

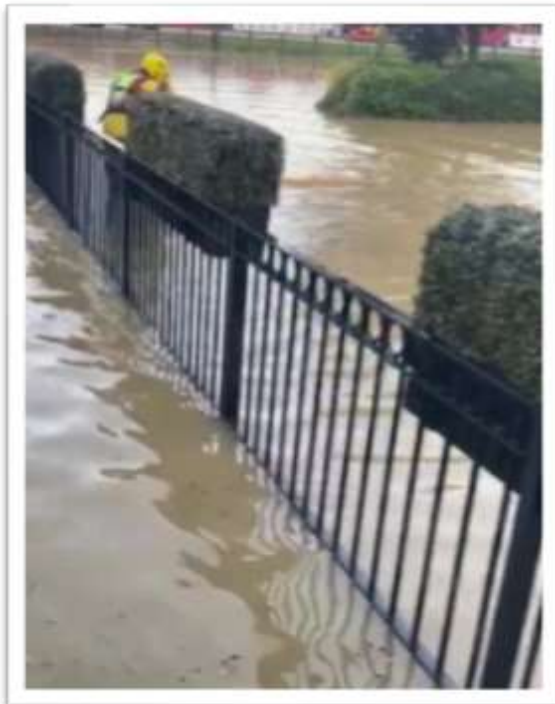


# Norfolk County Council

## Investigation Report into the flooding in Downham Market 2020

Report Reference: FIR\_060

Draft Report prepared by Abygail Hadley on 14<sup>th</sup> August 2020



## Summary

### **(a) Flooding incidents and causes**

This report includes the internal flooding of five properties on the 17<sup>th</sup> June 2020. All of the flooded properties were in the Downham Market area, however, properties fell across a number of different catchments. Internal flooding occurred on the following roads:

- Bridge Street
- Stonecross Road
- London Road
- Maltings Lane

The flooding that occurred was caused by

- Blockages in the surface water system
- Properties located on an overland flow path
- Private drainage unmaintained
- Run-off pooling at a low point in the catchment

### **(b) Key recommendations**

Our conclusion is that:

Property owners of affected properties should:

- Determine if it is appropriate for them to protect their buildings through flood protection measures
- Seek their own legal advice if they are concerned about the responsibilities and liabilities of themselves and/or others
- All property owners should remove any inappropriate surface water connections to the foul sewer system and direct flows to alternative points of discharge where it doesn't increase flood risk

Norfolk County Council should:

- Work with partner organisations to identify funding for flood mitigation. This would include assessing the potential to install property level protection measures, reduce run-off and increase the attenuation of flood water to reduce the impacts of flooding
- Seek to remind riparian owners of their responsibility to undertake appropriate levels of maintenance to sustain the efficiency of the drainage systems
- Review and monitor the delivery of recommendations within this and other relevant flood investigation reports
- Work with partner organisations to identify the potential for managing the amount of surface water entering their drainage system in flood events
- Work with residents to identify if blockages in the surface water system are in the private or highways drainage

## 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 Broadland Various in 2013-2017 as:

- multiple residential properties were internally flooded.
- multiple commercial properties were internally flooded.

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

The flood investigation report aims to:

