



Flooding

To receive an update and consider the effectiveness of flood mitigation measures including SUDS.

An update on gully clearance will also be provided by TfB.

Transport, Environment and Climate Change Select Committee

8th September 2022



Overview

- Flood risk management
 - National and local context
 - Our role
 - Above and beyond
- Sustainable Drainage
 - How does it fit in the planning process?
 - What are SuDS?
 - How do SuDS manage flood risk?
- Flood risk management
 - Our approach
 - Looking forward



Aylesbury,
2014



Bourne End, 2014



Marlow, 2017

Flood risk management

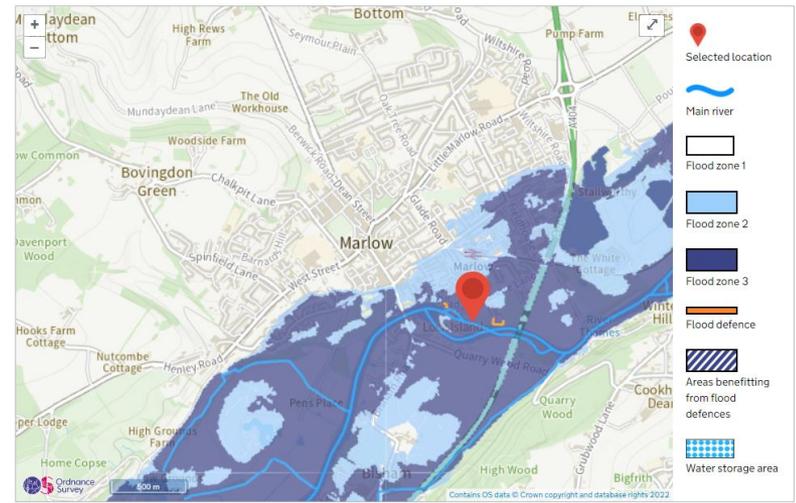
National flood risk context

- 2.4 million properties are at risk of flooding from rivers and sea nationally
- 3.2 million properties at risk of surface water flooding

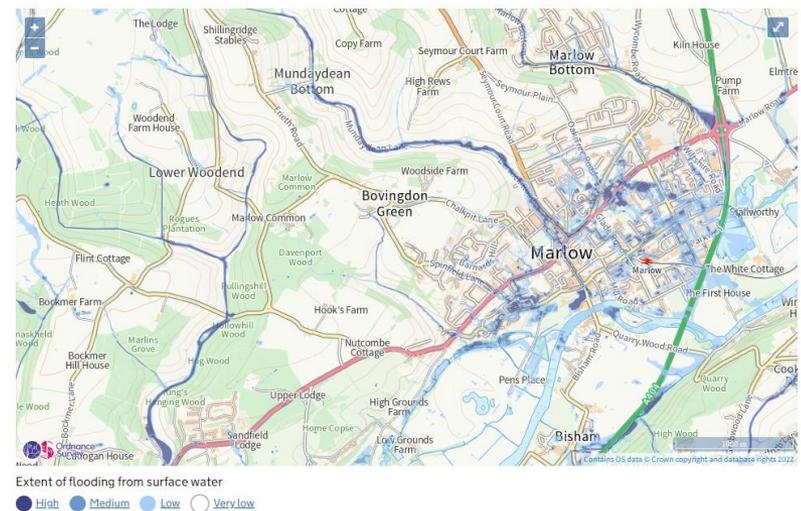
Local flood risk context

- 10.7% of land lies in Flood Zone 2 and 3
- 8.4% of land lies in areas at high or medium risk of surface water flooding (equivalent to over 4,000 properties)

