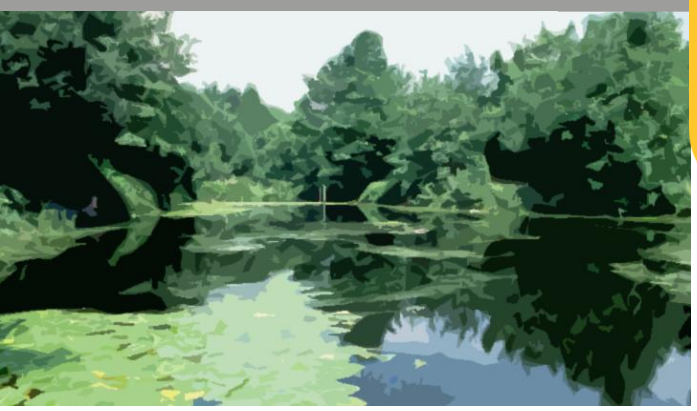
Bury Council




Bury Local Plan

Topic Paper 12:
Water and flood risk

June 2026





Contents

1. Introduction

1.1. This Topic Paper is one of a series that has been prepared as part of the process of evidence gathering to support Bury's emerging Local Plan. It sits alongside a range of other Topic Papers covering the following:

- Climate change and carbon reduction
- Housing
- Economy
- Centres
- Tourism and culture
- Communities
- Transport
- Built Environment and Design
- Green infrastructure
- Open space, sport and recreation
- Green Belt
- Air quality, pollution and hazards
- Other infrastructure

1.2. The principal aim of the Topic Paper is to set out current key policies, plans and strategies relating to this topic area that forms the framework for the development of the Local Plan and to present a profile of the Borough that will highlight key issues, problems and challenges that the Local Plan should seek to address and which have helped to shape and influence the direction and focus of the Local Plan's policies and designations.

2. Background

2.1. Flooding is a natural process and does not respect political or administrative boundaries. It is principally influenced by natural elements of rainfall, tides, geology, topography, river and streams and manmade interventions such as flood defences, roads, buildings, sewers and other infrastructure.

2.2. In Bury, the presence of major rives, small watercourses, ageing infrastructure and the threat of surface water in some areas means flooding is a real issue and, when it occurs, it can seriously affect people's lives and businesses, as witnessed in the Boxing Day floods in December 2015.

3. Context

3.1. One of the key early stages in the process is to review other policies, plans and strategies which are of relevance to this particular topic area and which help to inform and influence the direction of the Local Plan. There is a need for the Local Plan to be consistent with planning policy at different levels.

3.2. The National Planning Policy Framework (NPPF) sets out Government policy in respect of planning matters and this is supported by Planning Practice Guidance (PPG). This sets out the broad planning framework within which development plans are produced.

3.3. Sub-regionally, the Places for Everyone Plan joint plan (PfE) establishes strategic policies and site allocations across nine of the ten Greater Manchester districts. Following its adoption in March 2024, PfE is now a key part of Bury's development plan that sits alongside the Local Plan.

3.4. There are also a range of other plans and strategies that, whilst not being policy, are of relevance to the Borough from a water management and flood risk perspective.

National Planning Policy

3.5. All development plans must be prepared within the context of the Government's planning policies. These are primarily set out within the National Planning Policy Framework (NPPF)[1] which sets out the Government's planning policies for England and how these should be applied. The NPPF provides a framework within which locally prepared plans for housing and other development can be produced.

3.6. The NPPF is supported by separate policy documents related to waste[2] and traveller sites[3] as well as more detailed information in Planning Practice Guidance[4].

3.7. The NPPF 2024 transitional arrangements set out in paragraph 234c apply to the Bury Local Plan, because it is a plan which includes policies to deliver the level of housing and other development set out in a preceding local plan (such as a joint local plan containing strategic policies) adopted since 12 March 2020. As a result,

[1] National Planning Policy Framework
[2] National Planning Policy for Waste
[3] Planning policy for traveller sites
[4] Planning Practice Guidance

the Bury Local Plan will be examined under the relevant previous version of the Framework (i.e. the NPPF December 2023).

3.8. Central to the NPPF is the Government's objective of achieving sustainable development and it highlights that achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways:

- **an economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
- **a social objective** – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- **an environmental objective** – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

3.9. Chapter 14 of the NPPF sets out guidance for flood risk in paragraphs 170-182. It states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. Strategic policies should be informed by a strategic flood risk assessment (SFRA) and should manage flood risk from all sources.

