



## Investigation Report into the flooding on Upper Staithe Road, Stalham in 2017 - 2018

Report Reference: FIR041

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## **Justification for Flood Investigation**

The purpose of this report relates to Section 19 of the Flood and Water Management Act 2010. This legislation sets out that the County Council, in its role as Lead Local Flood Authority for Norfolk, should investigate the role and response of organisations to significant flooding incidents. Significant flooding is deemed to be those incidents that impact upon people, property and infrastructure.

The Norfolk Local Flood Risk Management Strategy Policy UC2 (Flood Investigation) sets out the thresholds the Lead Local Flood Authority will apply to its formal flood investigation role. This states an investigation will be undertaken where it is determined that;

- (a) There is ambiguity surrounding the source or responsibility for a flood incident, and/or;
- (b) There is cause to investigate the flood incident, due to either its impact, or consequence

In judging the impact or consequence of a flood event Norfolk County Council uses the criteria set out below;

- Any risk to loss of life or serious injury.
- One or more residential or business property flooded internally.
- One or more critical services/installations and vulnerable person's properties flooded internally; and/or rendered inoperable or their functions severely compromised due to the access to the premises being impassable; and/or resulting in a loss of service impacting on the local community.
- Any section of a national category 3 road or above made impassable due to flooding; and/or flooding to priority 1 and 2 gritting routes.
- Flooding adversely impacting a rail link by making it impassable.

It was deemed necessary to complete a formal Investigation Report into the flooding in Stalham as a property was internally flooded on multiple occasions.

This impact met Norfolk County Council's threshold for triggering the undertaking of a formal flood investigation.

The flood investigation report aims to:

- provide a transparent and consistent review of recent flooding.
- identify those organisations and individuals who have responsibility to manage the causes of the flooding.
- identify what their response has been or will be to the flooding.
- make recommendations as to how the flood risk could be mitigated or reduced.
- provide new evidence of the level of risk faced by communities in Norfolk that can be used in current funding bids in support of flood mitigation schemes.

Mitigation measures include property level protection: reinstating lost drainage features: reviewing or increasing maintenance regimes and increasing the capacity of the drainage network.

The flood investigation report cannot:

- Resolve the flooding issues or provide designed solutions.
- Force authorities to undertake any of the recommended actions

## Flooding on Upper Staithe Road

### Description of the area

The property sits in a relatively flat area close to the Norfolk Broads. The close proximity to the broads means there is a high-water table in the area. A ditch runs along the back of the property in which water drains into from the roofs of the surrounding property and the land.

### Flood incidents on Upper Staithe Road

The property was flooded on the following dates:

<b>Date</b>	<b>Flood Report</b>
29 <sup>th</sup> November 2016	External flood report received from Norfolk County Council by email on the 28 <sup>th</sup> November 2019 (FWF/16/1587)
09 <sup>th</sup> May 2018	External flood report received from Norfolk County Council by email on the 28 <sup>th</sup> November 2019 (FWF/18/1585)
02 <sup>nd</sup> June 2018	External flood report received from Anglian Water by email on the 02 <sup>nd</sup> December 2019 (FWF/18/1582)
4 <sup>th</sup> June 2018	Internal flood report received from resident on 6 <sup>th</sup> December 2018 by letter (FWF/18/1/7487)
30 <sup>th</sup> April 2018	Internal flood report received from resident on 6 <sup>th</sup> December 2018 by letter (FWF/18/1/7486)
23 <sup>rd</sup> June 2016	Internal flood report received from resident on 6 <sup>th</sup> December 2018 by letter (FWF/16/1/7485)

In all occasions heavy rain is reported by the resident.

Norfolk County Council has sought to use data from rain gauges where incidents of flooding are located within a 2.5 km radius of the instrumentation. This distance meets the requirements of British Standards and aims to capture localised rainfall patterns. There are no rain gauges within 2.5km of the affected property.

