

Flood Risk Management Team

- Staffordshire County Council

- Andrew Brett – Acting Flood Risk Manager (Area Team Leader)

- Rural Business Forum
March 2026

Flood Risk Manager
Jamie Cooper

North Team
Area Team Leader
Chris Archer

Planning Officer
Roberta Barna

Planning Officer
Henry Wood

Planning & Project Officer
Caroline Parkin

FRM Technician
Katherine Burnett

Technical Support Officer
Hannah London

South Team
Area Team Leader
Andrew Brett

Project Officer
Emma Roberts

Planning
Adam Bushnell

Planning
Akash Koria

Project Officer
Peter Coddington

Planning Officer
Ahaura Keighley (16/04/2026)

Technical Support Officer
Ramadan Dejih

Community Engagement Team
Leader
Dr Lucinda Capewell

Project Officer
Chris Knight

Community Engagement Officer
Sonja Zmiko

Community Engagement Officer
Vacancy

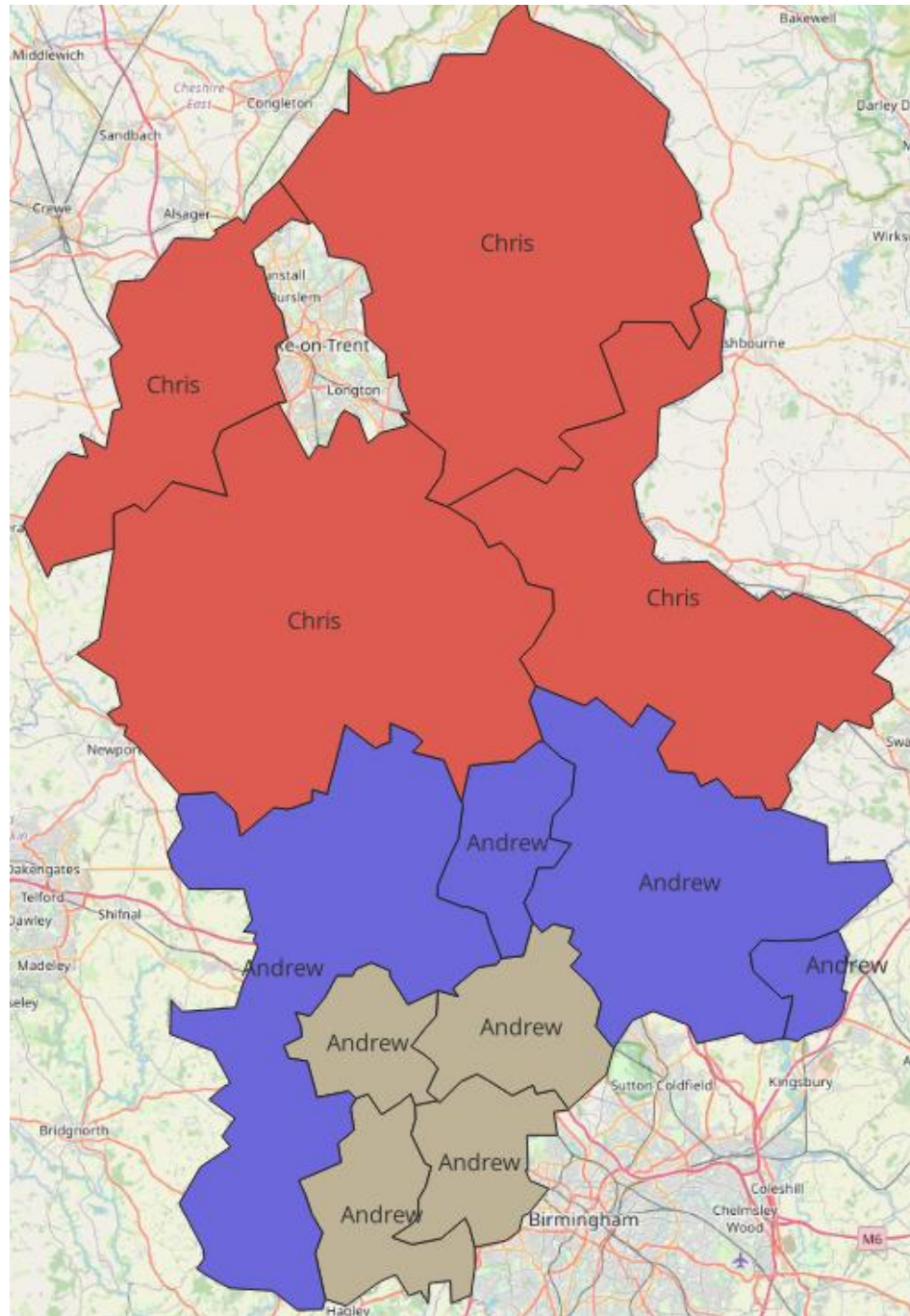
Land Drainage Engineer
Alex Knight

Land Drainage Engineer
Janet Askey 1/5 FTE

North Team

Projects and Planning:
Stafford BC
East Staffs BC
Newcastle BC
Staffs Moorlands DC

**New Community
Resilience Team
covering County**

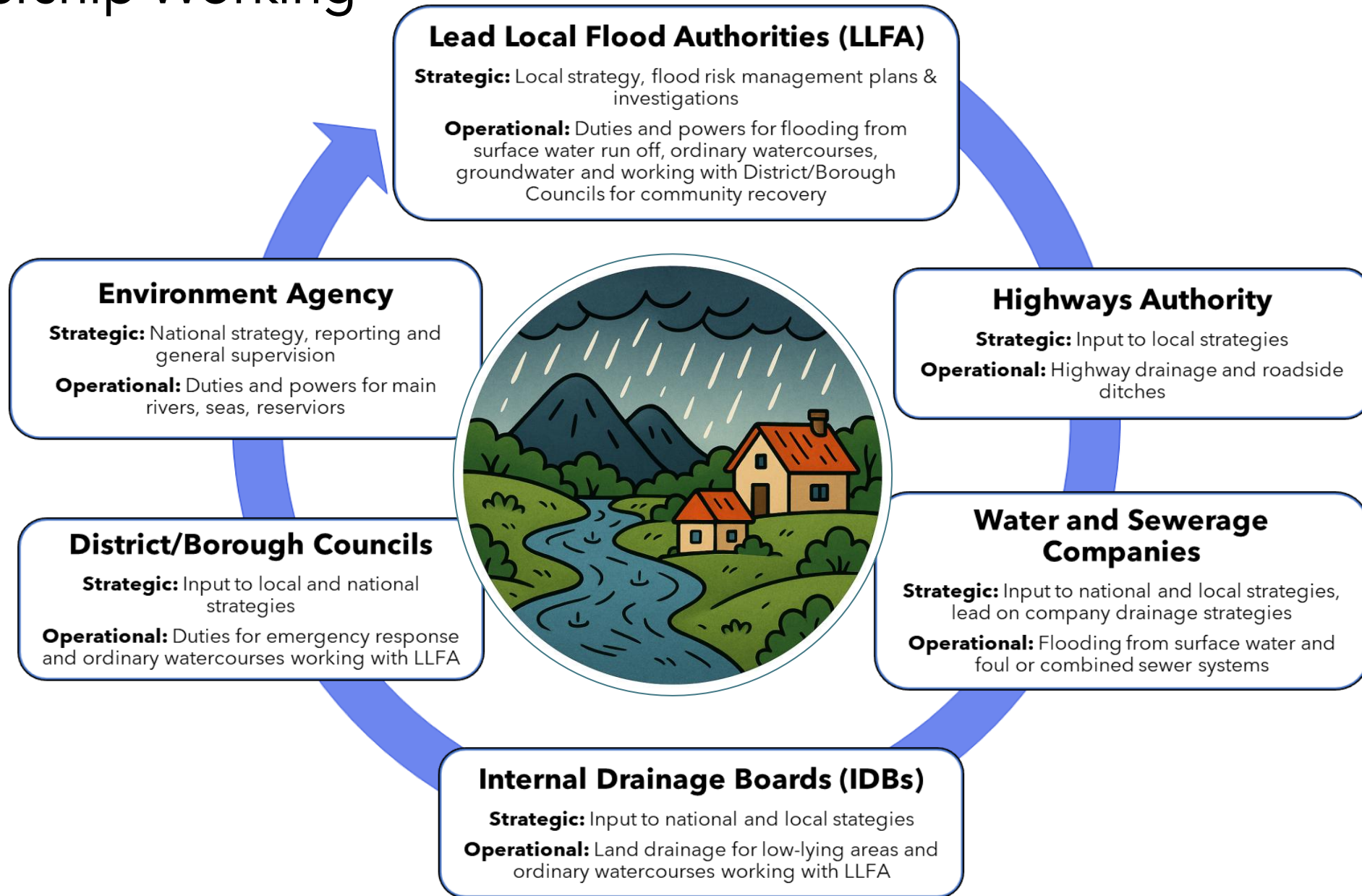


South Team

Projects and Planning:
South Staffs DC
Cannock Chase DC
Lichfield DC
Tamworth BC

**Service-level agreement
with the Black
County Authorities:
Walsall, Wolverhampton,
Sandwell and Dudley**

Partnership Working



Standard 1: runoff destinations

1.1 A 'SuDS approach' shall be adopted to address the management of surface water by the development and where it should be discharged. Runoff shall be treated as a resource and managed in a way that avoids negative impacts of the development on flood risk, the morphology and water quality of receiving waters and the associated ecology.

