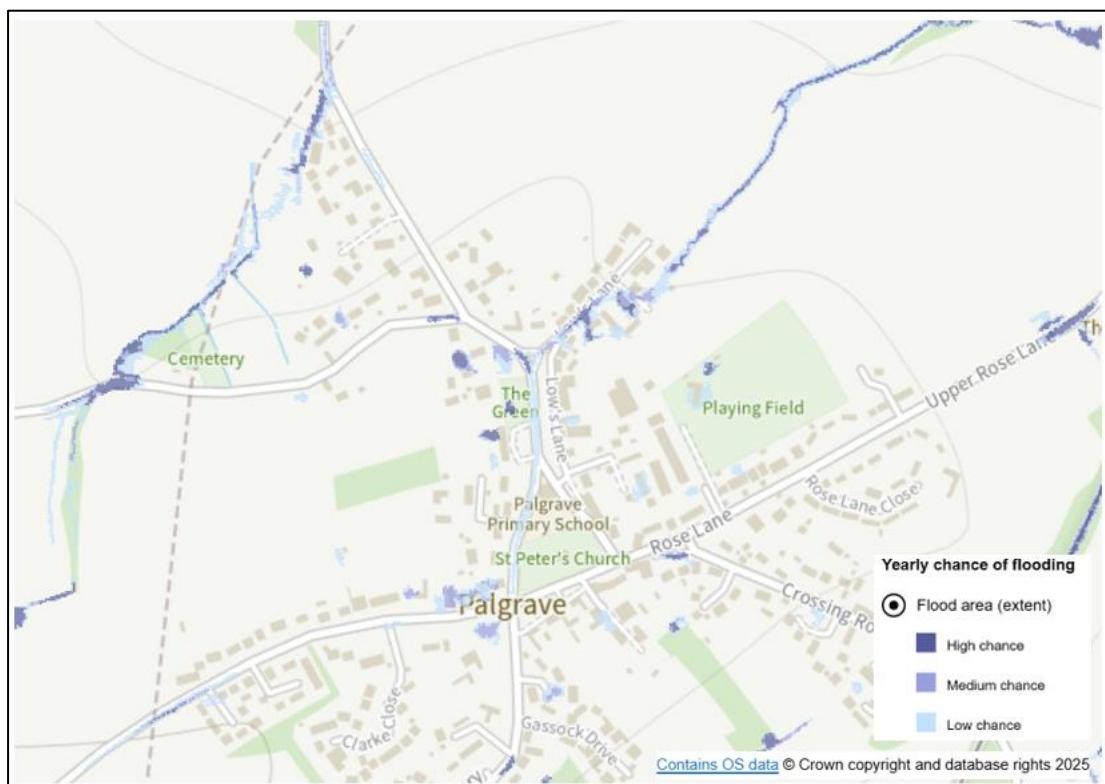


Figure 3- Surface water flood risk.

Figure 3 highlights the predicted pluvial surface water run-off from surrounding land and highways flood risk in Palgrave, with one main flow path travelling Northeast through the village and into the River Waveney.

