



# **Norfolk** County Council

## Flood Investigation Report

Report Title:  
North Norfolk  
Happisburgh  
Whimpwell Street

Report Reference: 000240

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Prepared by Flood and Water Management Team

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# **Flood Investigation Report**

## **1. Reason for Flood Investigation**

It was deemed necessary to complete a formal investigation into the flood incident at Whimpwell Street, Happisburgh which occurred on 10<sup>th</sup> March 2013 as;

- a) A property on Whimpwell St was flooded internally and additional properties were flooded externally.
- b) There is ambiguity surrounding the source and responsibility of the flood incident.
- c) Records indicate that the external flooding of a similar nature has occurred on 2 other occasions over 6 months prior to this event and that water has covered the flooding location for prolonged periods.
- d) The flood event provides evidence for a greater future risk to property and the community
- e) There was flooding to a priority 1/2 gritting route making it impassable for a period of 48 hours

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

## **2. Location of flooding incident**

- 1.1 Happisburgh is located approximately 7 miles east of North Walsham. Whimpwell Street is situated on the south of the parish. The area of reported flooding is Whimpwell Street.

## **3. Flood Incident as reported**

- 3.1 Norfolk County Council (NCC) Highways and North Norfolk District Council responded to the flooded highway on Whimpwell Street on Sunday March 10<sup>th</sup>. NCC Highways then contacted the Flood and Water Management Team on the 12 March 2013.

## **4 Desk Study**

- 4.1 The desk study highlighted several issues regarding the flood site;
  - The underlying geology of the flood site indicates the infiltration of the sands and gravels is usually good.
  - The Environment Agency's Flood Map for Surface Water shows that there is a significant overland flow path which encompasses the flood site.
  - Is located within North Norfolk District Council's administrative boundary.
  - Is located within the Environment Agency (EA) Eastern

Admin area and the EA Eastern Water Management area.

- Anglian Water have a foul sewerage system in parts of Happisburgh but no surface water systems in the area affected
- Does not lie within Flood Zone 2 or Flood Zone 3.
- The Highway is drained via a surface water sewer drainage system which connects into the pond on Whimpwell Street. This system then continues via an outfall from the pond into a 150mm diameter surface water sewer which then outfalls at the corner of Lighthouse Lane into a land drainage ditch.
- Is 8.4 km away from the nearest raingauge.
- Over a period of years additional surface water connections have been added to the surface water drainage system which flows into the riparian system, thus increasing the volume of flow.
- Previous external flooding are found to have occurred;
  - I. October 2012.
  - II. 24<sup>th</sup> December 2012.
  - III. With a further event occurring on the 10<sup>th</sup> April 2013, during the investigation process.

4.2 From the desk study it is indicated that the management of local drainage is primarily the responsibility of Norfolk County Council Highways and Riparian Owners

## 5 Summary of site investigation and information received

5.1 Please see the annotated map attached to this report summarising the information received by third parties and through on-site investigations.

5.2 On Wednesday 20<sup>th</sup> March 2013 a site meeting was held between one of the affected residents and representatives of NCC's Flood and Water Management Team and the NCC Highways. Two other residents of Whimpwell Street were also later consulted.

## 6 Summary of impacts

6.1 Information relating to the impacts experienced at the flood location are detailed below; *(Please see Annex 6 within the PFRA Annexes to the final guidance for the classification of property types to be used in filling in the section below).*

**Risk to life:** None

**Internal Flooding:** Yes

**External Flooding:** Yes

**Critical services:** None

**Priority Gritting Routes:** Yes

**Obstruction of Access:** Yes

## **7 Investigation findings**

### **7.1 What caused the flooding?**

7.1.1 The flooding at Whimpwell St was experienced due to a number of factors;

- Heavy rainfall was experienced across Norfolk causing many low capacity systems to be exceeded.
- Limited capacity in the downstream pipe network (i.e. pipe diameter). Restrictions within the surface water drainage pipe of silt and a damaged pipe restricted the free outfall.
- Snow melt and a frozen saturated landscape were major contributory factors to the event.
- A large area of surface run-off was directed to the ditch network which has limited capacity to convey flows and overspilled from the field onto the highway.