1.2 Runoff from the development shall be discharged to the following final destinations, to the maximum extent practicable, in accordance with the below hierarchy:

- priority 1: collected for non-potable use
- priority 2: infiltrated to ground
- priority 3: discharged to an above ground surface water body
- priority 4: discharged to a surface water sewer, or another piped surface water drainage system
- priority 5: discharged to a combined sewer

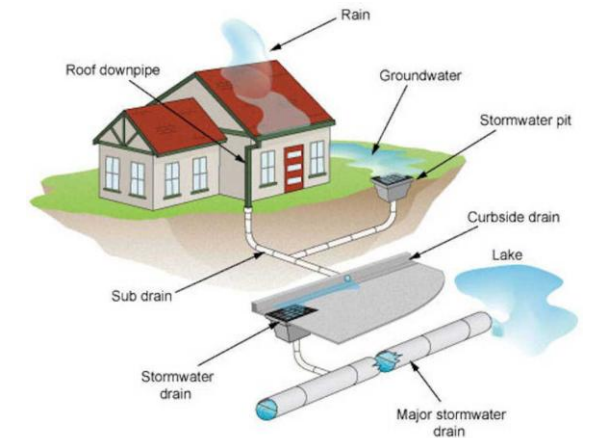
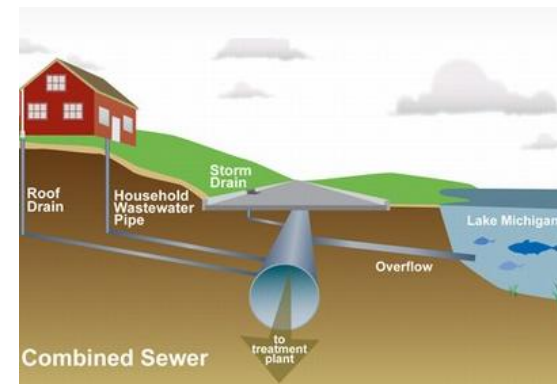
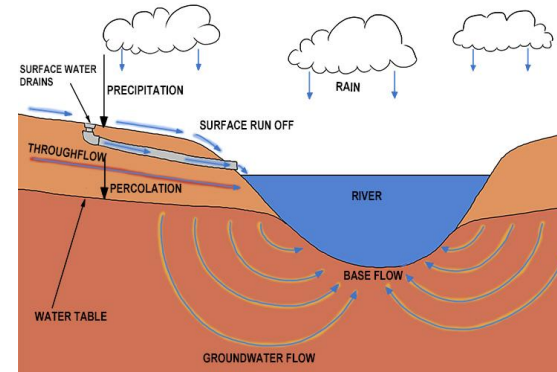
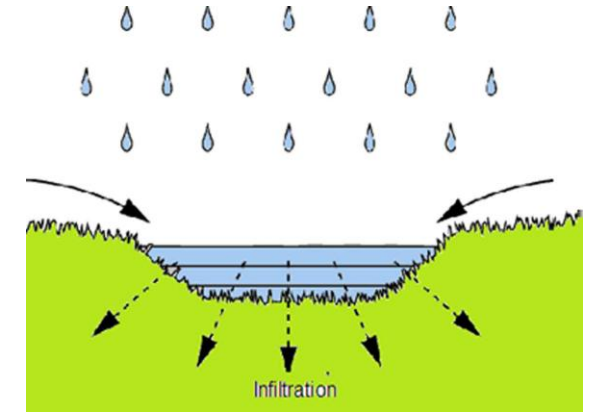
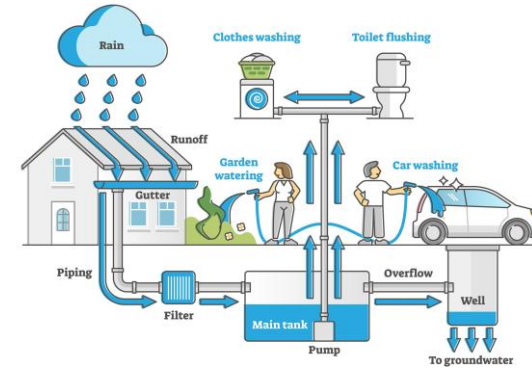
Note 1: priority 1 is the highest priority and priority 5 is the lowest.

Note 2: for the purposes of this standard, a combined sewer is a sewer intended to receive both foul sewage and surface runoff and does not include a sewer intended to receive only foul sewage, even if it has the capacity to accommodate additional flows or has an element of surface water in it already.

1.3 To utilise a lesser priority final destination, appropriate evidence shall be provided that demonstrates all higher priority final destinations have been utilised to the maximum extent practicable. Higher cost alone shall not be a reason to utilise lower priority final destinations.

1.4 Where more than one final destination is utilised, each final destination's ability to accept runoff shall be maximised in order of priority.

RAINWATER HARVESTING



Standard 2: management of everyday rainfall (interception)

2.1 Apply a 'SuDS approach' so that at least the first 5mm of rainfall for the majority of rainfall events does not result in runoff from the site to surface waters or piped drainage systems.

2.2 Evidence shall be provided that the approach to managing runoff from 'everyday' rainfall has been developed alongside and in support of the management of runoff quality (standard 4) and the delivery of amenity and biodiversity benefits (standards 5 and 6).



Standard 3: management of extreme rainfall and flooding

3.1 A 'SuDS approach' shall be adopted to address the management of development runoff during extreme rainfall, including allowances for climate change and urban creep to:

- protect people and property on the development from flooding of the surface water drainage system
- mitigate any increased flood risk to people and property adjacent to or downstream of the development
- protect the receiving water body from morphological damage or minimise the impact on sewer capacity

3.2 When discharging to an infiltration feature, the system shall be appropriately sized to accommodate the design event based on ground conditions and contributing areas.

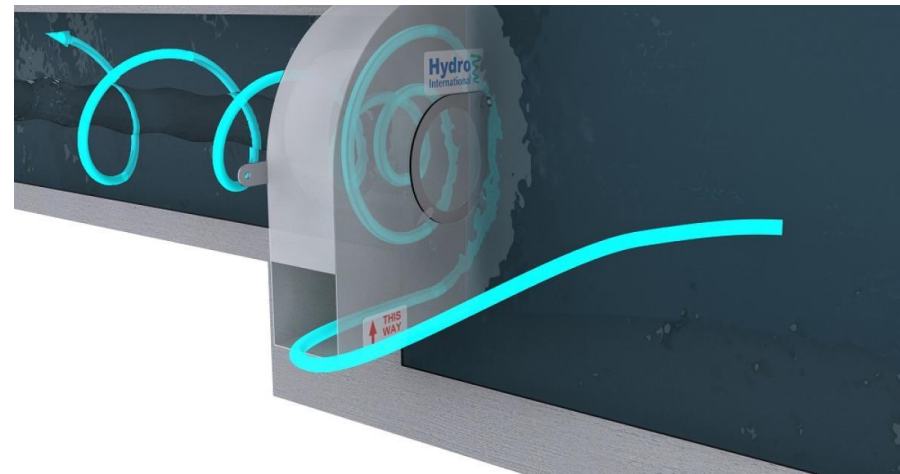
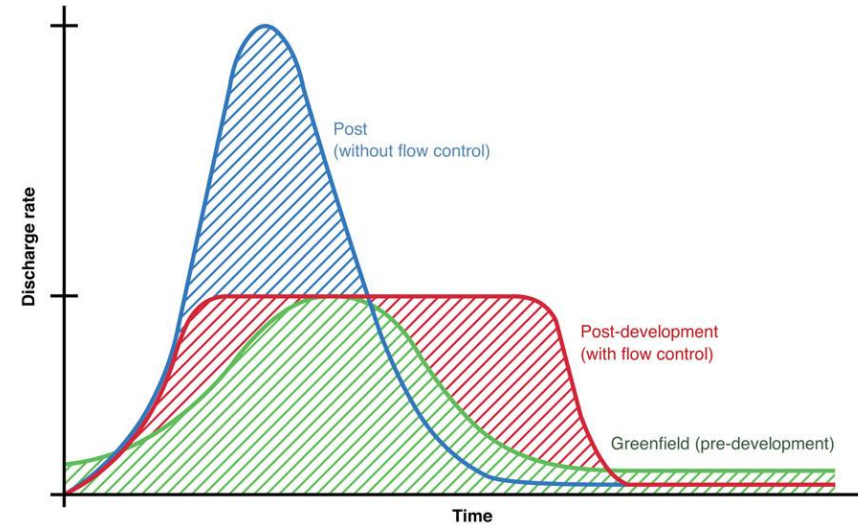
3.3 When discharging to an above ground surface water body, sewer or other piped drainage system, the surface water runoff (rate and volume) for the 1% annual exceedance probability (AEP) event shall be controlled to ensure the runoff from the development does not increase flood risk elsewhere.

3.4 When discharging to an above ground surface water body, sewer or other piped drainage system, the surface water runoff rate for the 50% AEP event shall be controlled to ensure development runoff from an event of this magnitude has no negative impact.

3.5 Any flooding from the surface water drainage system for events up to the 1% AEP event shall be managed within the development.

3.6 Any flooding from off-site sources for the 1% AEP event should be managed on site or safely routed through the site, ensuring any downstream risks are not increased compared to the pre-development scenario.

3.7 The risks (both on and off the development) associated with flooding from the surface water drainage system for exceedance events greater than the 1% AEP event shall be appropriately managed.



Standard 4: water quality

4.1 Apply a 'SuDS approach' that protects surface waters, groundwater and coastal waters by managing the quality of the surface water runoff to adequately address water quality risks from the development.

4.2 The proposed SuDS management train(s) shall be based on a robust water quality risk assessment, appropriate to the pollution hazard and sensitivity of receiving waters, reflecting industry recognised guidance^[footnote 21] or other quantitative assessment as agreed with the approving body and permitting requirements^[footnote 22].



Standard 5: amenity

5.1 A 'SuDS approach' shall be adopted that maximises benefits for amenity through the creation of multi-functional places and landscapes.



Standard 6: biodiversity

6.1 A 'SuDS approach' shall be adopted to ensure the surface water drainage system maximises biodiversity benefits throughout the development lifecycle.