Planning Practice Guidance

3.10. There is further detail for planning and flood risk in the Flood Risk and Coastal Change PPG, 2025 (gov.uk). This covers flood risk assessments, applying the sequential approach to the location of development and the exception test, as well as the role of the Environment Agency and Lead Local Flood Authorities in assessing planning applications.

Greater Manchester Strategy 2025-2035

3.11. The Greater Manchester Strategy 2025–2035, titled "Together We Are Greater Manchester", sets out a shared vision for the next decade: to create a thriving

city region where everyone can live a good life. It is built on the principle that economic success and social progress must go hand in hand, so growth should benefit all people and communities across Greater Manchester.

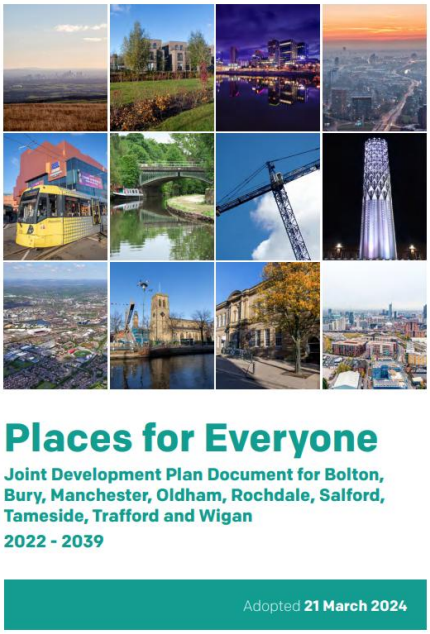
3.12. The strategy focuses on two interconnected priorities:

- Growing the economy by attracting investment, supporting businesses, creating high-quality jobs, driving innovation, and building on Greater Manchester's strengths in sectors such as technology, advanced manufacturing, research, culture, and the visitor economy; and
- Ensuring people can live well by improving the foundations of everyday life, including housing, safety, transport, education, health, and support services. The strategy aims to tackle inequalities, strengthen communities, and improve wellbeing across the city region.

3.13. To create a thriving city region where everyone can have a good life, the Strategy focuses on seven key workstreams:

- Healthy homes for all
- Safe and strong communities
- A transport system for a global city region
- A clear line of sight to high quality jobs
- Everyday support in every neighbourhood
- A great place to do business
- Digitally connected places and people

Places for Everyone



3.14. Places for Everyone (PfE) was prepared as a Joint Development Plan Document of nine of the ten Greater Manchester local planning authorities (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan). The plan was formally adopted in March 2024.

3.15. PfE is the strategic spatial plan that sets out a collective planning policy framework for the nine constituent boroughs. All policies within the plan are 'strategic policies' and it forms a key part of Bury's wider development plan and is used to determine individual planning applications. As such, Bury's Local Plan will need to be consistent with PfE.

3.16. As a strategic plan, Places for Everyone does not cover everything that Bury's Local Plan would. Therefore, Bury's Local Plan will set out more detailed policies reflecting local circumstances.

3.17. PfE Policy JP-S4 Flood Risk and Water Environment requires developments to follow and integrated catchment-based approach to protect the quantity and quality of water bodies while managing flood risk. It also sets requirements for sustainable drainage systems (SuDS) and water efficiency.

Bury's 'Let's Do It!' Strategy

3.18. The Let's Do It! Strategy is Bury's long-term vision for the borough up to 2030, developed with residents, businesses, community groups and public services. Its aim is to make Bury a place with strong economic growth, lower levels of deprivation, and better life chances for everyone, while putting communities at the heart of decision-making.

3.19. At its core, the strategy is based on the belief that everyone has a role to play in improving the borough. Rather than focusing solely on council services, it promotes community power, partnership working and shared responsibility,

encouraging residents, organisations and public services to work together to tackle inequality and improve outcomes.

3.20. The strategy is built around four key themes:

- Locally – strengthening neighbourhoods and townships, supporting prevention and early intervention, and helping communities become more resilient.
- Enterprising – creating jobs, supporting businesses, investing in regeneration, improving skills, and growing a sustainable local economy.
- Together – integrating services and strengthening partnerships between the council, NHS, voluntary sector, businesses and residents.
- Strengths-Based – building on the strengths, assets and capabilities of people, communities and organisations rather than focusing on problems alone.