See annotated map for more detail

### **7.2 Who has responsibilities to manage the cause(s) of the flood?**

7.2.1 With reference to the above factors, responsibility to manage the causes of the flood are identified below;

- Riparian owners are responsible drainage ditches within the field, part of the downstream pipe network and the pond.
- NCC Highways have a responsibility to maintain the highway drainage upstream and downstream of the pond as identified on the annotated map

### **7.3 What was their response in relation to the cause of the flood?**

7.3.1 NCC Highways stated that their priority is to ensure safe drainage of the carriageway.

NCC Highways employed a sewer cleansing contractor to clear the

area of flood water and to clean the riparian and highways surface water sewer drainage system, although not all of the downstream system is deemed to be their responsibility. This was followed up with CCTV surveying of the sewer.

7.3.2 A resident of Whimpwell Street carried out maintenance in line with their riparian responsibilities with regards to their element of the watercourse network.

7.3.3 The Flood and Water Management Team contacted Anglian Water and it was confirmed that they have no public surface water sewers at this location.

## **8 Recommendations**

8.1 The recommendations highlighted below are referenced against the factors detailed above and should not be considered in isolation.

8.1.1 Norfolk County Council Highways could:

- a) identify the appropriate level of maintenance of the upstream and downstream system that they are responsible for in light of the flooding events
- b) communicate with local residents and advise them of their riparian responsibilities for the upstream drainage system (including adjacent ditches) and the system downstream of the pond where it is not maintained by NCC Highways

8.1.2 In light of recent changes and the impact of flooding at this location NCC Highways could review their existing risk based approach in relation to their response to flooding incidents where there are implications for highways systems.

8.1.3 Norfolk County Council as Lead Local Flood Authority 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. Any communication will be dovetailed with 8.1.1 b) as above.

8.1.4 Norfolk County Council as Lead Local Flood Authority will work with riparian owners and risk management authorities to identify the potential for increasing attenuation and or reducing flow of the upstream drainage system

8.1.5 Norfolk County Council will work with the Environment Agency to identify the possibility of securing funding to mitigate flood risk in this community where it is necessary beyond the individual property level protection. This recommendation will be subject to priorities and

availability of resources.

- 8.1.6 Where structure or features are associated with significant flood risk these will be included on Norfolk County Council's public register. This will provide transparency for residents as to ownership and condition.

## **9 Addendum**

- 9.1 This addendum is an update on the actions and recommendations that have been carried out since the flood event in March 2013 and are as follow:

- 9.2 Norfolk County Council's Flood and Water Management identified those responsible for the maintenance of the downstream surface water system.

- 9.3 The surface water drainage system downstream of the affected property is part of the regular highway maintenance regime carried out by NCC Highways in accordance with Norfolk County Council's Transport Asset Management Plan.

- 9.5 Happisburgh Parish Council have:

- agreed to provide a contribution to the maintenance of the riparian owned watercourse downstream of the affected properties
- communicated with residents and riparian owners to remind them of their riparian responsibilities for the upstream drainage system (including adjacent ditches) and the system downstream of the pond.

- 9.6 Norfolk County Council's Flood and Water Management Team provided advice to a proposed development site upstream of the affected property. This included the incorporation of an attenuation area into the proposed development.