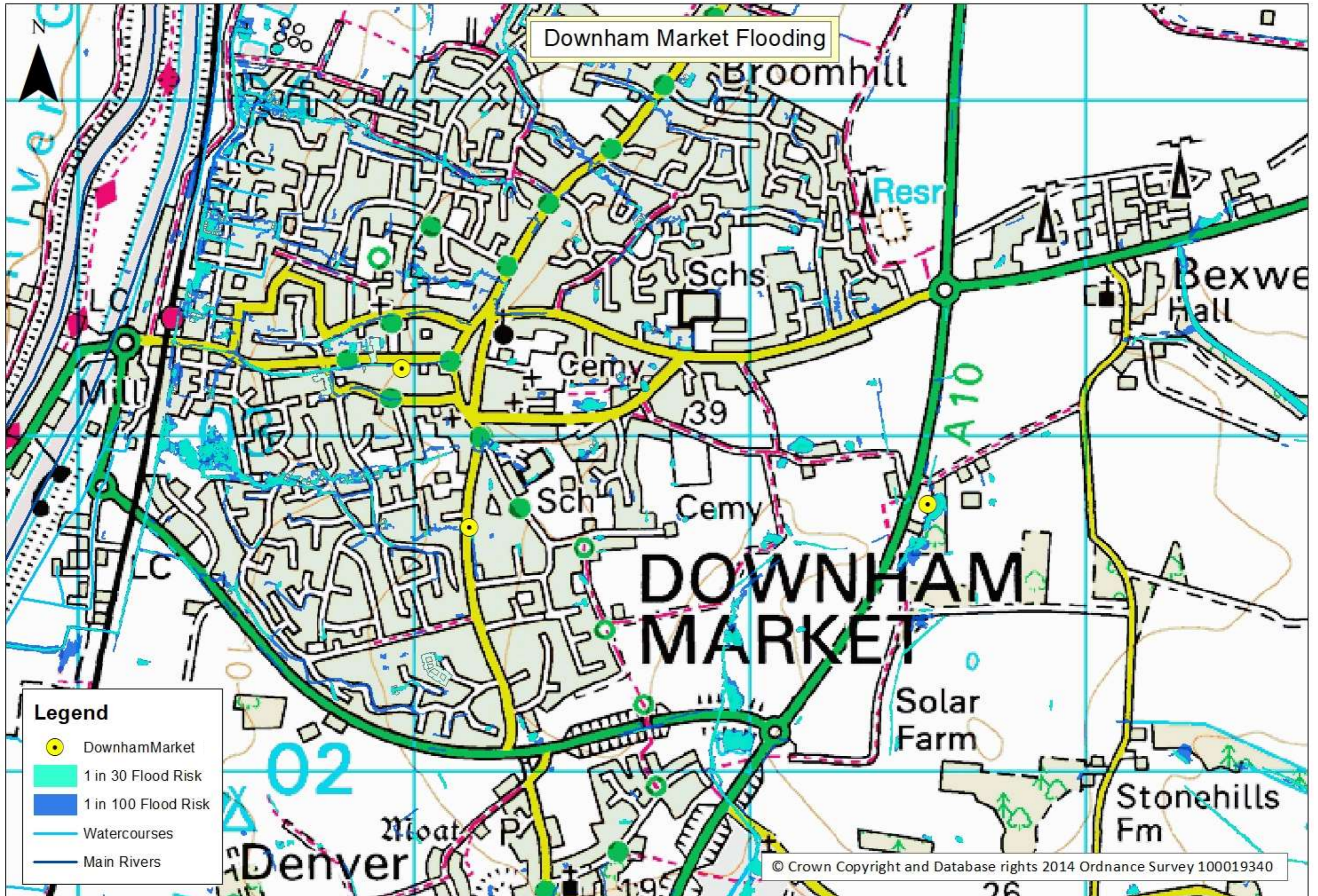
- provide a transparent and consistent review of recent flooding.
- identify those organisations and individuals who have responsibility to manage the causes of the flooding.
- identify what their response has been or will be to the flooding.
- make recommendations as to how the flood risk could be mitigated 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.