6.2 The surface water drainage system shall add biodiversity value by:

- creating diverse, self-sustaining, resilient local ecosystems^[footnote 34] which contribute to net gains in biodiversity
- supporting and promoting natural local habitat and species, for example, through local nature recovery strategies (LNRS)^[footnote 35]
- contributing to the delivery of local biodiversity strategies
- contributing to habitat connectivity



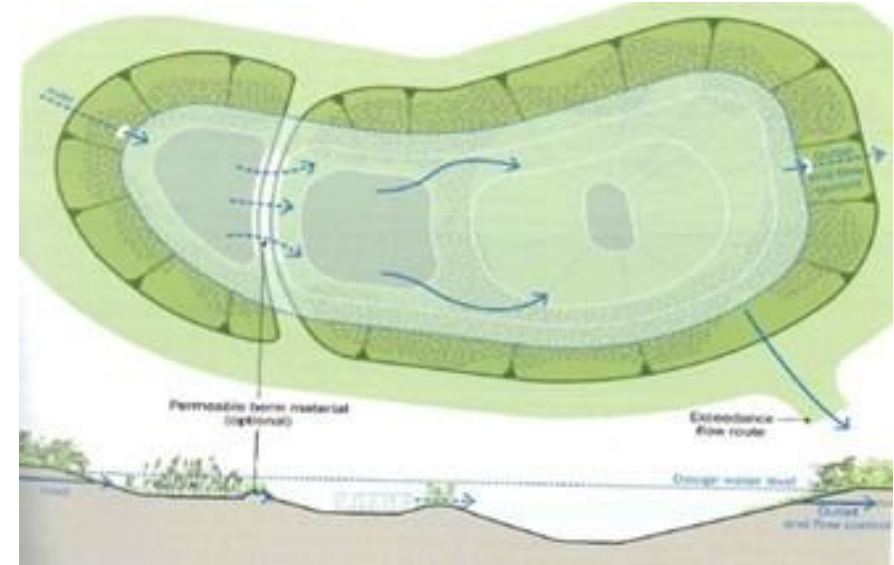
Standard 7: design of drainage for construction, operation, maintenance, decommissioning and structural integrity

7.1 A 'SuDS approach' shall be adopted to ensure that surface water drainage systems are designed^[footnote 37] so they can be easily and safely constructed, operated and maintained taking account of the need to minimise negative impacts on natural resources and the environment.

7.2 The designer shall provide a management and maintenance plan^[footnote 38] that supports the design objectives detailed in standards 1 to 6 and ensures the performance of the surface water drainage system with regards to runoff destinations, everyday and extreme rainfall, water quality, amenity and biodiversity is maintained throughout the lifetime of the development.

7.3 Surface water drainage design shall examine for the likelihood and consequences of potential failure scenarios that may occur during the operation phase and safely manage the associated risks.

7.4 The surface water drainage system shall be designed to ensure structural integrity of all components under anticipated loading conditions for the design life of the development so that it does not affect the structural integrity of any existing or proposed components within, or adjacent to, the development.



The Cost of Flooding



✓ Direct Economic Costs

- **Property Damage:** In the UK, the **average insurance claim for a flooded home is just over £30,000**, while businesses average £70,000 per claim. [homegrail.com]

- **National Scale:** Flooding costs the UK around **£2.2 billion annually**, including damages and flood defence maintenance. [homegrail.com]

- **Event-Based Costs:** Between 2016–2019, floods in England and Wales caused **£504–£924 million in damages**, with a best estimate of £708 million. [gov.uk]

Property level flood risk to set to increase by 8% between 2050 and 2080

The average home costs £33,600 to repair after a flood -

According to the Association of British Insurers trade body. Worryingly, as many as 28% of homeowners are unsure whether their insurance policy covers them for flood damage.



✓ Indirect & Hidden Costs

- **Business Interruption:** Lost income during repairs and supply chain disruptions often exceed physical damages. [marshmclennan.com]

- **Mental Health:** Anxiety, depression, and trauma are common and long-lasting. [ireactconsulting.com]

Owners of a flooded home have a 6x higher likelihood of mental health issues

- **Insurance Premiums:** Properties in flood-prone areas face **rising premiums** or become uninsurable, reducing affordability and market value.

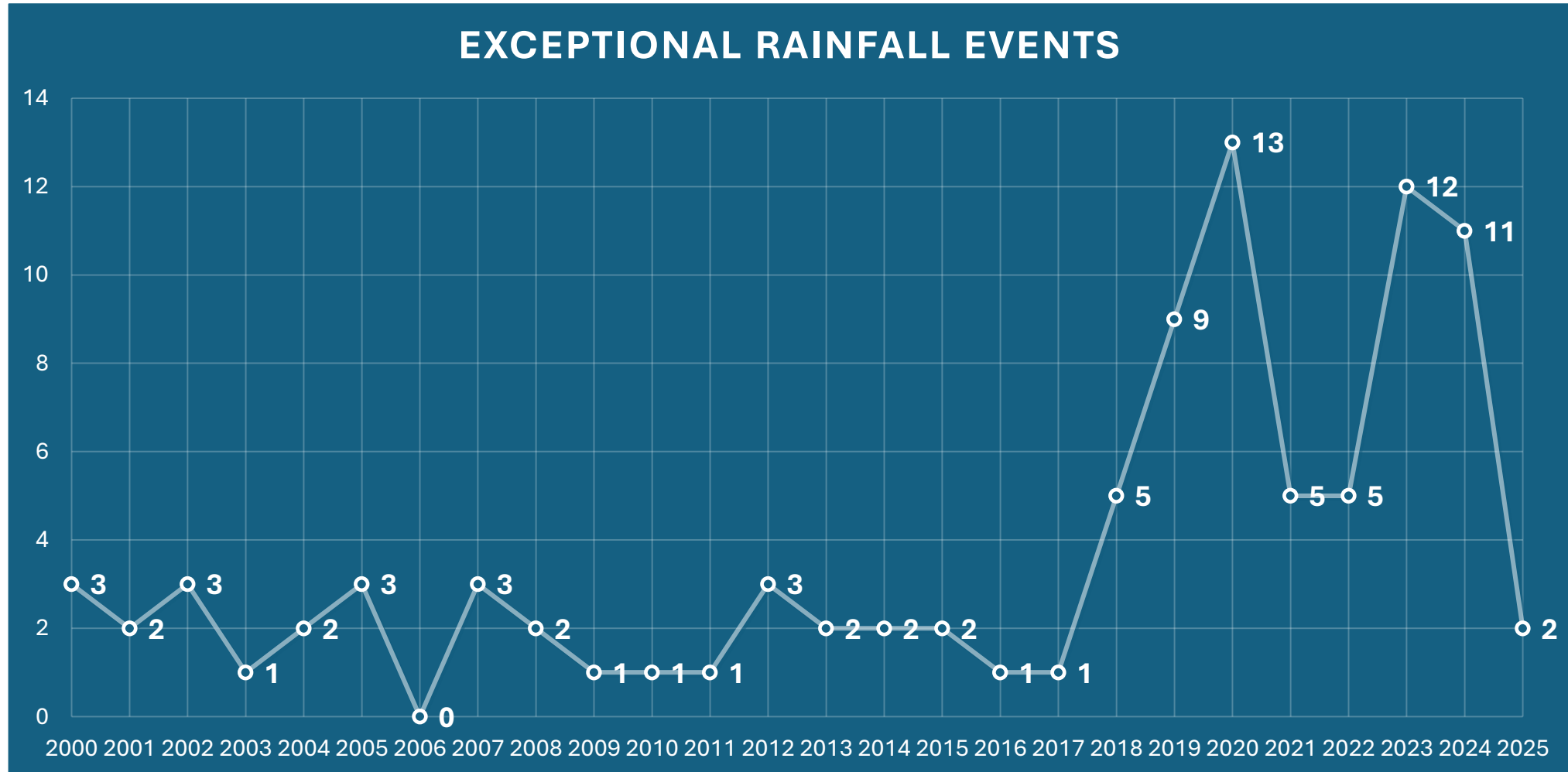
- **Property Devaluation:** Homes re-zoned into higher flood risk areas can lose **2% or more of value** immediately.

- **Public Health:** Floods are linked to increased cardiovascular, respiratory, and infectious disease deaths for months or years after events.

- **Long-Term Mortality:** In the U.S., floods caused up to **22,000 indirect deaths** between 2001–2020, far beyond the 266 direct fatalities. [hixon.yale.edu]

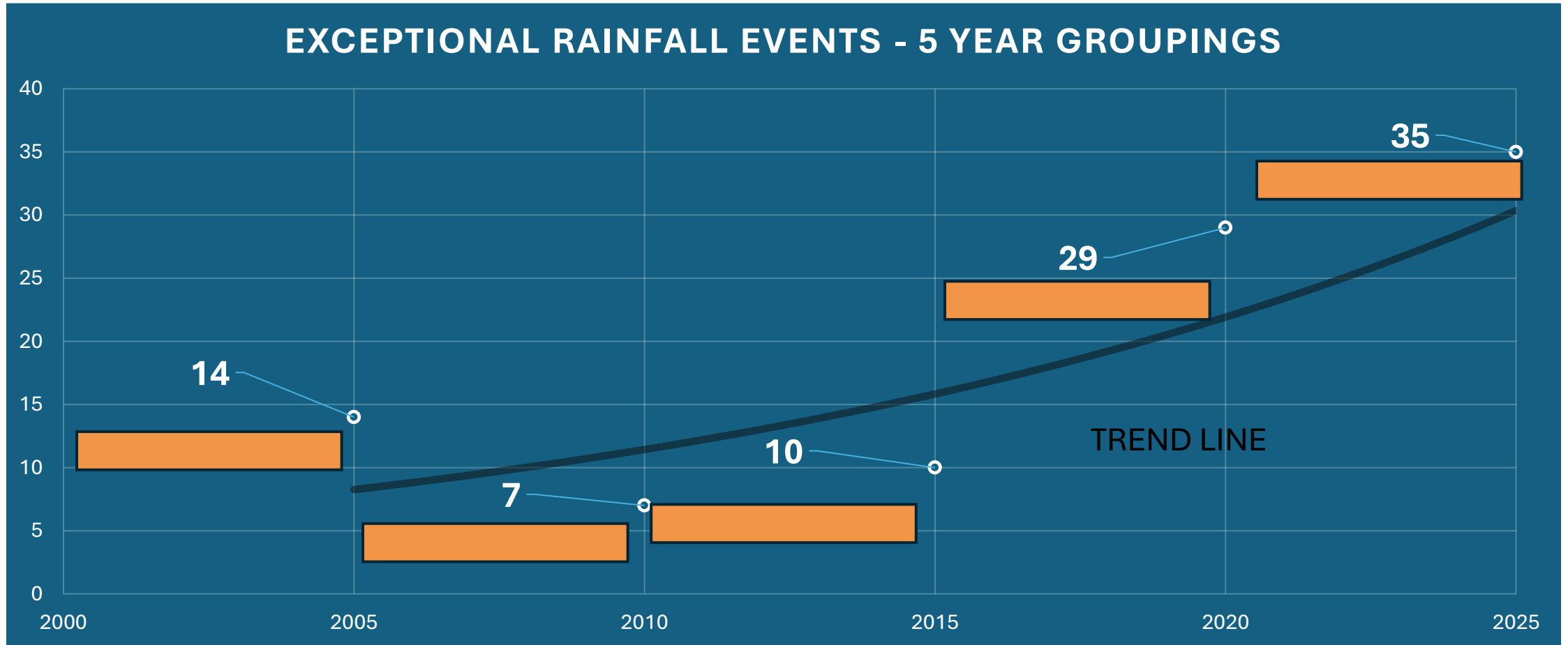
Exceptional Rainfall Events 2000-2025

(England) Met Office Data



Exceptional Events – 5 Year Grouping (England) Met

Office Data



Recent Flooding

- October 2023 – Storm Babet – 96 officially reported properties significantly impact by flooding
- January 2024 - Storm Henk – 71 properties officially reported properties significantly impacted by flooding
- September 2024 - 19 properties flooded internally
- November 2024 – Storm Bert – 10 properties flooded
- January 2025 – Seven properties flooded
- January/February 2026 – Major Road and Highway Disruption