### Response

Following the occurrences of flooding, actions were taken by a number of organisations to determine the cause of the flooding.

- Anglian Water met with the Internal Drainage Board to undertake a site visit and establish the causes of flooding in the area
- Anglian Water undertook a drainage survey in August 2018 to establish the efficiency of the system in the area
- Anglian Water adopted a portion of the surface water drainage system situated within the catchment
- Norfolk County Council met with the Internal Drainage Board and Anglian Water in June 2019 to discuss the drainage system and whether any further actions needed to be taken in the area to reduce the risk of flooding

### Findings

The Anglian Water Drainage Survey found that the system was working as it should be with the exception of a broken manhole cover. The manhole cover was replaced; however, it is not believed that this was contributing to the flooding.

When Anglian Water adopted the surface water drainage system in the area they disconnected the outfall of the ditch, which previously discharged into the River Ant. Since the ditch was disconnected the frequency of flooding has been reduced. It is believed that prior to this change during periods of heavy rainfall the level of the River would rise causing the water to back flow into the ditch contributing to flooding. Additionally, a number of the properties situated either side of the ditch drain water from the roof of their properties into the ditch, contributing to the overflowing of the ditch. The ditch is filled with a large amount of vegetation reducing its capacity.

The property sits at a low point within the catchment increasing its susceptibility to flooding. The flood water entered the property through low thresholds.