The flood risk landscape is changing because of climate change

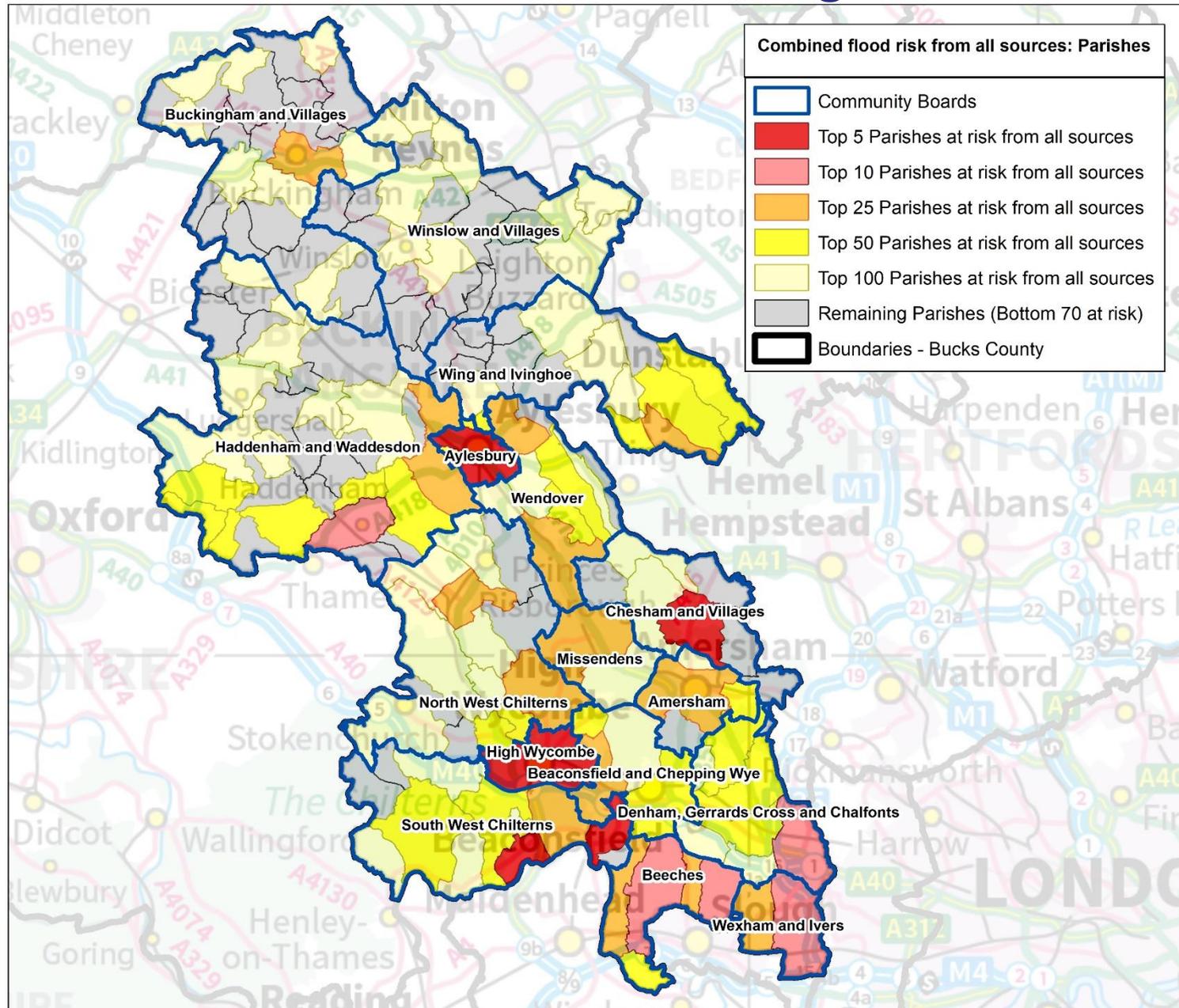


Source: <https://flood-map-for-planning.service.gov.uk/>



Source: <https://www.gov.uk/check-long-term-flood-risk>

Flood risk across Buckinghamshire



Flood risk management - our role

- Work in partnership with other Risk Management Authorities (e.g Environment Agency, water companies) to manage local flood risk (surface water, ordinary watercourse and groundwater including:
 - active involvement in two Regional Flood and Coastal Committees
 - Strategic Flood Management Group meeting 3 times per year
 - Regular meetings with other local authorities in our region
- Produce a Local Flood Risk Management Strategy- published 2017, revision is being scoped
- Investigate flooding and propose recommendations
- Respond to surface water drainage aspects of planning applications (>10 units)
- Maintain a flood asset register
- Consent for works on Ordinary watercourses
- Enforcement on Ordinary watercourses



Aylesbury, 2020

Flood risk management – who does what?