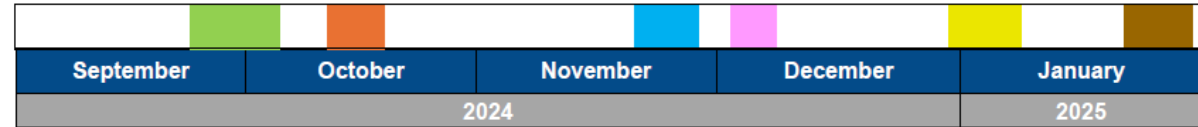
- Flood Recovery Frameworks activated for Storm Babet and Henk by Central Government with funding going to residents and businesses with property flood resilience grants being delivered this year.

- Six significant flood events were observed in WMD from September 2024 to January 2025.
- Flood event parameters have been set to cover time periods consistent with internal Environment Agency reporting:

Event name	Dates
Late September 2024 flooding	20 September to 4 October 2024
Mid October 2024 flooding	16 to 24 October 2024
Storm Bert November 2024	18 to 28 November 2024
Storm Darragh December 2024	5 to 10 December 2024
Early January 2025 flooding	31 December 2024 to 8 January 2025
Storms Éowyn and Herminia Late January 2025	23 to 28 January 2025

River	River gauge	Late Sept 24		Mid Oct 24		Bert Nov 24		Darragh Dec 24		Early Jan 25		Éowyn & Herminia late Jan 25	
		Date	Level (m)	Date	Level (m)	Date	Level (m)	Date	Level (m)	Date	Level (m)	Date	Level (m)
Severn	Crew Green	01/10/24	4.68	17/10/24	6.26	25/11/24	6.33	08/12/24	6.43	02/01/25	6.24	29/01/25	4.81
	Welsh Bridge	01/10/24	2.10	18/10/24	3.40	26/11/24	3.74	09/12/24	4.13	03/01/25	3.24	29/01/25	2.17
	Buildwas	01/10/24	3.29	19/10/24	5.10	26/11/24	5.06	09/12/24	5.52	08/01/25	4.51	29/01/25	3.27
	Bridgnorth	02/10/24	2.57	19/10/24	4.35	27/11/24	4.31	09/12/24	4.56	08/01/25	3.79	29/01/25	2.53
	Bewdley	02/10/24	2.63	20/10/24	4.20	27/11/24	4.13	10/12/24	4.25	06/01/25	3.71	29/01/25	2.60
	Worcester	02/10/24	2.61	20/10/24	5.08	26/11/24	4.94	10/12/24	4.61	07/01/25	5.00	29/01/25	3.55
	Diglis	28/09/24	2.29	20/10/24	4.72	25/11/24	4.74	09/12/24	4.22	07/01/25	4.74	29/01/25	3.34
	Kempsey Yacht Club	28/09/24	4.48	20/10/24	6.82	25/11/24	6.93	09/12/24	6.26	07/01/25	6.90	29/01/25	5.48
	Saxons Lode	28/09/24	3.50	20/10/24	5.03	26/11/24	5.07	09/12/24	4.74	08/01/25	5.09	29/01/25	4.30
	Mythe	28/09/24	3.18	20/10/24	4.25	26/11/24	4.31	09/12/24	4.10	08/01/25	4.36	29/01/25	3.89
	Gloucester	03/10/24	2.76	18/10/24	3.89	27/11/24	3.07	09/12/24	2.77	08/01/25	3.08	29/01/25	3.12
	Teme	Tenbury	27/09/24	2.18	17/10/24	5.61	24/11/24	5.46	08/12/24	3.24	06/01/25	4.30	27/01/25
Bransford		28/09/24	3.37	18/10/24	5.46	25/11/24	5.64	08/12/24	4.80	07/01/25	5.16	27/01/25	4.80
Leintwardine		27/09/24	1.20	17/10/24	2.38	25/11/24	1.71	07/12/24	1.44	06/01/25	1.53	28/01/25	1.41
Avon	Evesham	28/09/24	2.88	20/10/24	1.93	25/11/24	3.06	08/12/24	2.22	07/01/25	3.50	27/01/25	2.13
	Bredwardine	27/09/24	3.63	17/10/24	5.83	24/11/24	6.21	08/12/24	6.56	06/01/25	5.96	28/01/25	4.35
Wye	Old Wye Bridge	27/09/24	3.27	17/10/24	4.89	25/11/24	5.16	08/12/24	5.35	07/01/25	4.92	29/01/25	4.02
	Ross-on-Wye	28/09/24	2.93	18/10/24	4.35	26/11/24	4.66	09/12/24	4.57	07/01/25	4.45	29/01/25	3.88

Timeline



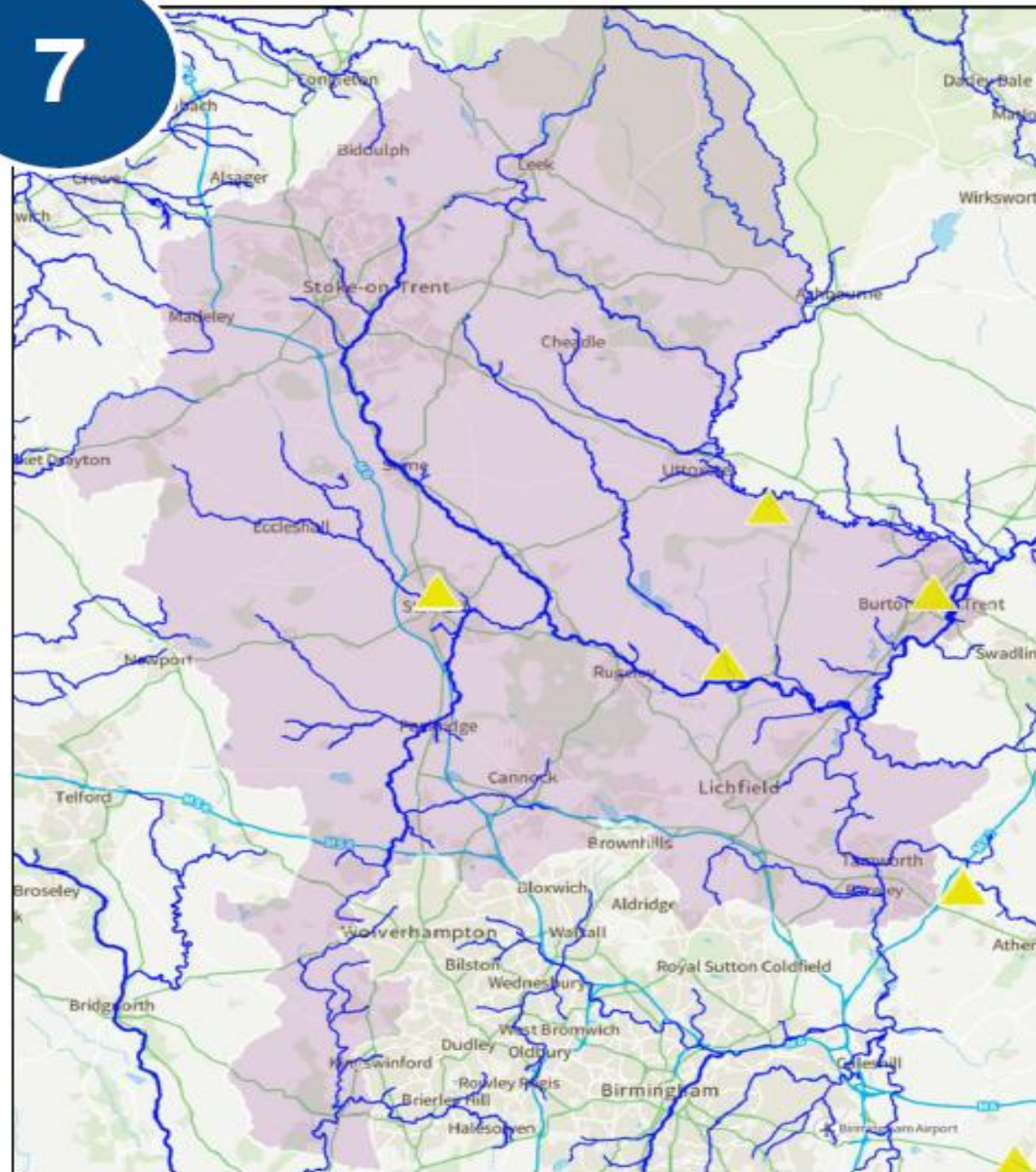
River peaks in Staffordshire, Warwickshire, and West Midlands September 2024 to January 2025