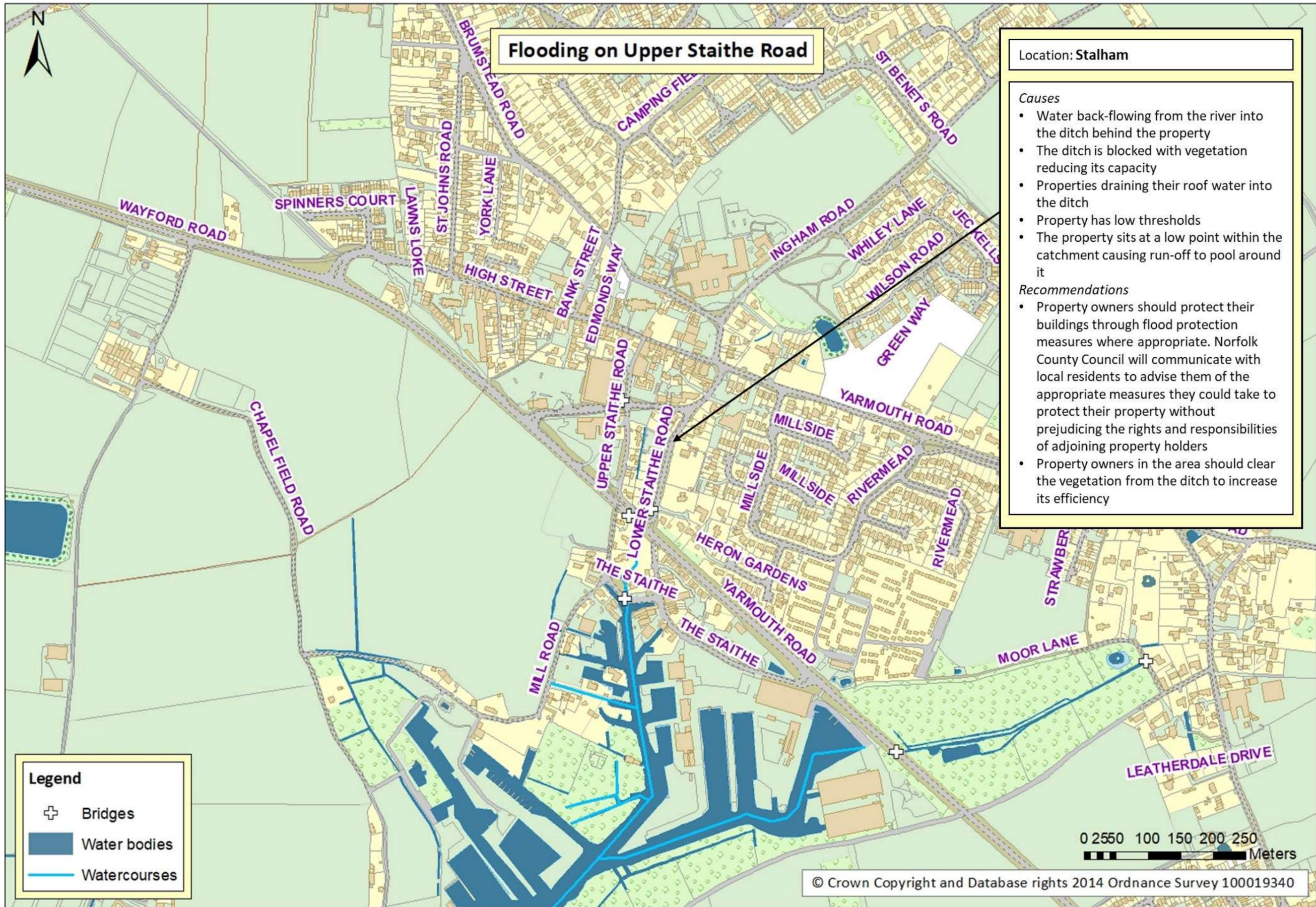
#### Recommendations

- The property owner should protect their buildings through flood protection measures where appropriate. Norfolk County Council will communicate with local residents to advise them of the appropriate measures they could take to protect their property without prejudicing the rights and responsibilities of adjoining property holders.
- Properties in the area should take action to maintain the ditch and reduce the amount of vegetation in the ditch to increase its capacity and reduce the risk of flooding

#### Historic flooding incidents within the catchment

Anecdotal evidence suggests the property experienced flooding historically at the following dates:

<b>Date of incident</b>	<b>Impact</b>	<b>Rainfall intensity</b>
2003 - 2004	Property was internally flooded	Unknown
2014 – 2015	Property was internally flooded	Unknown



### Flooding on Upper Staithe Road

Location: Stalham

- Causes**
- Water back-flowing from the river into the ditch behind the property
  - The ditch is blocked with vegetation reducing its capacity
  - Properties draining their roof water into the ditch
  - Property has low thresholds
  - The property sits at a low point within the catchment causing run-off to pool around it
- Recommendations**
- Property owners should protect their buildings through flood protection measures where appropriate. Norfolk County Council will communicate with local residents to advise them of the appropriate measures they could take to protect their property without prejudicing the rights and responsibilities of adjoining property holders
  - Property owners in the area should clear the vegetation from the ditch to increase its efficiency

**Legend**

- ⊕ Bridges
- Water bodies
- Watercourses

0 250 100 150 200 250 Meters

## **Disclaimer**

Although every effort has been taken to ensure the accuracy of the information contained within the pages of the report, we cannot guarantee that the contents will always be current, accurate or complete.

This report has been prepared as part of Norfolk County Council's responsibilities under 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 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 any recommendations in this Report are based on assumptions made by Norfolk 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.

Norfolk 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 Norfolk 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 the County Council highlighting flooding to properties at a street level.

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## **Appendix A - Key definitions and responsibilities**

### **What is flooding?**

Section 1 of the Flood and Water Management Act 2010 states that: "Flood" includes any case where land not normally covered by water becomes covered by water. In addition, this section adds the caveat: "But "flood" does not include – (a) a flood from any part of the sewerage system, unless wholly or partly caused by an increase in the volume of rainwater (including snow and other precipitation) entering or otherwise affecting the system, or (b) a flood caused by a burst water main (within the meaning given by Section 219 of the Water Industry Act 1991)."