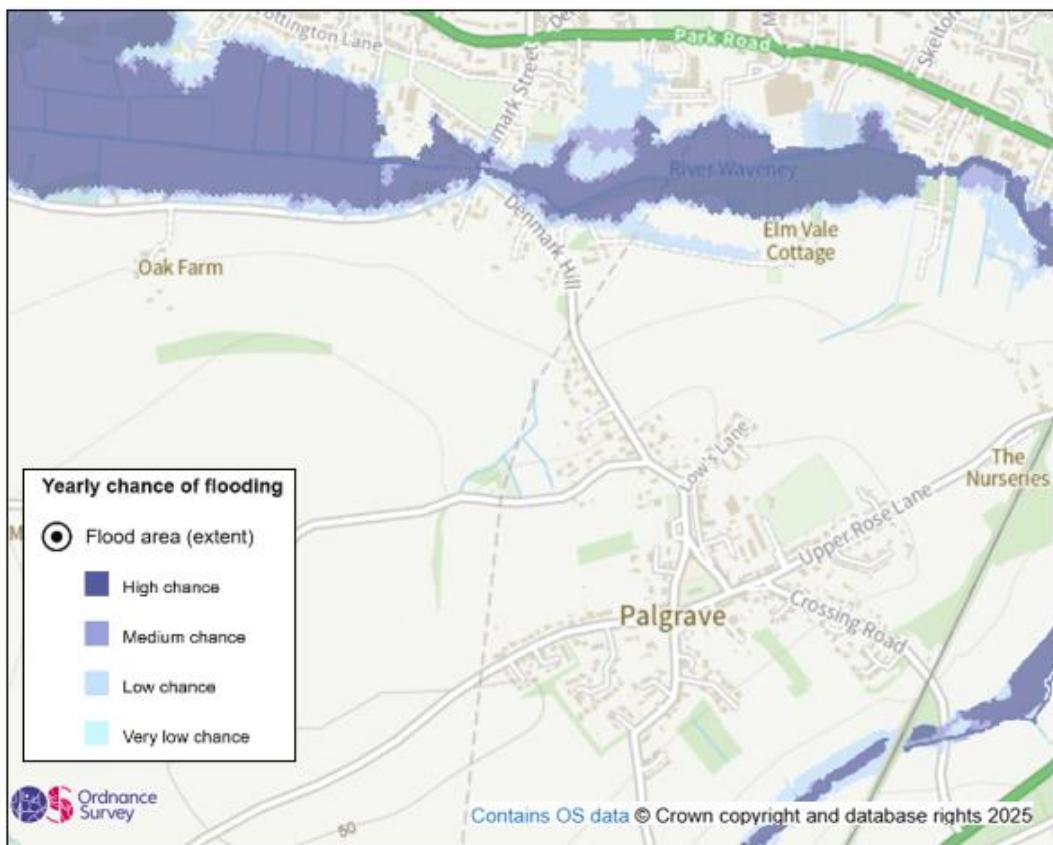


Figure 4- Flood risk from rivers and sea.

Figure 4 shows the predicted fluvial (from designated main river and ordinary watercourses) flood risk in Palgrave. The fluvial flood risk in the Palgrave area is predominantly associated with the River Waveney to the North of the village and a watercourse feeding into the Waveney from the South.

There is no current risk of fluvial flooding in Palgrave.

## 4. Catchment characteristics –

The village of Palgrave varies in topography ground levels with the West sitting higher than the East. Figure 3 shows the topography surrounding Palgrave with gradient changes across the wider area. Goulds Close is situated in a lower lying area where higher grounds surround it from the West while it continues to fall towards the East where the River Waveney flows.

The low-lying nature of Goulds Close means that during high rain fall events floodwater can become close in proximity to properties. Overwhelmed drainage infrastructure is frequently observed during these rainfall events.



Figure 5- Palgrave and surrounding area topography (TessaDEM as cited in topographic-map.com).