Staffordshire

Flood event	Commercial	Residential
Early January 2025 flooding	4	3

Confirmed internally flooded properties in Staffordshire
January 2025

7





517 Flood Alerts issued



411 Flood Warnings issued



0 Severe Flood Warnings issued

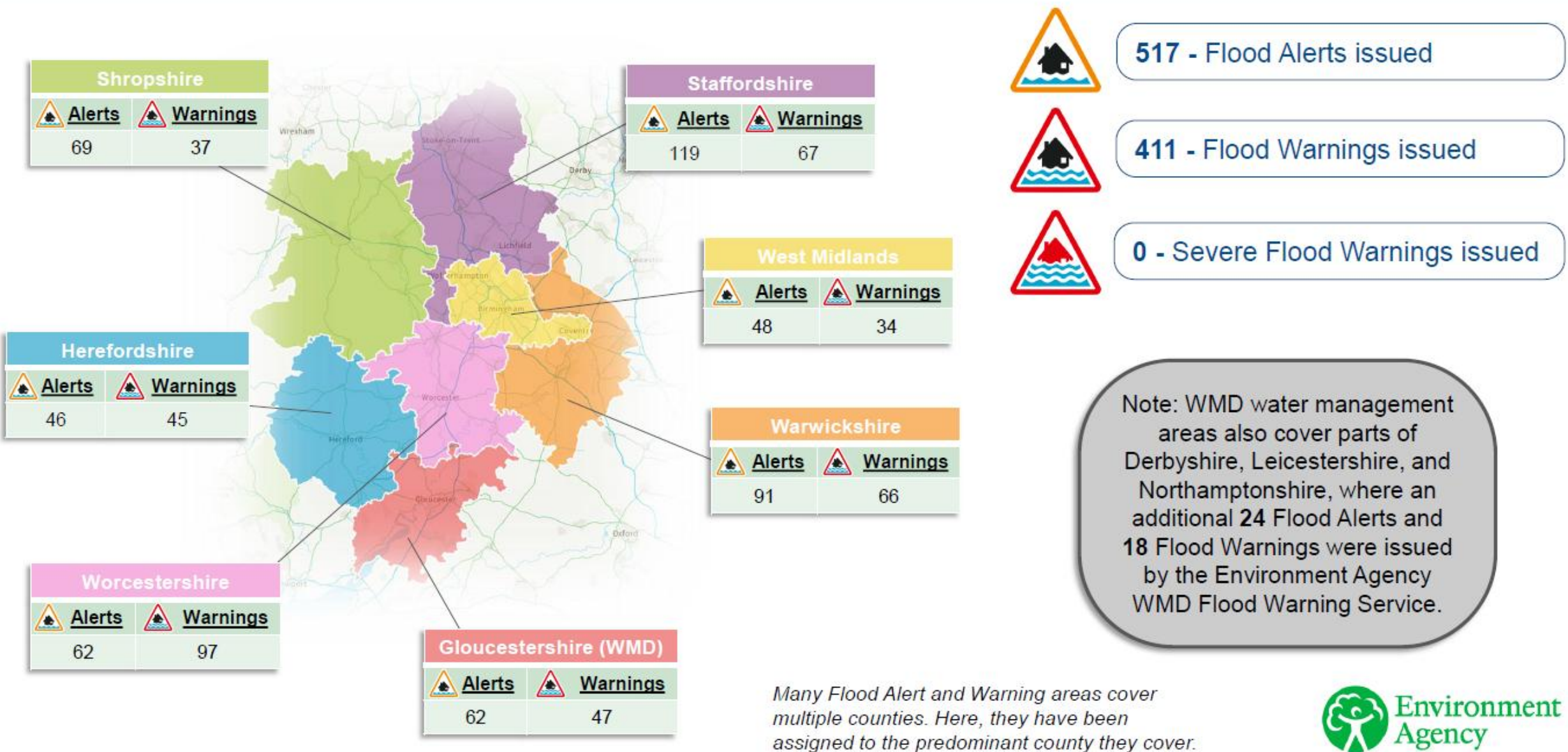


23,200

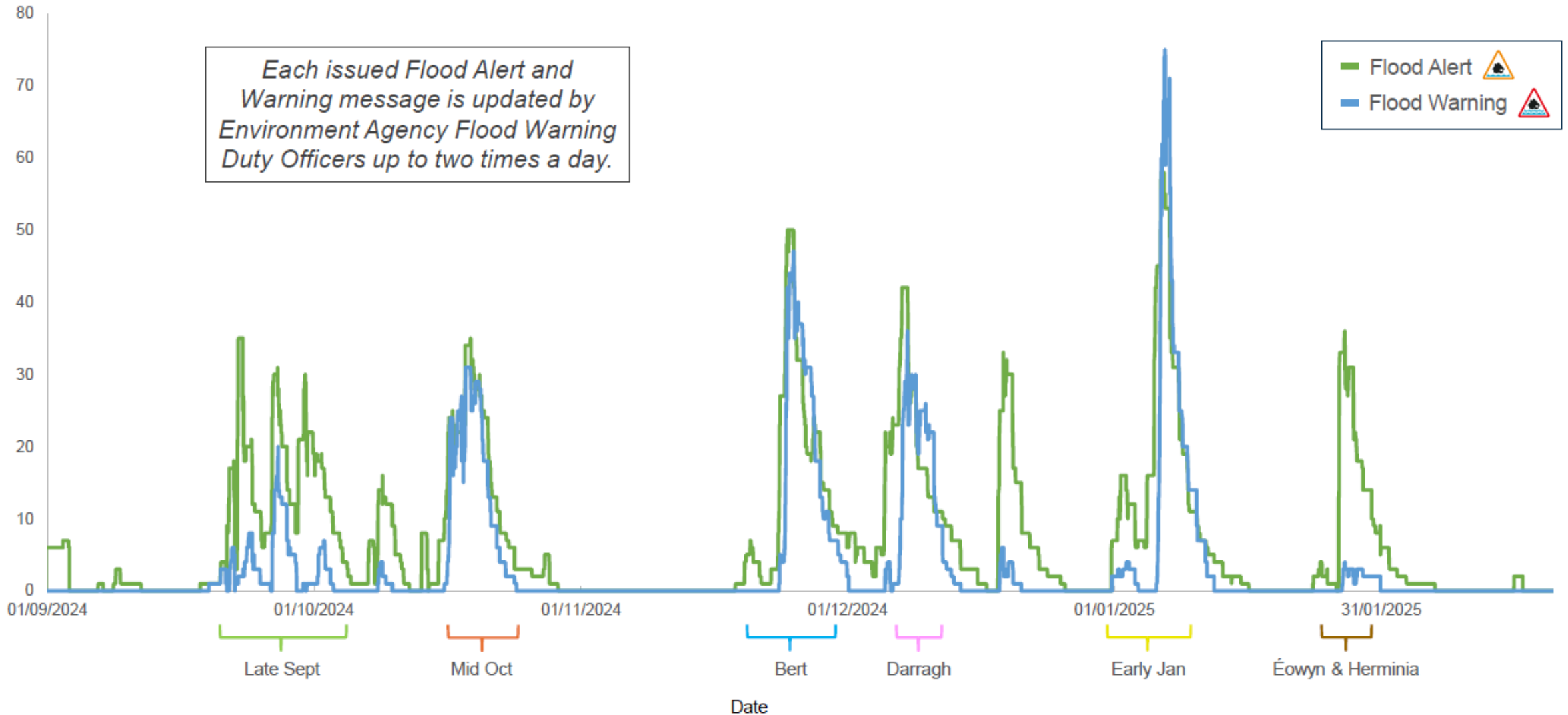
Properties that
received
Flood Warnings

WMD - Flood Warning Service 1 September 2024 to 31 January 2025

Flood Alerts & Warnings issued within WMD counties



Flood Alerts and Warnings in force in Environment Agency WMD from September 2024 to February 2025

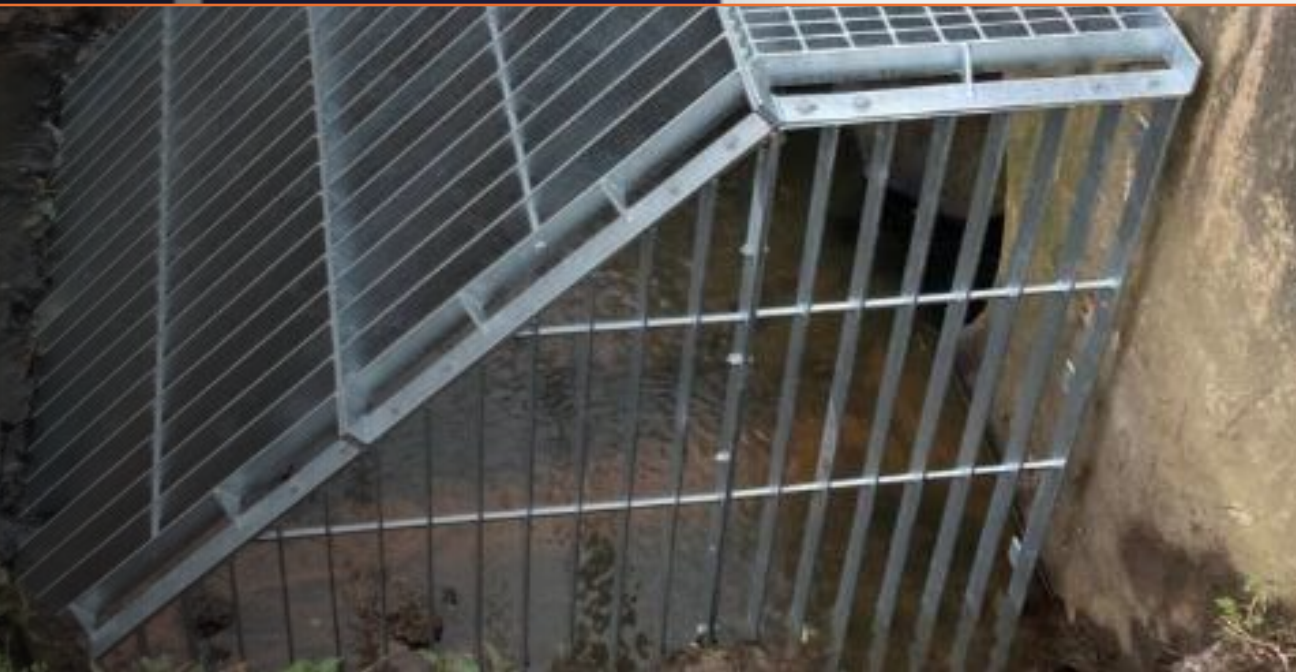


Section 19 and Investigations

- [Section 19 - Cannock Chase District - October 2019](#) (2.6 MB)
- [Section 19 - Kitling Greaves Lane - 2020](#) (1.48 MB)
- [Section 19 - Newton Leys, Burton Upon Trent - 2020](#) (2.65 MB)
- [Section 19 - Price Court, Shobnall - 2020](#) (2.74 MB)
- [Section 19 - Lichfield District - February 2020](#) (3 MB)
- [Section 19 - Lichfield Road A38 - 2020](#) (3 MB)
- [Section 19 - Marchington - February 2020](#) (3 MB)
- [Section 19 - Mead Crescent Burton - February 2020](#) (3 MB)
- [Section 19 - Brookside Rolleston - February 2020](#) (4 MB)
- [Section 19 - South Staffordshire - February 2020](#) (3.91 MB)
- [Section 19 - Yoxall - February 2020](#) (2.37 MB)
- [Section 19 - Great Wyrley, Cheslyn Hay, Featherstone - 2020](#) (3 MB)
- [Section 19 - Barton under Needwood - February 2020](#) (3 MB)
- [Section 19 - Tutbury - 2023](#) (3 MB)
- [Section 19 - Marchington, East Staffordshire - October 2023](#) (2 MB)
- [Section 19 - Slindon - January 2024](#) (19 MB)