### **What is internal and external flooding?**

For the purposes of this report, properties that have internally flooded are those where it is considered that water has entered the fabric of the building;

- Basements and below ground level floors are included.
- Garages are included if in the fabric of the building. Garages adjacent or separate from the main building are not included.
- Occupied caravans are included but not tents.

External flooding included those properties where water has entered gardens or surrounding areas which restricts access, affects the highway or where flooding has disrupted essential services to the property such as sewerage. For businesses this includes those where the flood waters are directly preventing them trading as usual.

### **What is Local Flood Risk?**

Local Flood Risk is defined by the Flood and Water Management Act 2010 as being flood risk from surface runoff, groundwater and ordinary watercourses.

- 'Surface runoff' means rainwater (including snow and other precipitation) which is on the surface of the ground (whether or not it is moving) and, has not entered a watercourse, drainage system or public sewer.
- 'Groundwater' means all water which is below the surface of the ground and in direct contact with the ground or subsoil.
- 'Ordinary Watercourse' means a watercourse that does not form part of a main river and includes a reference to a lake, pond or other area of water which flows into an ordinary watercourse.

### **Roles and Responsibilities of Risk Management Authorities**

Below is a short summary of those groups and Risk Management Authorities ("RMAs") that have a role in managing flooding within Norfolk. The listing of responsibilities includes those duties or powers that directly relate to managing the flood incidents or consequence. All RMAs have a duty to cooperate with other RMAs.

#### **1. Norfolk County Council (as Lead Local Flood Authority)**

- Duty to investigate significant flooding from any source.
- Duty to maintain a register of structures or features which affect flood risk from all sources.
- Power to undertake works to manage flood risk from surface run-off and groundwater.
- Powers to regulate activities on ordinary watercourses outside of Internal Drainage Board areas.
- Duties as a Category 1 Responder for Emergency Planning and the Fire & Rescue Service.

#### **2. District Councils**

- Powers to undertake works on ordinary watercourses outside of IDB areas.

- The Local Planning Authority for their District area and determine the appropriateness of developments and their exposure and effect on flood risk.
- Duties as a Category 1 Responder for Emergency Planning.

### **3. Internal Drainage Boards (“IDBs”)**

- A duty to act in a manner consistent with the national and local strategies and guidance when exercising FCERM functions.
- Duty to act in a manner consistent with Local Flood Risk Management Strategies when exercising other functions that may affect flood risk.
- Powers to regulate activities on ordinary watercourses within IDB areas.
- Exercise a general power of supervision over all matters relating to the drainage of land within their district.
- Powers to undertake works on ordinary watercourses within IDB areas.

### **4. Highway Authorities (Norfolk County Council / Highways England)**

- Powers to undertake works to manage water on the highway and to move water off the highway.
- Enforcement powers to unauthorised alterations, obstructions and interferences with highway drainage.
- Have responsibilities for culverts vested in the highway. Currently NCC discharges its responsibilities associated with bridges and culverts (whether as owner or highway authority) through the inspection of condition (undertaken by the Bridges team) and through maintenance activity (delivered on a as needs basis by the relevant Highways area team).

### **5. Water Companies**

- Undertake cost beneficial capital schemes to alleviate or eliminate flooding where the flood event is associated with a failure of their assets.
- Duty to provide, improve, maintain and operate systems of public sewers and works for the purpose of effectually draining an area.
- Are responsible for flooding from their foul, combined and surface water sewers, and from burst water mains.
- Maintain ‘At Risk Registers’ for Ofwat that record properties that have flooded from public foul, combined and surface water sewers and that are at risk of flooding again.
- Water companies respond to reports from the public of flooding associated with their assets and determine an appropriate response in line with their standards or customer service.
- Duties as a Category 2 Responder for Emergency Planning.

### **6. Riparian Owners**

- Duty of care towards neighbours upstream and downstream, avoiding any action likely to cause flooding.
- Entitled to protect their properties from flooding.
- May be required to maintain the condition of their watercourse to ensure that the proper flow of water is unimpeded.