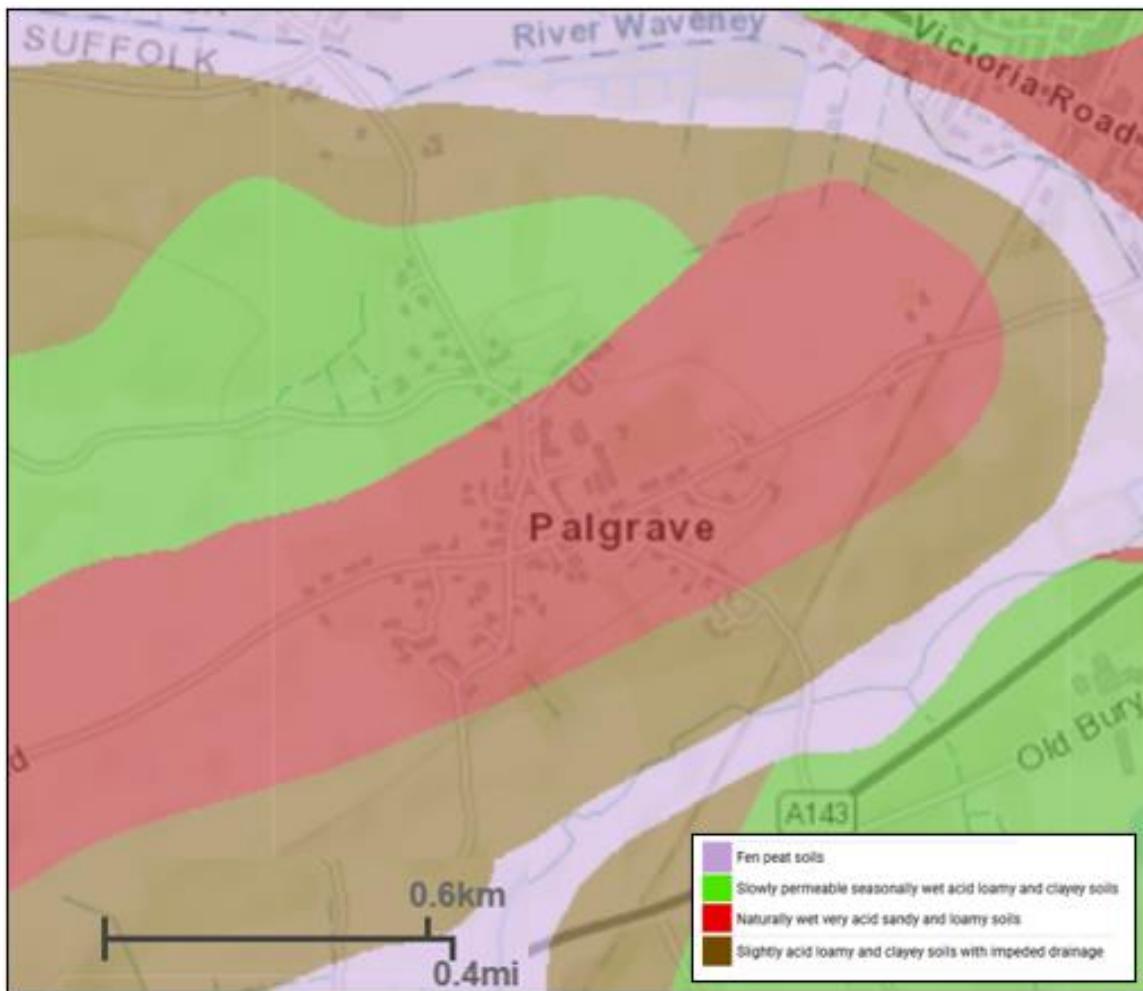


Figure 6- Soil Map (LandIS Soilscapes).

The soils surrounding Palgrave area are sandy (red) which is relatively free draining and covers most of the village. However, there is less free draining loam and clay (green) present along Lows Lane and Goulds Close through which water drains more slowly into the ground and excess surface water runoff is greater. Clayey soils (brown) surround the village which cause reduced drainage along with fen peat soils (purple) follow the River Waveney and similarly can cause naturally wet areas.