Flood Mitigation & Resilience Projects



Scheme Delivery



Various funding sources: central, regional government + partnership working with other risk management authorities



£3mil FDGiA & LL - 177 properties better protected



£1.8mil Defra money. > 100 properties better protected



£1mil of Defra Property Flood Resilience Grants, LL & FDGiA aiming for 50+ properties better protected.

Benchmarking Flood Alleviation Schemes

- Have an ambitious programme
- Benchmarking County Councils and Staffordshire County Council in Trent Region (RFCC schemes in execution):

Staffordshire County Council	Authority A	Authority B	Authority C	Authority D
333	114	62	92	166
Properties Better Protected	Properties Better Protected	Properties Better Protected	Properties Better Protected	Properties Better Protected

Recent Completed Scheme October 2025

- Festival Court - Cannock
- **Delivered Benefits**
 - ✓ **7 GreenBlue SuDS Pods** – enhancing surface water management and urban greening.
 - ✓ **Large Diameter Marshall Berco Drainage Sets** – improving underground drainage capacity.
 - ✓ **GreenBlue ArborTree System Pit** – supporting healthy urban tree growth with integrated SuDS.
 - ✓ **New Disabled Parking Bay** – improving accessibility and inclusivity.
 - ✓ **HydroRock Sustainable Infiltration Material** – innovative underground solution for water retention and infiltration.
 - ✓ **Staffordshire's First Living Green Roof Bus Shelter** – pioneering green infrastructure with visual, ecological, and climate benefits.
- **Wider Intangible Benefits**
 - 🌱 Improved urban biodiversity and aesthetics.
 - 🌍 Contribution to climate resilience and carbon reduction.
 - 🗣️ Enhanced public awareness and engagement with sustainable infrastructure.
 - ♿️ Inclusive design supporting mobility and access.



Forward Programme

Project Name	Gateway 4 (Readiness for Service)	Comments / Potential Mitigation	Capital Projected Funding	External Private Funding	Residential Properties Protected
Festival Court Cannock Community Mitigation	31/03/2025	CCDC / SCC Lands 4 Pillars Project - Highway Drainage, Attenuation and Tree Pits	£335,000.00	£15,000.00	8
Babet PFR Recovery	31/03/2025	PFR Recovery Grant	£100,000.00		30
Henk PFR Recovery	31/05/2025	PFR Recovery Grant	£200,000.00		45
Brewood	01/03/2026	Watercourse Management, Bank Stabilization	£116,000.00		32
Silverdale	01/03/2026	Flood Defence Wall Delivery	£240,000.00		66
Newton Leys	01/03/2026		£120,000.00		33
Bishops Wood	31/03/2026	Open Land Swale - Private Lands	£132,500.00		24
Kitling Greaves Lane, Outwoods, Burton	31/03/2026	Potential For scheme depending on OM2 capture from Fair	£180,000.00		TBC
Kitling Greaves	01/04/2026	Trash Screen Delivery	£94,500.00		26
Hazelwalls	01/04/2026	Trash Screen Delivery	£65,000.00		18
Endon	01/04/2026		£130,000.00		36
Church Eaton	01/08/2026		£11,000.00		3
Armitage	01/08/2026		£88,000.00		24
Mill Green Cannock	01/02/2027	Slow the flow and Attenuation	£80,000.00		18
Kidsgrove	01/02/2027		£73,000.00		20
Tutbury	01/02/2027		£109,000.00		30
Endon	31/03/2027	Green SuDs Solutions / Attenuation & Buffer Strips	£160,000.00		8
Norton Brook FAS and Scheme - CCDC	31/03/2027	Using Open Green Areas - Slow the Flow - Buffer Strips, NFM	£403,000.00		96
Perton, Surface Water FAS	31/03/2027	Attenuation in SSDC Lands, slow the flow	£957,000.00	£300,000.00	103
Norton Canes Green	01/08/2027	Slow the flow and Attenuation	£140,000.00		38
Waterhouses	01/08/2027		£80,000.00		22
Wombourne	01/02/2028		£102,000.00		49
Great Wyrley - Wyrley Brook Flood Resilience Scheme	30/03/2029	Open Sewer Works with STW - Slow the Flow in Network, Attenuation, Tree Pits	£782,000.00	£4,800,000.00	148
Coven Greenacres Community Project	31/03/2029	Open Area Blue Solution - Rain Garden Planting - Attenuation	£44,000.00		8
South Team Staffs PFR	31/03/2029	Separate Property Locations not included in other Schemes for PFR			TBC
Cranberry Flood Alleviation Scheme	31/03/2031	TBC	£33,000.00		6
Newcastle under Lyme Drainage Routes Strategy	31/03/2032	Strategy + Delivery TBC	£540,000.00		TBC
Brown Edge FAS	31/03/2032	Blue Green Solutions - Buffer Strips, Tree Planting and Attenuation	£85,000.00		16



A **FAIR (Flood: Aware, Informed, Resilient)** Approach to Community Flood Risk

A blueprint for future work



FAIR focuses on...

Improved 'resilience' = the **ability** or **capacity** of **people** and **places** to **better prepare for, protect against, respond to,** and **recover from** floods

For the residents, businesses and communities across Staffordshire (and the Black Country)

Achieved by working **innovatively** and **cooperatively** with the relevant Risk Management Authorities (RMAs), Local Authorities (District, Borough and Parishes) and the wider sector (e.g. charities)

FCRIP funded

FAIR is one of 25 projects funded by DEFRA and managed by the Environment Agency as part of the **Flood and Coastal Resilience Innovation Programme (FCRIP)** to demonstrate how practical innovative actions can improve resilience to flooding and coastal erosion in a change climate