## Flood incidents within Downham Market

Within this catchment five incidents of internal flooding have been assessed as part of this investigation. These incidents are detailed in the table below and details when the incident occurred, how it was reported to the council, and what actions were taken in response to the flooding.

| Date of Incident | Incident as reported  | Who and What was the response to the flood incident  |
|------------------|---|--|
| 17/06/2020       | On the 17 <sup>th</sup> June 2020, one property was internally flooded on Bridge Street. This incident was reported by the Fire and Rescue Service by an electronic report. (FWF/20/2460)                       | <p>Fire and Rescue Service responded and pumped out.</p> <p>Norfolk County Council visited the affected property to offer advice and gather information.</p>   |
| 17/06/2020       | On the 17 <sup>th</sup> June 2020, one property was internally flooded on Stonecross Road. This incident was reported by the Fire and Rescue Service by an electronic report. (FWF/20/2419)                     | <p>Fire and Rescue Service responded and pumped out.</p> <p>Norfolk County Council visited the affected property to offer advice and gather information.</p> <p>The owner/occupier undertook maintenance on a private drainage system.</p> <p>An adjacent landowner undertook maintenance on a watercourse that forms part of the surface water drainage system.</p> |
| 17/06/2020       | On the 17 <sup>th</sup> June 2020, one property was internally flooded on London Road. This incident was reported by the Fire and Rescue Service by an online flood report. (FWF/20/2411)                       | <p>Norfolk County Council visited the affected property to offer advice and gather information.</p> <p>The resident took steps to minimise the impact of the flooding.</p>   |
| 17/06/2020       | On the 17 <sup>th</sup> June 2020, two properties were internally flooded on Maltings Lane. These incidents were reported by the Fire and Rescue Service by an online flood report. (FWF/20/2627, FWF/20/2464). | <p>Norfolk County Council visited the affected property to offer advice and gather information.</p> <p>An adjacent landowner undertook works to improve private drainage.</p>  |

### Recent rainfall within the catchment

This report seeks to draw on rainfall data to ascertain the intensity of the rainfall events experienced in the catchment that led to the flooding. This analysis is useful in assessing (in broad terms) if the design capacity of drainage systems within the affected areas was exceeded.

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. Where there is no available data within this radius this will be stated.

None of the incidents of internal flooding in this catchment are within 2.5km of a rain gauge.

### Historic flooding incidents within the catchment

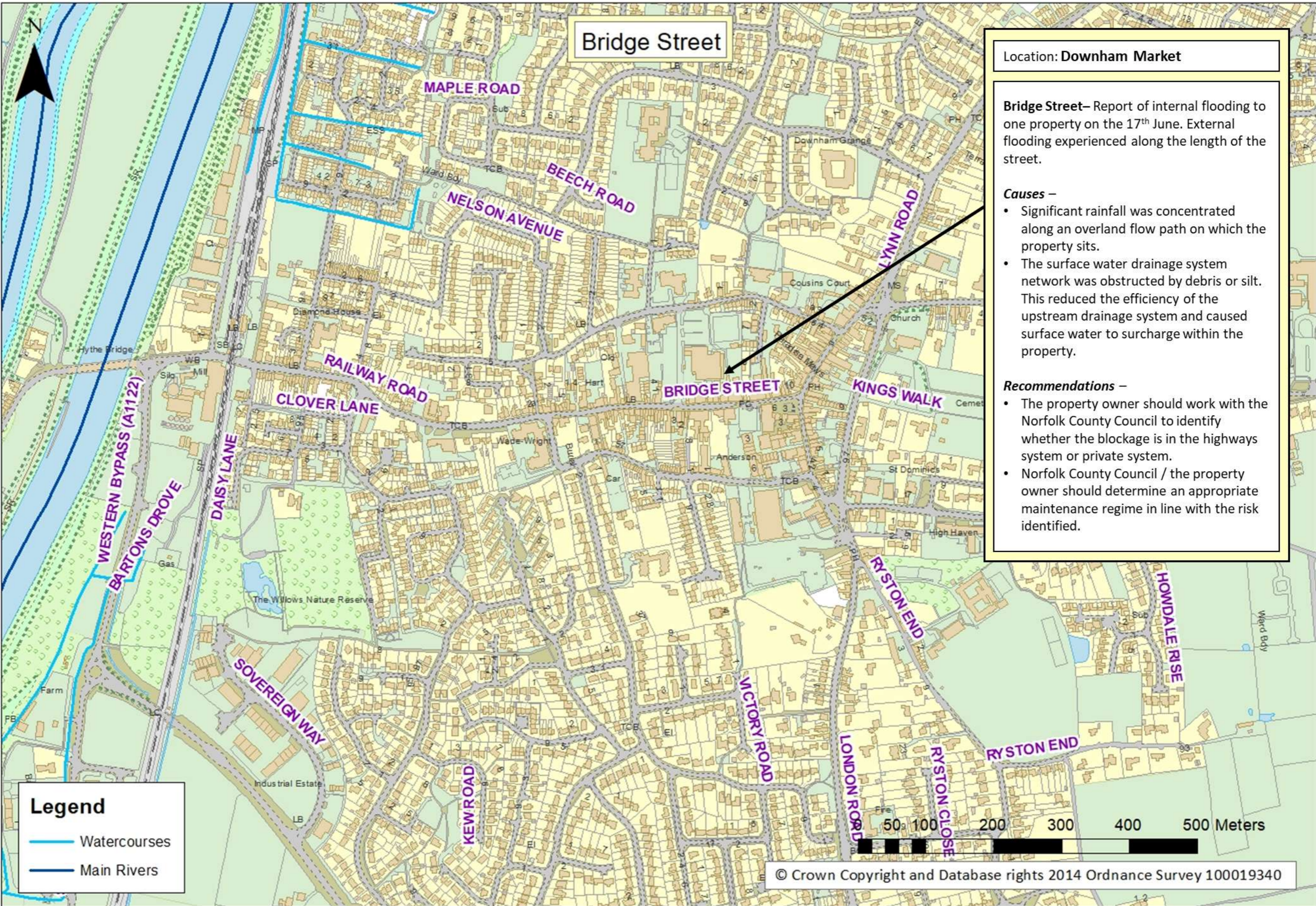
The following table lists flooding incidents within the catchment that have been recorded:

| <b>Date of incident</b> | <b>Impact</b>                                       | <b>Rainfall intensity</b> |
|-------------------------|---|---------------------------|
| 28/06/2016              | One property internally flooded on London Road.     | Unknown                   |
| 17/06/2015              | One property internally flooded on Bridge Street.   | Unknown                   |
| 10/07/2016              | One property internally flooded on Stonecross Road. | Unknown                   |
| August 2014             | One property internally flooded on Maltings Lane.   | Unknown                   |

### Causes of flooding within the catchment and recommendations

The findings of the investigation are detailed on the following pages. There is a map for each address affected. The maps detail the causes that led to flooding within the catchment as well as when and where they were experienced. It also sets out which Risk Management Authorities have responsibility to help manage the causes of the flooding. The maps set out recommendations to mitigate the causes and impacts of the flooding experienced within this catchment.





Bridge Street

Location: **Downham Market**

**Bridge Street**– Report of internal flooding to one property on the 17<sup>th</sup> June. External flooding experienced along the length of the street.

- Causes** –
- Significant rainfall was concentrated along an overland flow path on which the property sits.
  - The surface water drainage system network was obstructed by debris or silt. This reduced the efficiency of the upstream drainage system and caused surface water to surcharge within the property.

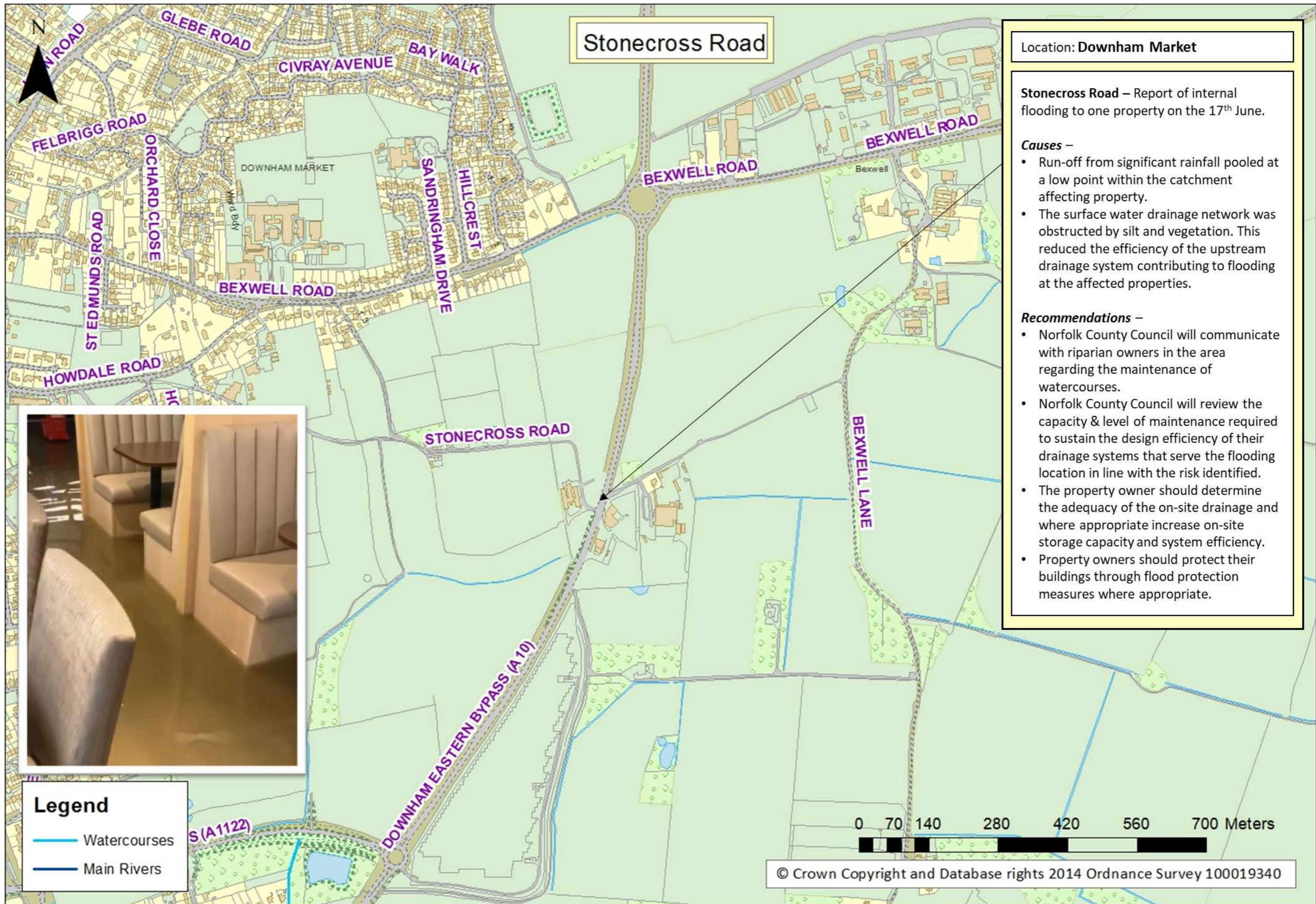
- Recommendations** –
- The property owner should work with the Norfolk County Council to identify whether the blockage is in the highways system or private system.
  - Norfolk County Council / the property owner should determine an appropriate maintenance regime in line with the risk identified.

**Legend**

- Watercourses
- Main Rivers







Location: Downham Market

**Stonecross Road** – Report of internal flooding to one property on the 17<sup>th</sup> June.

- Causes** –
- Run-off from significant rainfall pooled at a low point within the catchment affecting property.
  - The surface water drainage network was obstructed by silt and vegetation. This reduced the efficiency of the upstream drainage system contributing to flooding at the affected properties.