Risk Management Authority	Role
Lead Local Flood Authority – Buckinghamshire Council	<ul style="list-style-type: none"> to coordinate the management of local flood risk (surface water, ordinary watercourse and groundwater) statutory consultee in the planning process for major developments in relation to surface water drainage
Environment Agency	<ul style="list-style-type: none"> responsibility for taking a strategic overview of the management of all sources of flooding and coastal erosion has operational responsibility for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea (as well as being a coastal erosion risk management authority) statutory consultee in the planning process for sites in Flood Zone 2 or 3 or within 20 metres of a Main River
Water companies	<ul style="list-style-type: none"> responsible for managing the flooding and flood risk from public sewers and water mains.
Transport for Buckinghamshire	<ul style="list-style-type: none"> responsible for fixing drainage and flooding issues on highways and roads across Buckinghamshire
Bedford Group of Internal Drainage Boards	<ul style="list-style-type: none"> managing water levels in the watercourses within their area, see the Internal Drainage Board's area map permit works on an ordinary watercourse in an Internal Drainage Board (IDB) district under the Land Drainage Act 1991 IDBs are non-statutory consultees in the planning process, but local planning authorities will consult with IDBs in relation to drainage matters.
Riparian owners	<ul style="list-style-type: none"> are responsible for maintaining the watercourse or ditch running through or adjacent to their land applies to both Main Rivers and Ordinary Watercourses
Town and Parish councils	<ul style="list-style-type: none"> Being prepare by reviewing own risk management processes and create community flood plan Liaise with other agencies to be a point of contact within community and reporting flooding

Flood incident management – who does what?

Risk Management Authority	Role
Buckinghamshire Council – Resilience Service	<ul style="list-style-type: none"> • Plans for response to emergencies and control or reduce impact of emergency – category one responder • Co-ordinate as per the Flood Plan as part of a multi-agency response • Follow Incident Management Process and set up Incident Management Team as appropriate in a flood event • Set up rest centres for people evacuated due to flooding • Community networking to support emergency plans
Environment Agency	<ul style="list-style-type: none"> • Operational responsibility for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea • Issuing flood warnings
Water companies	<ul style="list-style-type: none"> • Responsible for managing the flooding and flood risk from public sewers and water mains.
Buckinghamshire Council, Highways Authority - Transport for Buckinghamshire	<ul style="list-style-type: none"> • Responsible for fixing drainage and flooding issues on highways and roads across Buckinghamshire • Road closures • Sandbags if appropriate
Emergency Services	<ul style="list-style-type: none"> • Police – co-ordination of emergency services during a major flood • Fire service – saving lives, may also pump out flood water
Buckinghamshire Council – Strategic Flood Management team	<ul style="list-style-type: none"> • Check water levels and forecast at Willows, Aylesbury during office hours and advice Director of risk and any recommendation to deploy temporary flood defences • Ask Aylesbury Town Council to deploy temporary flood defences if required and send out comms • Determine post flooding if a Section 19 Flood Investigation is required
Town and Parish Councils	<ul style="list-style-type: none"> • Implement own risk management processes from community flood plan • No duties but can encourage set up of volunteer flood groups/wardens in flood prone locations • Liaise with other agencies to be a point of contact within community

Flood risk management – what we do

- Capital programme of projects to manage local flood risk including a nationally funded resilience innovation Programme – Project Groundwater (2021 to 2027)
- Respond to drainage aspects of planning applications (<10 units) for the LPA
- Take opportunities in funding to:
 - Improve understanding of flood risk and undertake modelling
 - Deliver Natural Flood Management schemes
- Involvement in regional and national initiatives with professional bodies (ADPET, CIWEM, ASA), water companies (Smarter Water Catchments, Drainage and Wastewater Management Plans)
- Links with internal initiatives: tree planting, BNG, LNRS, NEP
- Provide flood warning and decision making for Willows estate, Aylesbury alongside Aylesbury Town Council
- Support operational Flood response to resilience team
- Provide support for community - Flood Mobile visit, Flood plans