Department
for Environment
Food & Rural Affairs



Environment
Agency

6-year project running
until March 2027

Flood and coastal resilience innovation programme

Part of the £200m

Flood and coastal innovation programmes

Project Partners



University of Exeter



Staffordshire Civil Contingencies Unit

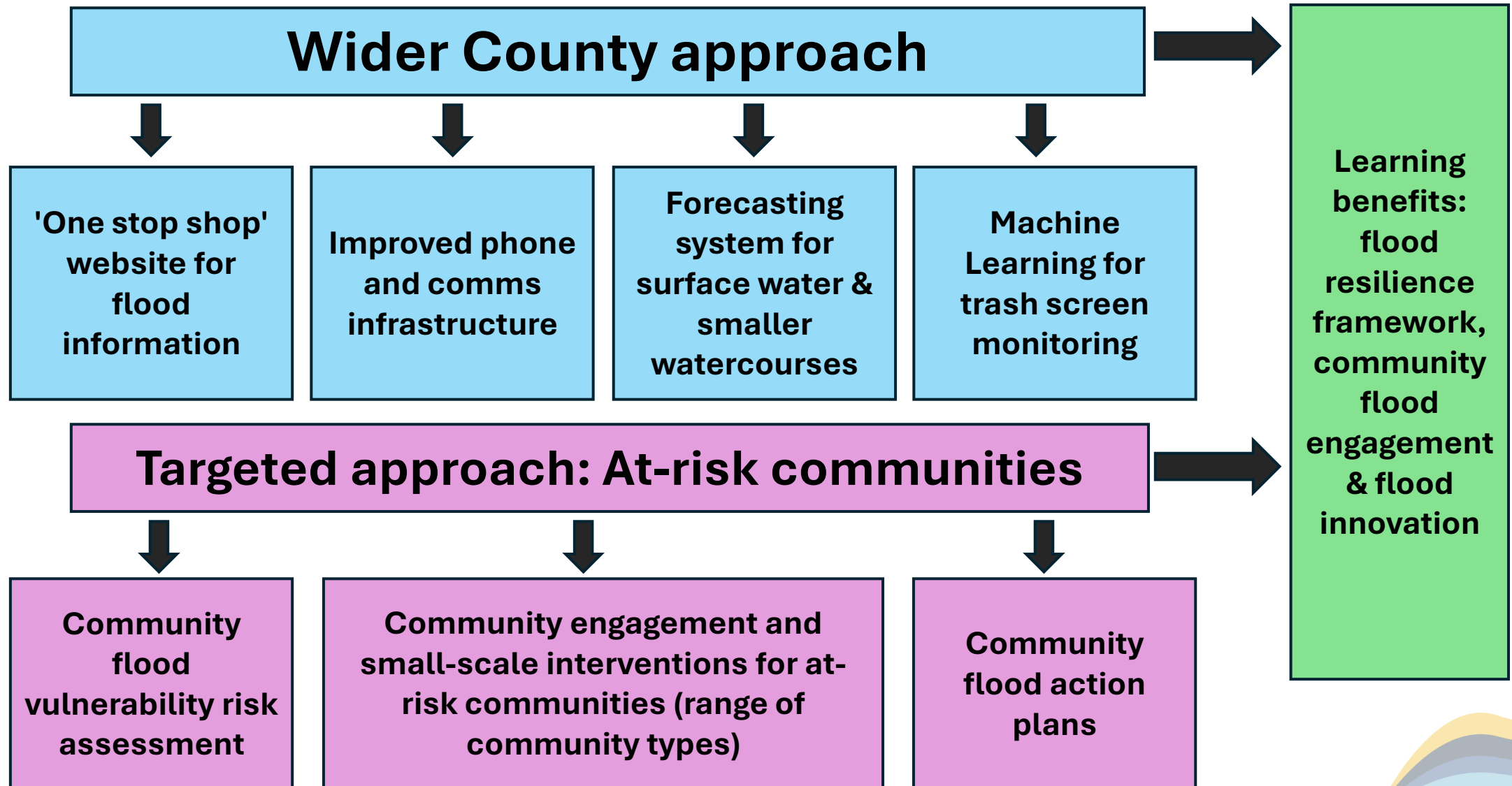


Supporting Resilience in Staffordshire
www.staffordshireprepared.gov.uk



DE MONTFORT UNIVERSITY LEICESTER

FAIR approach

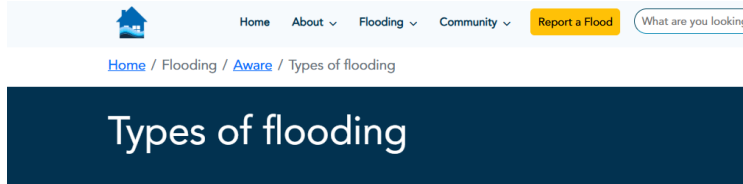
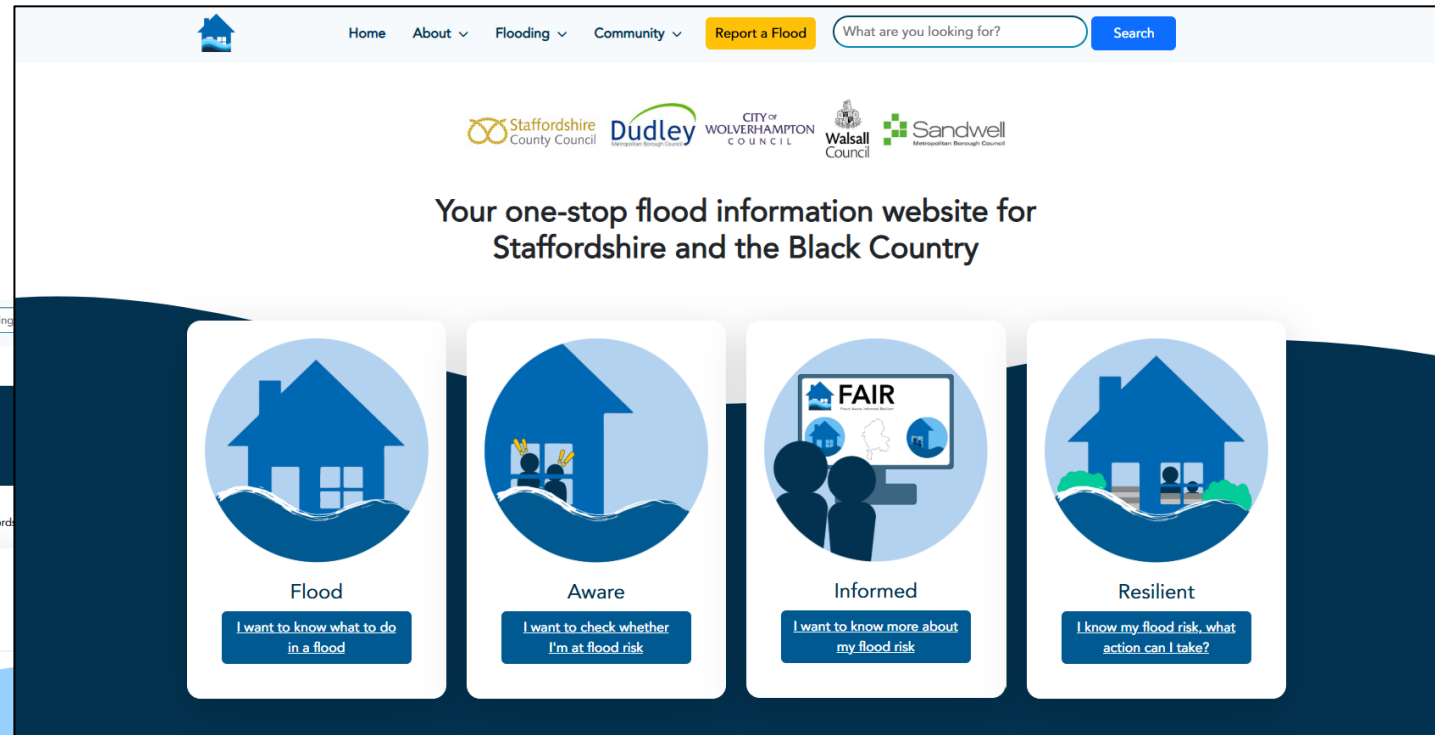


A stylized graphic featuring a light blue house silhouette with a chimney on the left and a window on the right. The house is set against a background of wavy, layered lines in shades of blue, grey, and yellow, suggesting a landscape or water. The text "Wider County approach" is centered over the house.

Wider County approach

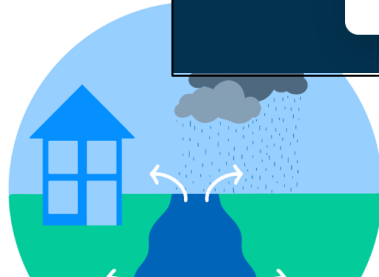
Flood Information Website

'One-stop shop' for flood risk information: <https://www.fairflood.org/>



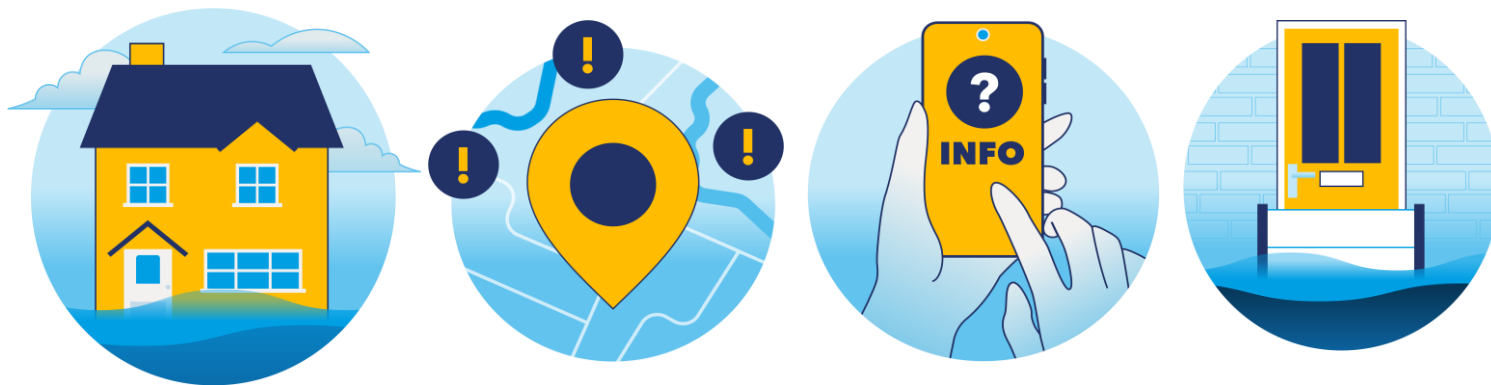
Also known as fluvial or riverine flooding, river flooding occurs in both main rivers and ordinary watercourses when the volume of water in the channel exceeds its capacity. This causes the water level in the river channel to overtop its riverbank. This most commonly occurs when there has been a prolonged or heavy period of rainfall, which increases river levels due to:

- Runoff from surface water and inflow from sewer infrastructure to the rivers.
- Permeable surfaces (which allow water to soak into the ground) becoming saturated (full of water), increasing the rate of surface water runoff, so water reaches the river faster.
- Impermeable surfaces (that do not allow water to soak into the ground) having a quick surface water runoff rate that reaches rivers faster.
- Drainage systems conveying water to the river quickly.
- High flows in the river becoming restricted by structures (for example, bridges and culverts) causing water levels upstream to rise.
- Sediment and debris building up in river channels and reducing the river's



Phase 1 'MVP' complete - community led feedback for development of next phase

Phase 2 including location-specific community pages, improved infographics and surface water & smaller watercourse flood forecasting



[Home](#) / [Community](#) / [Community Hub](#) / [Brewood](#)

Brewood

Brewood, located in the south of Staffordshire. Is an ancient market town, attracting a number of visitors each year.

Local Alert in place

Heavy rainfall over the next 12 hours, which may result in some travel disruption, is possible.

[Find out more](#)



Get real time information

Use the tabs below to get real time information regarding this community.