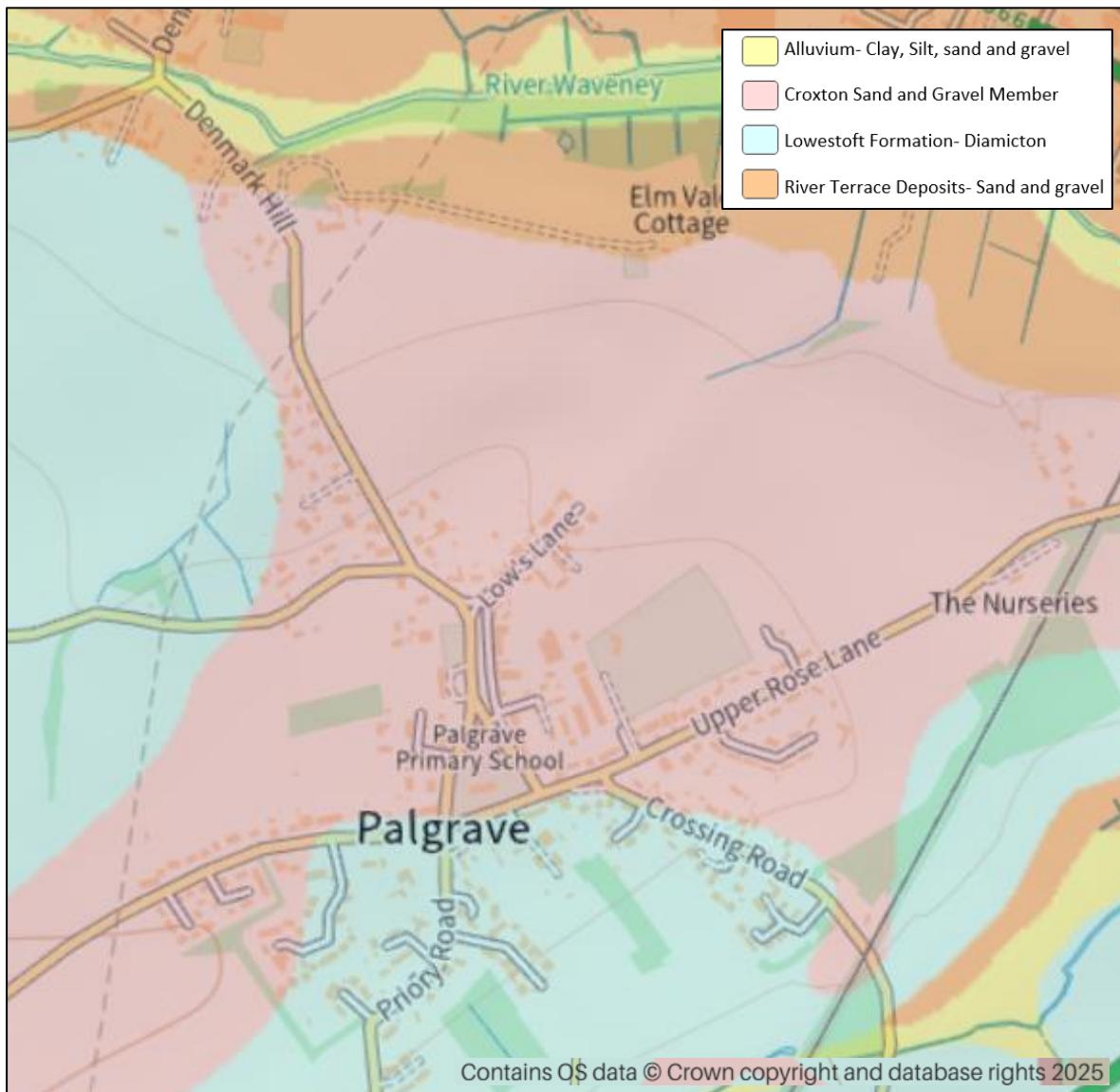


Figure 7- Superficial Geology (BGS Viewer).

Lowestoft Formation 'Diamicton' is present locally and underlies half the village (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 into the ground.

Croxton Sand and Gravel Member underlies the other half of the village which is described by the British Geological Survey as sand and gravel. This generally has a higher permeability, meaning water will tend to infiltrate instead of running off resulting in reduced flood risk typically.

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

Internal flooding was experienced in Goulds Close on 28<sup>th</sup> May 2024.

The nearest rain gauge, monitored by the Environment Agency (EA) is in Eye (~4 miles South of this location) which provided rainfall data during the period of flooding. Rainfall data has been obtained for the two most recent recorded dates of internal flooding.

- 21<sup>st</sup> May - recorded 30.02mm of rainfall in a 24-hour time period.
- 28<sup>th</sup> May – recorded 4.50mm of rainfall in a 24-hour time period.

We understand however that the rain gauge location is far enough away that more localised weather would not have been picked up by this.

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

Detailed descriptions of each investigation area can be found below.

### **1. Goulds Close**

Several previous internal flooding events have been recorded at more than one property. Reports dating back to 2016 described recurring flooding issues originating from the pond located at the top of Millway Lane. During periods of heavy rainfall, the capacity of the pond is overwhelmed and therefore the pond overflows, causing water to flow down towards Goulds Close. Shallow kerbs and low property thresholds resulted in flood water entering properties.

Road gullies along Priory Road and Lows Lane have been reported as blocked, likely due to debris being carried downhill in floodwater. Previous reports have identified four properties affected by flooding, with varying degrees of impact. Some residents have reported garden flooding, while others have experienced more severe incidents, with external flood depths recorded as two feet.

Due to this being a reoccurring incident, SCC Highways undertook an investigation and consequently implemented a new drainage scheme designed to help alleviate the issues. The scheme included construction of a new headwall and pipe network with new chambers and gullies connecting into the existing drainage. These works were completed in January 2017. Some reports, made by the residents, were submitted during the period between the works ordered and the completion of the scheme. As a result, further investigations by SCCs Floods Team were deferred until

after the works had been carried out. The work by SCC Highways was completed in 2017.

In January 2025, Mid Suffolk District Council (MSDC) contacted SCCs Floods Grants Team as their tenants were struggling to get contents insurance following multiple flooding events. MSDC wanted to help increase the resilience of their tenanted properties to future flood events and have sought advice as to what can be done. They had been liaising with the residents to get more information and requested a site visit with SCCs Floods Team to discuss the situation further.

