



## Investigation Report into the flooding in Roydon High Road

Report Reference: FIR040

Draft Report prepared by Nathalie Harris on 18<sup>th</sup> November 2019



## **Executive Summary**

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

This report includes the internal flooding of one commercial property over a series of dates ranging from 2014-2019. This property was included in the South Norfolk Various 2014-2018 flood investigation report. Works were undertaken to try to resolve the problem, but the issue has returned.

The flooding that occurred was caused by

- Surface run-off from roads
- Surcharging of the drainage system

This led to the persistent internal and external flooding of one commercial property.

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

Our conclusion is that:

Risk Management Authorities should:

- Review the appropriateness of their response to flooding
- Determine the integrity and/or capacity of their assets where they have contributed to the flooding of properties to understand the systems role in accommodating rainfall events as well as mitigating flooding

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

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
- Review and monitor the delivery of recommendations within this and other relevant flood investigation reports.

## **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 reported

A commercial property in Roydon has reported 5 incidents of flooding between 2014 and 2019. They have all been assessed as part of this investigation. These incidents are detailed in the table below.

<b>Date of Incident</b>	<b>Incident as reported</b>	<b>What was the response to the flood incident</b>
22/10/2014	<p>On the 22<sup>nd</sup> October 2014, a commercial property was flooded (0915). This was reported by:</p> <ul style="list-style-type: none"><li>• Fire and Rescue Service</li></ul> <p>Via</p> <ul style="list-style-type: none"><li>• Electronic report</li></ul>	<ul style="list-style-type: none"><li>• Fire and Rescue Service responded and pumped out</li></ul>
26/08/2015	<p>On the 26<sup>th</sup> August 2015, a commercial property was flooded (1903). This was reported by:</p> <ul style="list-style-type: none"><li>• Fire and Rescue Service</li></ul> <p>Via</p> <ul style="list-style-type: none"><li>• Electronic report</li></ul>	<ul style="list-style-type: none"><li>• Fire and Rescue Service responded and pumped out</li></ul>
19/02/2018	<p>On the 19<sup>th</sup> February 2018, a commercial property was flooded (6122). This was reported by:</p> <ul style="list-style-type: none"><li>• The property owner</li></ul> <p>Via</p> <ul style="list-style-type: none"><li>• An online flood report form</li></ul>	<ul style="list-style-type: none"><li>• Norfolk County Council undertook an investigation into the flooding. Works were undertaken to reduce the impact and frequency of the flooding.</li></ul>
10/03/2019	<p>On the 10<sup>th</sup> March 2019, a commercial property was flooded (7850). This was reported by:</p> <ul style="list-style-type: none"><li>• The property owner</li></ul> <p>Via</p> <ul style="list-style-type: none"><li>• An online flood report form</li></ul>	<ul style="list-style-type: none"><li>• Norfolk County Council undertook an investigation into the flooding.</li></ul>
14/06/2019	<p>On the 12<sup>th</sup> June 2019, a commercial property was flooded externally (1126). This was reported by:</p> <ul style="list-style-type: none"><li>• The property owner</li></ul> <p>Via</p> <ul style="list-style-type: none"><li>• Personal communication</li></ul>	<ul style="list-style-type: none"><li>• Norfolk County Council assessed the report</li><li>• Norfolk County Council carried out some jetting work and camera surveys but not all parts of the system were accessible.</li></ul>

### Causes of flooding within the catchment and recommendations

The findings of the investigation are detailed on the following pages. There is a map which details the causes that led to flooding. It also sets out which Risk Management Authorities

have responsibility to help manage the causes of the flooding. The map sets out recommendations to mitigate the causes and impacts of the flooding experienced within this catchment.