[Flood Foresight](#)

[Webcams](#)

[Weather station](#)

[Flood Scheme](#)

Local flood forecast

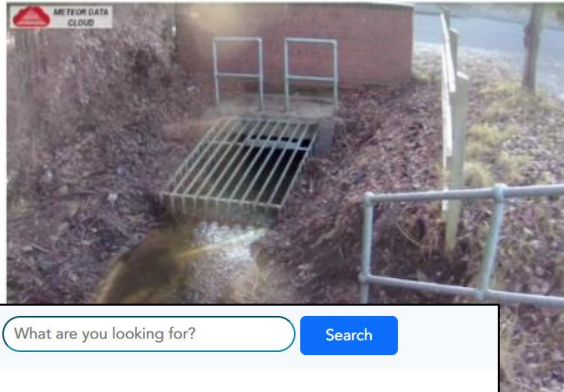
Camera feed

Weather forecast

Weather station

Images for Burntwood Road (Norton)

Camera: 1 | Timestamp: Thursday, November 20, 2025 9:22:00 AM



Local flood forecast

Camera feed

Weather forecast

Weather station

Click one of the readings below to view a chart

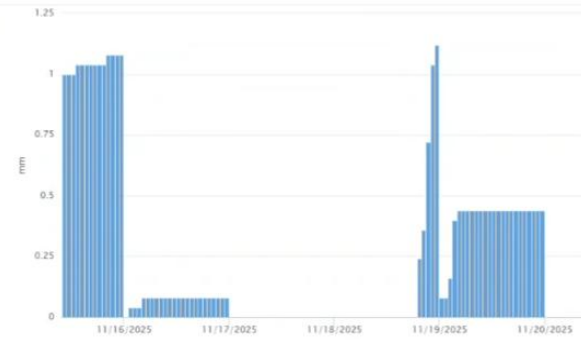
datasphere

Norton Canes

AGS-0746 Norton Canes Primary School

AGS-0746 Norton Canes Primary School | Daily Rainfall

- Daily Rainfall: 0.0 mm (11/20/2025 10:00 AM)
- Rainfall: 0.0 mm (11/20/2025 10:00 AM)
- Temperature: 1.4 °C (11/20/2025 10:00 AM)



All time stamps in time zone: Europe/London



Home

About

Flooding

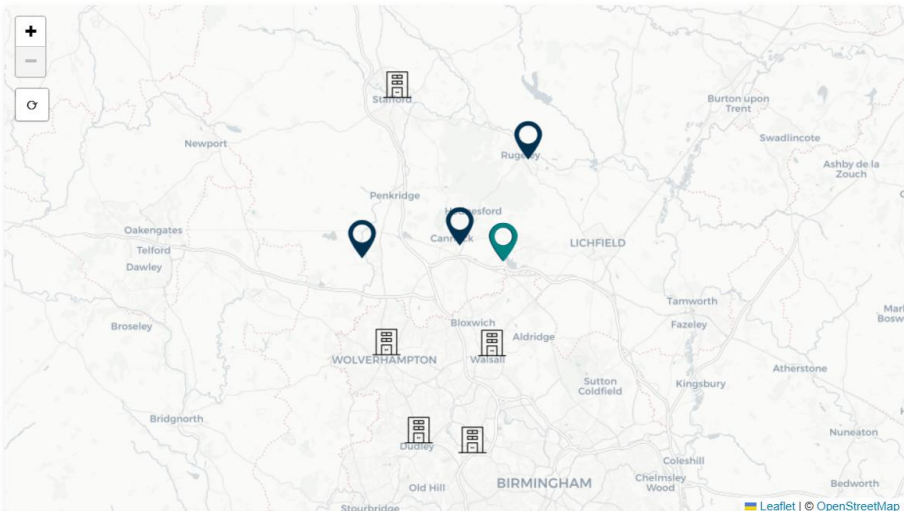
Community

Report a Flood

What are you looking for?

Search

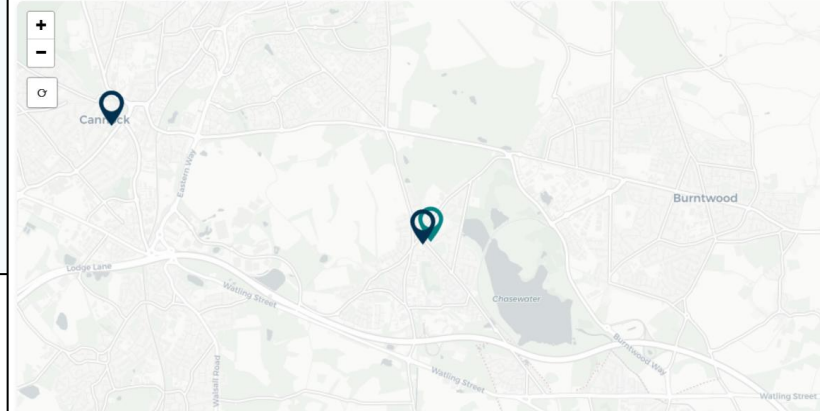
- Community
- Community scheme
- Council office



Select a community

— Choose —

- Community
- Community scheme
- Council office



Select a community

Norton Canes community library


Community

Norton Canes community library

Forecasting & Warning System

Development of local Surface Water forecasting using Flood Foresight (surface water module)
Issuing 'local surface water guidance notifications' through Whatsapp channels and on the FAIR website





Norton Canes
Surface water flooding is: *Expected*



The image shows three square icons in a row, each containing a house silhouette and a rain gauge. The first icon is labeled 'Possible' and has a grey border. The second is labeled 'Likely' and has a grey border. The third is labeled 'Expected' and has a blue border with a blue checkmark in the top right corner.

Channels +

Search

-  FAIR Local Flood Forecasts - Norton ... 10/22/2025
The alarm status at Norton Canes [CANNOCK CHAS...
-  FAIR Local Flood Forecasts - Edingale 10/22/2025
The alarm status at Edingale [LICHFIELD] has increas...
-  FAIR Local Flood Forecasts - Uttoxeter 10/22/2025
The alarm status at Uttoxeter [EAST STAFFORDSHIR...
-  FAIR Local Flood Forecasts - Church ... 10/22/2025
The alarm status at Church Eaton [STAFFORD] has in...

QFlow modelling: On-demand & targeted scenario (culvert/trash screen blockage or reservoir collapse) modelling

Machine Learning & AI

Research by University of Reading to develop an algorithm to detect debris screen blockage based on EA CCTV

High accuracy achieved so far – challenge now to integrate into forecasting system and further analysis of nighttime images

CCTV cameras installed on trash screens where blockages are an issue

VANDAELE ET AL.: AUTOMATED TRASH SCREEN BLOCKAGE SEGMENTATION

1

Automated trash screen blockage segmentation using deep learning

Remy Vandaele¹
r.vandaele@exeter.ac.uk
Sarah L. Dance^{2,3,4}
s.l.dance@reading.ac.uk
Hywel T.P. Williams¹
h.t.p.williams@exeter.ac.uk
Varun Ojha⁵
varun.ojha@newcastle.ac.uk

¹ Joint Centre of Excellence in Environmental Intelligence
University of Exeter
Exeter, UK

² Department of Meteorology
University of Reading
Reading, UK

³ Department of Mathematics and Statistics
University of Reading
Reading, UK



Community schemes & plans

Funding for small-scale, innovative, community interventions to reduce flood risk and increase community resilience – require community engagement and participation to 'co-design' schemes (using local knowledge) with the National Flood Forum

Communities identified through a Community Vulnerability Assessment, known areas of flood issues and areas that contacted us

Tried to balance community types e.g. urban/rural, and vulnerabilities that reduce capacity to respond to flooding and increase flood risk (age, income and proficiency in English)

Brewood, SSDC	Norton Canes Library, CCDC
Silverdale, NBC	Waterhouses, SMDC
Newton Leys, ESBC	Wombourne, SSDC
Church Eaton, SBC	Kitling Greaves, ESBC
Colton, LDC	Hazelwalls Park, ESBC
Norton Canes, CCDC	Endon, SMDC
Cannock AONB, CCDC	Billbrook, SSDC
Cranberry, SBC	Edingale, LDC
Brownhills, Walsall MBC	Valley Road, Walsall
Wallows Wood, Dudley MBC	Compton, Wolverhampton CC

Tailored and location-specific community plans (owned by the community) to steer resilience actions

FAIR schemes

Norton Canes Community Library rain garden using HydroRock (natural aquifer)

You tube ~Video Link

https://youtu.be/clsWnJHeBwo?si=KSWtFB7DwkgFe_2e

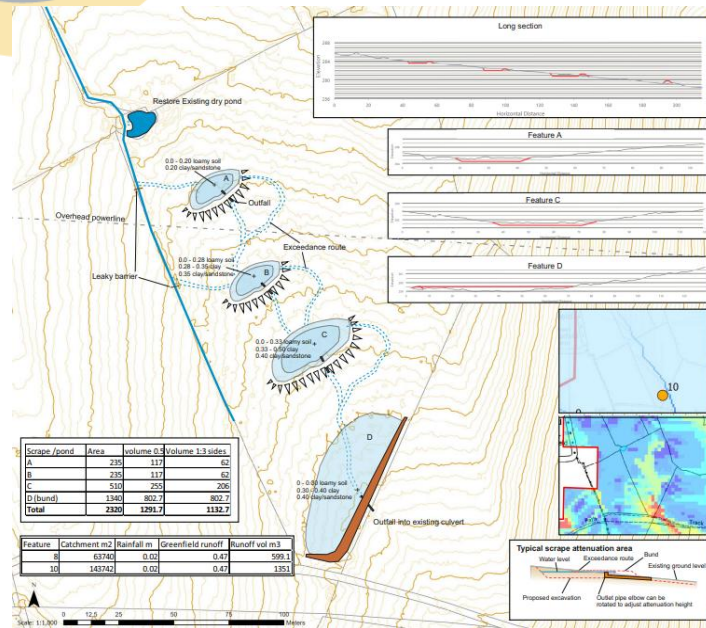




Brewood, South Staffordshire,
Chillington Brook and surface water
flood risk issues



NFM in **Endon**, Staffs Moorlands, with monitoring to test an approach of slowing 1 of 2 tributaries to reduce the risk of the peaks coinciding



More channel works ongoing: 2-stage channel to increase capacity and conveyance around Dales Bridge and PFR solutions for most at-risk properties

Landowner work in **Church Eaton**, Stafford Borough



More channel works ongoing within the village: 2-stage channel to provide more capacity



Schemes 2026 - 2027

Automatic back-racking screen in Hazelwalls Park, East Staffordshire



VMS flood warning signs in Edingale, Lichfield, (connected to level monitors) to advise of flooded roads



Colton village, Lichfield, cut off from flooding

Installing SuDs Pods within Cannock catchment



Further schemes – e.g. Kitling Greaves headwall & trash screen works, Waterhouses SuDs scheme, community flood bins, PFR works

Key Innovation & Learning Benefits

Innovative schemes and materials (e.g. HydroRock) and **technology for flood risk reduction** (e.g. machine learning, surface water flood forecasting, VMS signs)

Changing the way we engage (prior to decision of scheme – **engage, deliberate, decide (EDD)** rather than decide, announce, defend (DAD)) and develop flood interventions in partnerships with communities and local knowledge

Learning benefits from PhD students from the University of Wolverhampton and De Montfort University and Post Doctoral Researcher from De Montfort University:

- Development of a community scale flood resilience framework – PhD research
- Exploring the behavioural elements of active community scale engagement – PhD research
- Measuring the innovation of FAIR – Post Doctoral research

Overall learning and reporting on the project's benefits (traditional benefits through damages and wider, intangible and social benefits of improved flood resilience)