## **10 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.

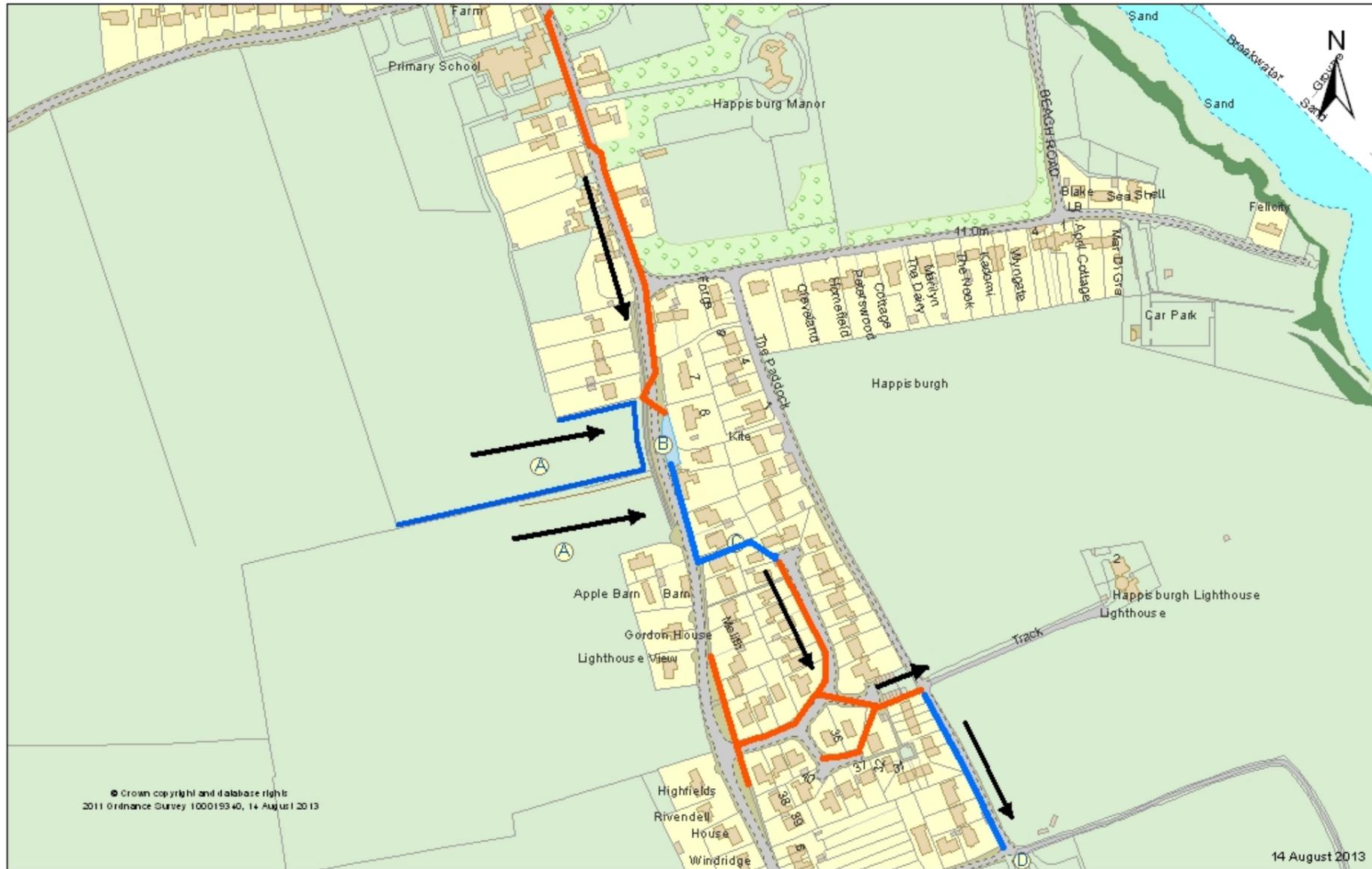
The findings of the report are based on a subjective assessment of the information available by those undertaking the investigation and therefore may not include all relevant information. As such it should not be considered as a definitive assessment of all factors that may have triggered or contributed 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.

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## Annotated Map

Flood Investigation Report:: Whimpwell St, Happisburgh

It should be noted that the order in which these are listed does not reflect the significance of the issue and may require more detailed analysis or surveying to ascertain their level of influence over the incidents experienced at this location.

- A A large area of surface run-off was directed to the ditch network across fields due to frozen ground conditions and heavy rainfall. The ditch network has limited capacity to convey flows and overspilled from the field onto the highway.
- B The downstream drainage network and pond receives surface water from both the highway and properties higher up the catchment and from the adjacent field at this point.
- C The downstream pipe system which is the overflow from the pond was found to have limited capacity (i.e. due to pipe diameter). There were restrictions within this surface water drainage pipe of silt and a broken pipe restricted the free outfall.
- D The outfall of the pipe flows into an open ditch

The key below denotes the individuals/organisation responsible for maintenance of the watercourse(s):

### Key

- Norfolk County Council Highways
- Riparian responsibility
- Direction of flow

Please note - The riparian responsibilities for the drainage system highlighted above has been established through the assessment of land registry documents and records of the highways drainage agreement for this area.

Whimpwell Street  
Happisburgh



Scale 1: 3000 Centred on 637965 330670



### Legend

- Parish Boundaries
- District Boundaries