- Recommendations** –
- Norfolk County Council will communicate with riparian owners in the area regarding the maintenance of watercourses.
  - Norfolk County Council will review the capacity & level of maintenance required to sustain the design efficiency of their drainage systems that serve the flooding location in line with the risk identified.
  - The property owner should determine the adequacy of the on-site drainage and where appropriate increase on-site storage capacity and system efficiency.
  - Property owners should protect their buildings through flood protection measures where appropriate.



**Legend**

- Watercourses
- Main Rivers

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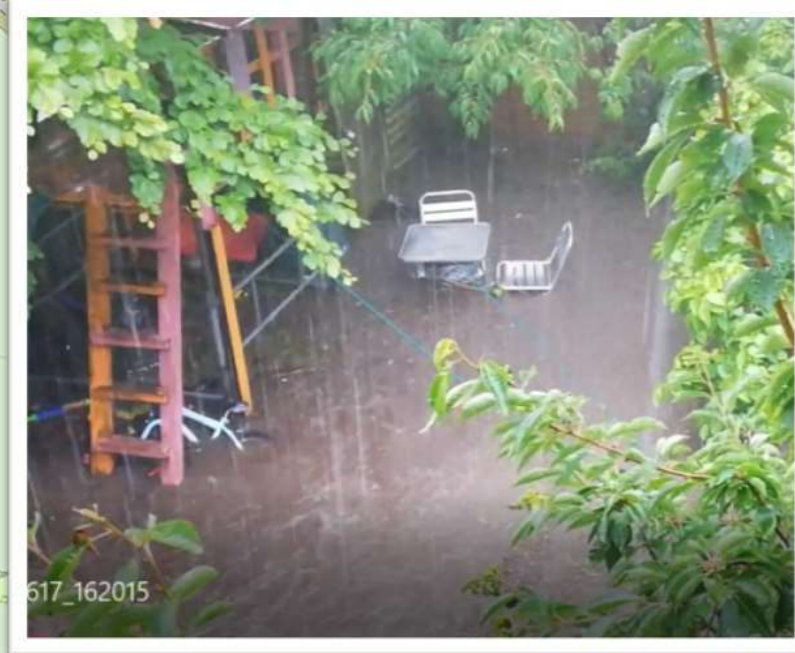
London Road

Location: Downham Market

London Road – Report of internal flooding to one property on the 17<sup>th</sup> June.

- Causes –**
- Run-off from rainfall pooled on the highway outside the property which is a low point within the catchment. Water flowed from the area of pooling towards the property.
  - Run-off from rainfall was directed towards the surface water drainage network. These flows could not be accommodated as the system was already overloaded. This directed flood water towards the affected property.

- Recommendations –**
- Norfolk County Council will consider options that would prevent water from pooling on the highway.
  - Norfolk County Council will investigate with third parties the potential to fund small scale improvement schemes to mitigate the risk experienced at this location.
  - Property owners should protect their buildings through flood protection measures where appropriate.