'Property A' on Goulds Close most recently flooded in May 2024. SCC Floods Team attended a Site visit on the 20<sup>th</sup> of March 2025 with MSDC representatives. During the site visit, two residents shared their experiences and pointed out the areas where the flooding accumulate the most. They also indicated how high the water had risen around and within their properties during past flooding events. One resident provided documented photos over the years to show the reoccurring issue and provide us with a clearer understanding of the ongoing issue.

In summary:

- Prolonged rainfall exceeded the capacity of the drainage network along Priory Road and Lows Lane.
- Debris was carried along Priory Road and Lows Lane blocked drains.
- Flood water could not flow into drainage assets.
- Subsequent drainage improvements between the pond, Priory Road and Lows Lane were carried out back in 2017.
- Flood water continues to overwhelm drainage and block gullies, flooding properties on Goulds Close.

LLFA Recommended actions:

- Residents to install Property Flood Resilience (PFR) measures.
- Suffolk Highways to ensure the completion of highway drainage asset cyclic maintenance on Lows Lane.
- Residents/Parish Council to consider joining the Community Self Help scheme to enable small scale clearance of drainage assets.
- Suffolk Highways to investigate the drainage issues and consider increasing the frequency of gully clearance in this location.
- Suffolk Highways to review levels in highway and assess whether pierced chamber covers, additional gullies or realignment of kerb line would reduce flood flows towards properties.
- Landowners / General public to report any observed blockages along Priory Road, Lows Lane and Goulds Close on the Suffolk Highways Online Reporting Tool.
- MSDC to investigate the drainage issues in Goulds Close and repair/improve as required.

## 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- Aftermath of flooding, height line and muddy debris.*



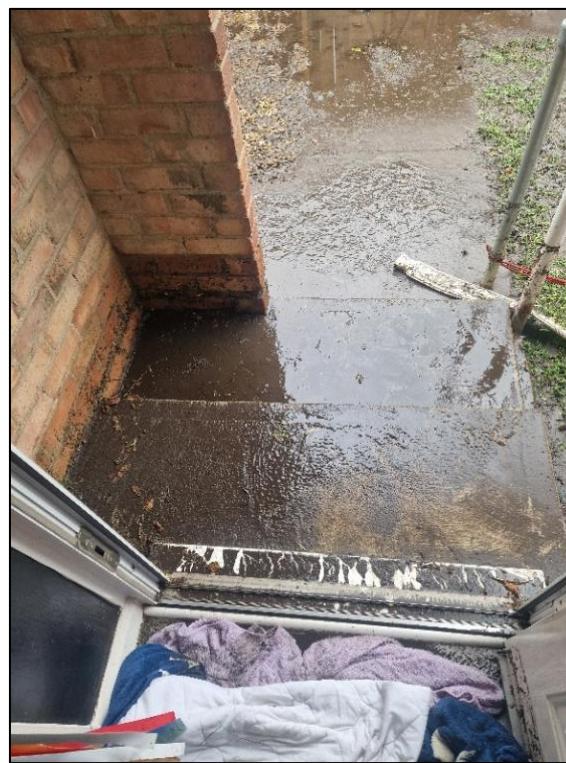
*Image 2- Flooding by the pond on Priory Road (Lows Lane junction).*



*Image 3- Flooding at Goulds Close.*



*Image 4- Flooding and debris accumulation at Goulds Close, private road behind.*



*Image 5- Aftermath of Flooding, height line and muddy debris left.*

**Site visit day 20<sup>th</sup> March 2025:**



*Image 6- Looking up Lows Lane, shallow kerb for parking.*



*Image 7- Residents Photo of the same location as Image 6 when flooded.*



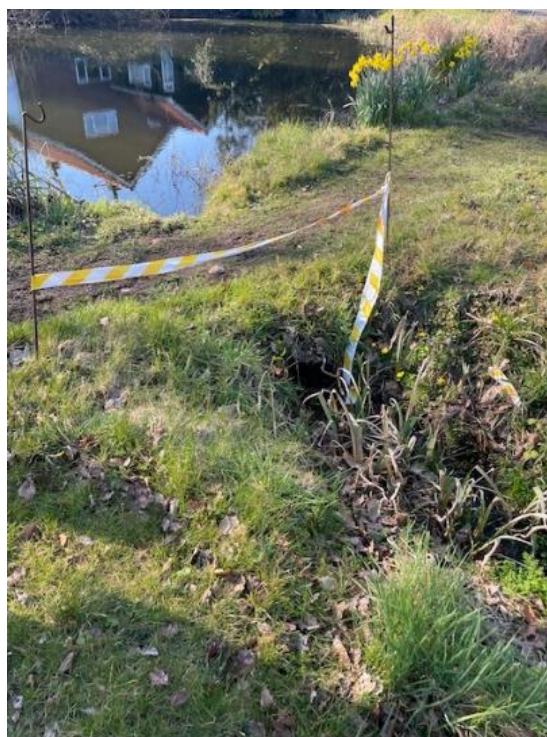
*Image 8- Back road at Goulds Close, leads to parking for residents.*