Flood incident example – Buckingham December 2020

- Based on Flood Guidance Statement from Flood Forecasting Centre (**Met Office and Environment Agency, EA**) EA set up teleconference for partner responders, issued a flood alert for Upper Ouse and set up virtual area incident room (this was during Covid19)
- Properties in Buckingham began to flood prior to a flood warning being issued **by EA**
- **BC Resilience team** implemented Incident Management Process (IMP). Incident Management Team established & led by Service Director, supported by **Resilience team** and involving a **number of Council Services** (including Flood Management, Comms, Adult Social Care)
- Staff and members including **Local Authority Liaison officers (LALOs)** deployed to help local community
- **TfB** managed large number of road closures and diversions and issued sandbags
- **Town Council (TC)** acts as a co-ordinator of the Buckingham Flood Plan and TC staff volunteered to support community
- **Anglian Water** had pumping stations working at full capacity and staff visited locations where sewage flooding was experienced
- **Member and volunteers** from community opened Community Centre for food, drinks, and rest
- A survey of the impacts was carried out (**BC Community Safety Adviser and Town Council**)
- Some **residents** who had Property Flood Resilience measures, deployed those to their own properties
- **BC Strategic Flood Management team** initiated a Section 19 Flood investigation
- Follow up to Buckingham with Flood Mobile organised by **Community Board**



Flood incident example – Aylesbury Penn Road Oct. 2020

- **BC Resilience Team** deal with reports of property flooding. Flood boards requested from **TfB**. Flatbed truck of sandbags requested by BC resilience
- **Aylesbury Vale Housing Trust** assist residents evacuate their homes, find temporary welfare facilities and arrange replacement accommodation
- **Thames Valley Police** arrive on site to assist in managing traffic and identifying owners of flooded cars on Penn Road
- Flood Warning was issued for the general area by **Environment Agency**
- **Buckinghamshire Council Local Authority Liaison Officers** attend the site to assist
- **Southcourt Church** on Penn Road stayed open to offer welfare facilities to residents unable to use toilets or electricity in their own homes.
- **Penn Road residents** acted as responders during the event, in alerting their neighbours that flooding was occurring, and to turn their electricity off.
- **TfB** close Penn Road – local diversion route put in place
- Obstructions in river removed by **Environment Agency**
- **BC Strategic Flood Management team** initiated a Section 19 Flood investigation



Flooding to the highway at Penn Road (credit: Andrew Rysdale)

What is the LLFA role in the planning process?



- FWMA 2010 sought to deliver on the recommendations of the Pitt Review
- It established the Lead Local Flood Authority and its responsibilities for local flood risk, including surface water, ordinary watercourses and groundwater
- Part of the Act, known as Schedule 3 sort to establish a SuDS Approval Body, to have responsibility for the approval of proposed drainage systems in new developments and redevelopments
- Schedule 3 was never enacted due to lobbying by national housebuilders
- In April 2015, the Lead Local Flood Authority (LLFA) became a statutory consultee for surface water drainage on major developments
- The LLFA has a local arrangement in place to comment on minor applications (greater than three dwellings or 250m²)
- The LLFA advises the Local Planning Authority if proposals meet the NPPF and local policy requirements

What is sustainable drainage?