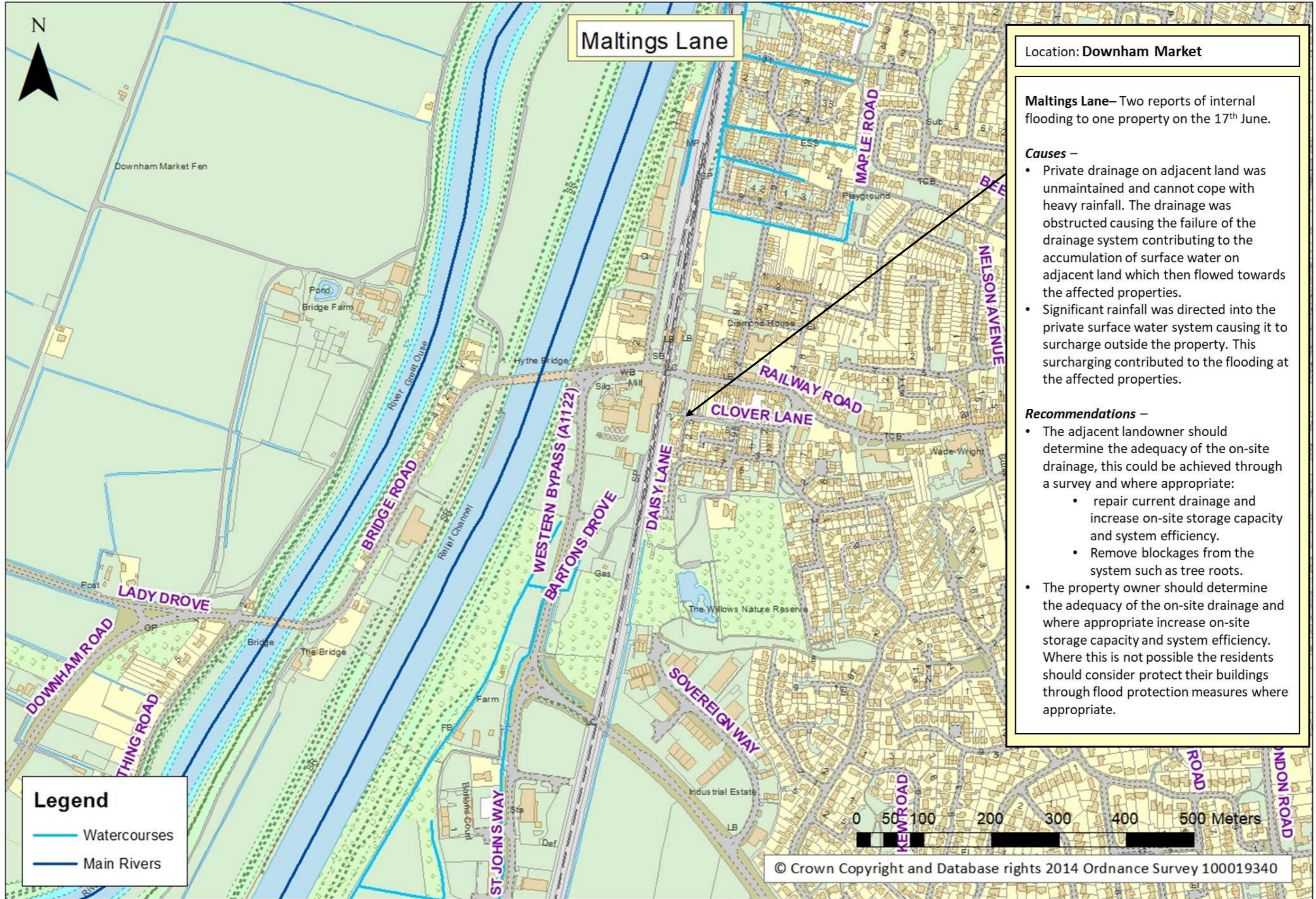


**Legend**

- Watercourses
- Main Rivers

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Maltings Lane

Location: **Downham Market**

**Maltings Lane**– Two reports of internal flooding to one property on the 17<sup>th</sup> June.

- Causes –**
- Private drainage on adjacent land was unmaintained and cannot cope with heavy rainfall. The drainage was obstructed causing the failure of the drainage system contributing to the accumulation of surface water on adjacent land which then flowed towards the affected properties.
  - Significant rainfall was directed into the private surface water system causing it to surcharge outside the property. This surcharging contributed to the flooding at the affected properties.

- Recommendations –**
- The adjacent landowner should determine the adequacy of the on-site drainage, this could be achieved through a survey and where appropriate:
    - repair current drainage and increase on-site storage capacity and system efficiency.
    - Remove blockages from the system such as tree roots.
  - The property owner should determine the adequacy of the on-site drainage and where appropriate increase on-site storage capacity and system efficiency. Where this is not possible the residents should consider protect their buildings through flood protection measures where appropriate.

**Legend**

- Watercourses
- Main Rivers

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## 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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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.