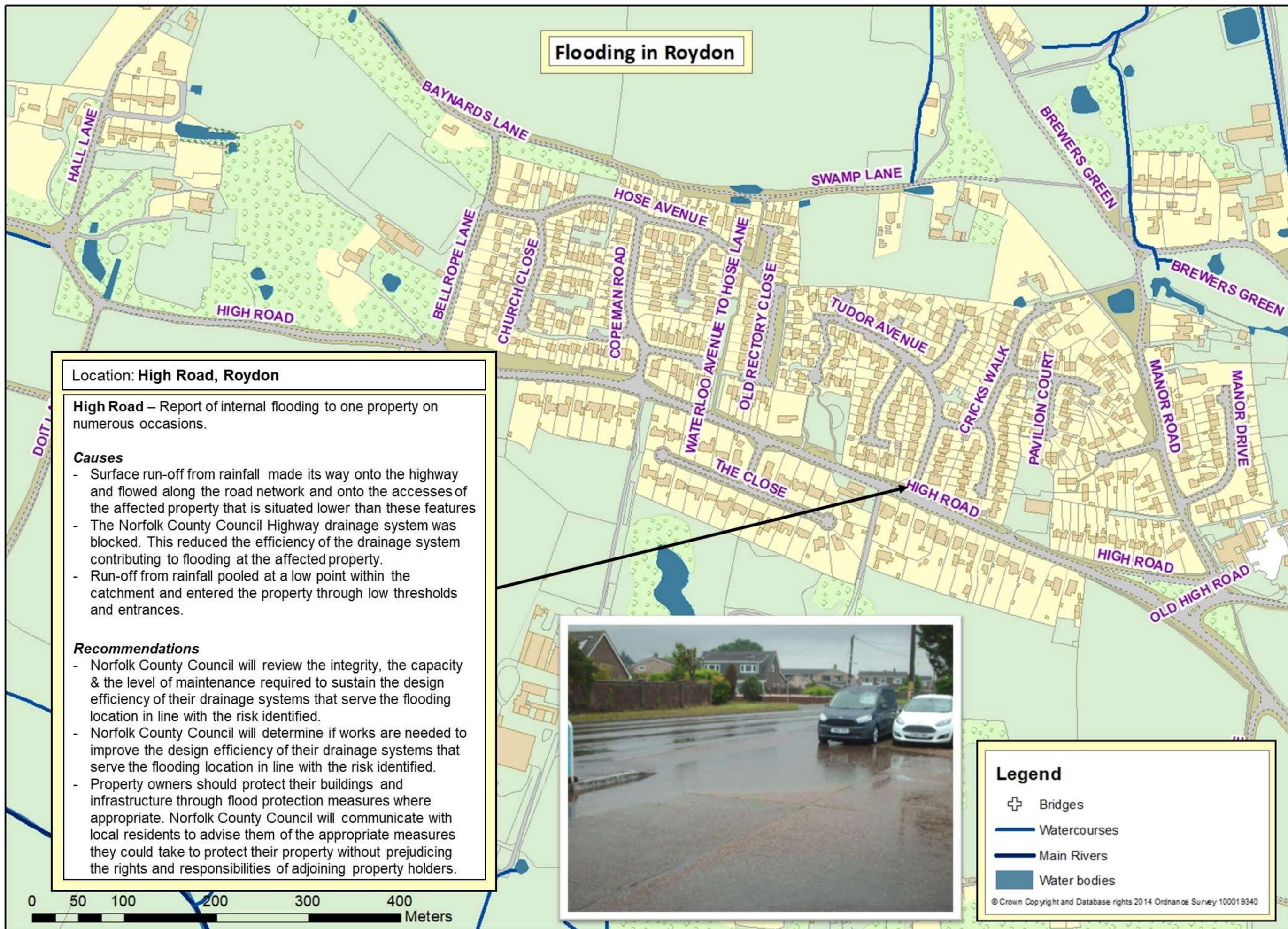
Following flooding to people, property and infrastructure;

- Risk Management Authorities should
  - communicate with affected residents where their assets have given rise to the flooding of properties.
  - review the appropriateness of their response to flooding.
  - Determine the integrity and/or capacity of their assets where they have contributed to the flooding of properties to understand the systems role in accommodating normal rainfall events as well as mitigating flooding.
- Property owners of affected properties should seek their own legal advice.
- NCC should
  - incorporate all relevant information of actual flooding into the review of the Norfolk Preliminary Flood Risk Assessment (“PFRA”).
  - review and monitor the delivery of recommendations within this and other relevant flood investigation reports

#### Response update.

Norfolk County Council have carried out works to trace the outfall of the drainage system from High Road. Access chambers have been located after areas were cleared of vegetation which allowed jetting work to begin to clear as much of the system as possible. There is another buried chamber that needs locating in order to jet more of the system. These works are ongoing.

## Flooding in Roydon



Location: **High Road, Roydon**

**High Road** – Report of internal flooding to one property on numerous occasions.

### Causes

- Surface run-off from rainfall made its way onto the highway and flowed along the road network and onto the accesses of the affected property that is situated lower than these features
- The Norfolk County Council Highway drainage system was blocked. This reduced the efficiency of the drainage system contributing to flooding at the affected property.
- Run-off from rainfall pooled at a low point within the catchment and entered the property through low thresholds and entrances.

### Recommendations

- Norfolk County Council will review the integrity, the capacity & the level of maintenance required to sustain the design efficiency of their drainage systems that serve the flooding location in line with the risk identified.
- Norfolk County Council will determine if works are needed to improve the design efficiency of their drainage systems that serve the flooding location in line with the risk identified.
- Property owners should protect their buildings and infrastructure 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.

### Legend

- ⊕ Bridges
- Watercourses
- Main Rivers
- Water bodies

© Crown Copyright and Database rights 2014 Ordnance Survey 100019340

## **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.

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

## **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.