*Image 9- Front gardens of Goulds Close.*



*Image 10- Inlet from pond to pipe system from highways scheme in 2017.*



*Image 11- Inlet from pond and ditch before entering pipe system from highways scheme in 2017.*



*Image 12- Field at the end of Goulds Close. 2017 highways scheme ends here with a headwall within the bushes.*

## **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, 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
Internal Drainage Board	Asset Owner
Babergh & Mid 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

### **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 the storm and prior to publishing of this report.

<b>Action</b>	<b>Risk Management Authority</b>	<b>Progress</b>
CCTV of drainage pipes under Goulds Close	MSDC	Completed- no issues with private drainage or highways drain running along Goulds Close
Site visit and desktop study	SCC Floods Team	Completed
Property Flood Resilience (PFR) measures installed to buildings to reduce damage caused by flooding	MSDC	Completed- Added flood barriers, drainage non-return valves, brickwork repointing and brickwork waterproofing up to 600mm.

Scheduled street-sweeping along Lows Lane	MSDC	Added to schedule
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## 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 Palgrave. They have been derived from data and evidence collated as part of the report and have been included having been considered realistic in their implementation. The implementation of actions falls to the responsible party. Progress on the action will be monitored by Suffolk County Council, but it should be acknowledged that the council has limited powers to enforce the implementation of recommended actions.

Action	Responsible Party	Timescale for response	Latest Progress Update for Actions
<b>Short Term Actions</b> (e.g. standard maintenance activity and initial investigation of options that can be undertaken with limited need for forward planning)			
Suffolk Highways to ensure the completion of public highway drainage asset cyclic maintenance on Lows Lane.	SCC Highways	Annually	
Suffolk Highways to assess levels and consider adding pierced/slotted chamber covers.	SCC Highways	6 months	
Investigate the drainage issues on the privately owned road; Goulds Close	MSDC	6 months	
Community self-help scheme for residences to safely maintain blocked gullies themselves	SCC Highways	6 months	
Sign up for weather alerts by the Met Office to be better prepared for potential flooding occurrences.	Residents	1-2 months	
<b>Medium Term Actions</b> (e.g. longer planning timescales and potential need to source funding but potential for greater impact)			
Consider installing Property Flood Resilience (PFR) measures to buildings to reduce damage caused by flooding	Residents or MSDC	12+ months	Further information on PFR measures can be found within SCC published "Flood Smart"

			Living" handbook.  There are currently no active PFR schemes being managed by the LLFA in Suffolk.
Deliver improvements to drainage in privately owned highway; Goulds Close, if investigation works suggest it is beneficial and viable,	MSDC	12+ months	
Suffolk Highways to consider increasing the frequency of gully clearance from biennial to annual along Priory Road and Lows Lane.	SCC Highways	12+ months	
Suffolk Highways to survey and investigate whether additional gullies or kerb realignment would reduce flood water flowing towards Gould Close. If this is not possible other options should be explored.	SCC Highways	12+ months	
<b>Long Term actions</b> (significantly longer timescale and budget required with potentially greater positive impact)			
Discuss delivering improvements to capture water on Priory Road before it reaches Lows Lane and floods Goulds Close	SCC Highways, SCC Floods Team and MSDC	TBC	
Deliver improvements to drainage in Goulds Close, if investigation works suggest it is beneficial and viable	MSDC	TBC	
Improvements to highway drainage network/kerb alignment to manage surface water flows if investigation works suggest it is viable.	Suffolk Highways	TBC	
Deliver any interventions that are economically, technically and environmentally feasible and acceptable to improve the flood resilience	Landowners and/residents, supported by relevant authority, resource dependant (SCC LLFA, EA)	TBC	

## **Approval**

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

<b>Reviewer</b>	<b>Date of Review</b>

## **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.

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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