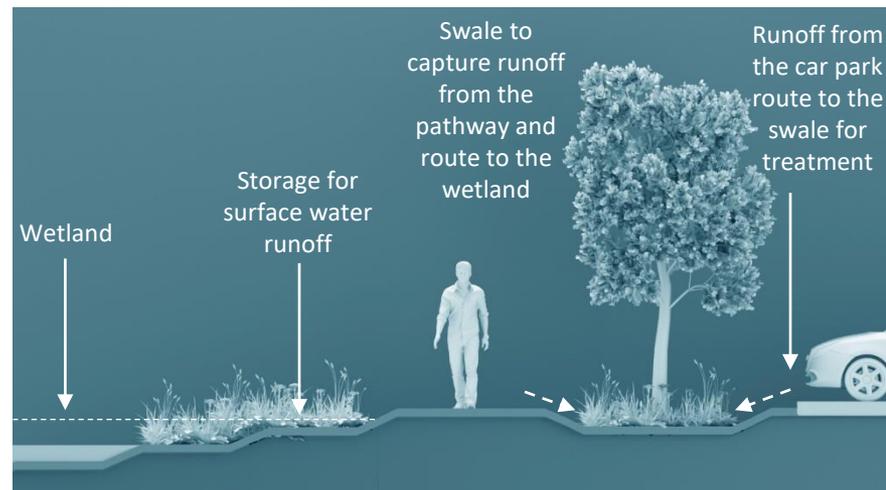
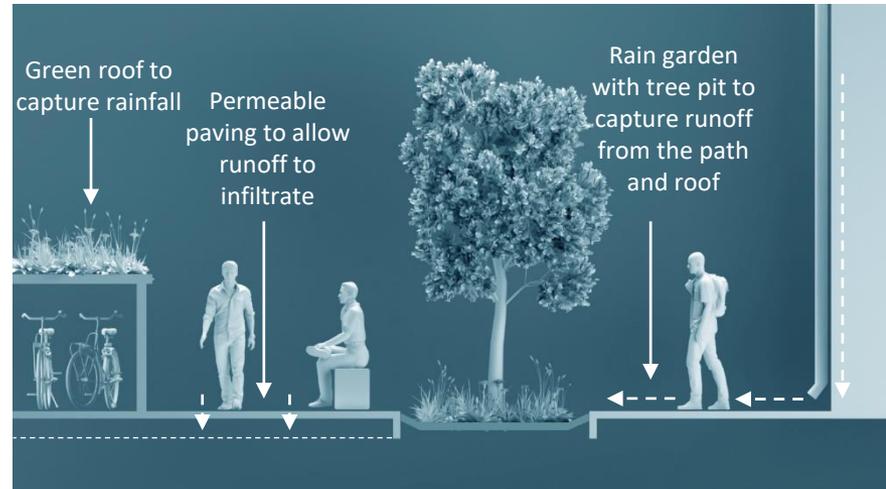
Images based on London Sector Guidance, Reimagining Rainwater

Sustainable Drainage Systems (SuDS) are an approaches to managing surface water that take account of:

- water quantity
- water quality
- biodiversity
- amenity

SuDS aim to mimic nature and typically manage rainfall close to where it falls.

SuDS can be designed to transport surface water, slow runoff down before it enters watercourses, they provide areas to store water and can be used to allow water to soak into the ground and encourage evapotranspiration.



How do sustainable drainage systems (SuDS) manage flood risk?

- New developments generally result in an increase of impermeable area and an increase in surface water runoff if left unmitigated. Therefore planning applications are required to provide a surface water drainage strategy to show how surface water runoff will be managed.
- Demonstrate compliance with the drainage hierarchy to determine a suitable method of surface water disposal, prioritising infiltration to the ground and discharging to a watercourse over a connection to the sewer network.
- Where surface water runoff is discharged to a watercourse, runoff rates will be controlled to ensure there is no increase in flood risk elsewhere.
- Surface water runoff will be safely contained on the development site up to the 1% Annual Exceedance Probability. There is an allowance for climate change (40%) included.
- Developers should prioritise SuDS to manage the surface water runoff from the site, particularly multi-functional SuDS - achieve water quality, biodiversity and amenity benefits.
- Developers should demonstrate how the surface water drainage scheme will be managed for the lifetime of the development



Permeable paving, Aylesbury



Swale, Waddesdon

Flood risk management – our approach

We cannot eliminate the risk of all flooding and coastal change, instead we can:

- Create climate resilient places
- Ensure today's growth and infrastructure is resilient in tomorrow's climate
- Be ready to respond and adapt to flooding

To ensure we are better protecting properties and reducing the impacts of flooding on peoples' lives and livelihoods

This is in line with the National Flood and Coast Risk Management Strategy 2021



Looking ahead

- Local Flood Risk Management Strategy revision– 2023
- Outcome of Defra project into the enactment of Schedule 3 (SuDS Approval Body) due October
- Delivery of projects
- Development of pipeline of projects from Flood Investigation work
- Delivering and developing Natural Flood Management schemes and linking with tree planting, Biodiversity Net Gain and LNRS initiatives
- Project Groundwater – working with communities to increase resilience to groundwater flooding through innovative measures
- Work with BC resilience team to improve resilience of communities
- Work more closely with Highways to deliver schemes