3.21. Overall, the Let's Do It! Strategy aims to create a healthier, greener, more prosperous and more inclusive Bury, where residents have greater opportunities, stronger communities, and improved quality of life.

3.22. Bury's Local Plan will play a key role in delivering the vision and aims of the Let's Do It Strategy and, as such, it is important that there is alignment between these two key local strategies.

North West River Basin Management Plan, 2022

3.23. The North West River Basin Management Plan[5] outlines the challenges that threaten the water environment and how these can be managed. The environmental objectives in the plan are:

- Preventing deterioration of the status of surface waters and groundwater;
- Achieving objectives and standards for protected areas;
- Aiming to achieve good status for all water bodies;
- Reversing any significant and sustained upward trends in pollutant concentrations in groundwater;
- Cessation of discharges, emissions and losses of priority hazardous substances into surface water;

[5] https://www.gov.uk/guidance/north-west-river-basin-district-river-basin-management-plan-updated-2022

- Progressively reducing the pollution of groundwater and preventing or limiting the entry of pollutants.

Greater Manchester Sustainable Drainage Design Guide

3.24. Guidance on the design, delivery and maintenance of SuDS and forms part of the Greater Manchester Streets for All Design Guidance[6]. The guide brings together key technical design parameters and considerations from across a range of sources and considers them within the Greater Manchester context.

Irwell Catchment Plan 2019-2027, 2019

3.25. The objective of the Irwell Catchment Plan[7] is to work collaboratively to make the water environment in the Irwell catchment, more adaptive and resilient to climate change, whilst addressing environmental inequalities. The plan seeks to:

- Create clean and plentiful water for wildlife and people;
- Resort rivers to improve their natural forms and function;
- Engage and connect more with their local water environment;
- Influence decision makers to ensure the natural environment is enhanced and protected; and
- Support and contribute to integrated waste management practice.

Strategic Flood Risk Assessment

3.26. A Level 1 Strategic Flood Risk Assessment (SFRA) (2026)[8] has been produced to support the production of Bury's Local Plan, the key objectives of the assessment are:

- To consider, identify and assess all possible sources of flood risk.
- To produce a robust SFRA meeting the requirements of the National Planning Policy Framework and national guidance contained in the Planning Practice Guidance (PPG).

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6 https://downloads.ctfassets.net/nv7y93idf4jq/55ES9iyPpTJyNNs2UJW9GM/22040de9172bbb7402d5c34a659beca7/Greater_Manchester_Sustainable_Drainage_Design_Guide_V.1.1.pdf

7 https://catchmentbasedapproach.org/learn/catchment-management-plans/

8 https://www.bury.gov.uk/planning-building-control/planning-policy/bury-local-plan/bury-local-plan-evidence-base

- To inform decisions on the location of future development and the preparation of sustainable policies for the long-term management of flood risk.

Bury Local Flood Risk Management Strategy and Action Plan

3.27. The Bury Local Flood Risk Management Strategy (LFRMS)[9], 2018 focuses on local flood risk from surface water, groundwater and ordinary watercourses but also considers flooding from rivers. The Strategy includes an Action Plan which presents an overview of flood management activities within the Borough.

3.28. The objectives of the Strategy are to:

- Gain a strategic understanding of flood risk from all sources in Bury;
- Manage the likelihood of flooding within the Borough;
- Help Bury residents to manage their own risk;
- Ensure that new development in Bury reduces rather than increases flood risk;
- Improve flood preparation, warning and post flood recovery; and
- Endeavour to balance environmental, social and economic benefits.

3.29. Appendix C of the Bury Level 1 SFRA, 2016[10] sets out further detail on flood and water management legislation and policy.

[9] https://www.bury.gov.uk/asset-library/local-flood-risk-mangement-strategy-2018.pdf
[10] https://www.bury.gov.uk/planning-building-control/planning-policy/bury-local-plan/bury-local-plan-evidence-base

4. Local Profile

4.1. This section sets out a broad profile of the Borough in terms of water and flood risk and should be read alongside the Level 1 Strategic Flood Risk Assessment, 2026. It provides an examination of the main influences on, and challenges associated with flood risk to assist in identifying the key issues that the Local Plan will need to address. The most fundamental and challenging features are considered to centre around the following:

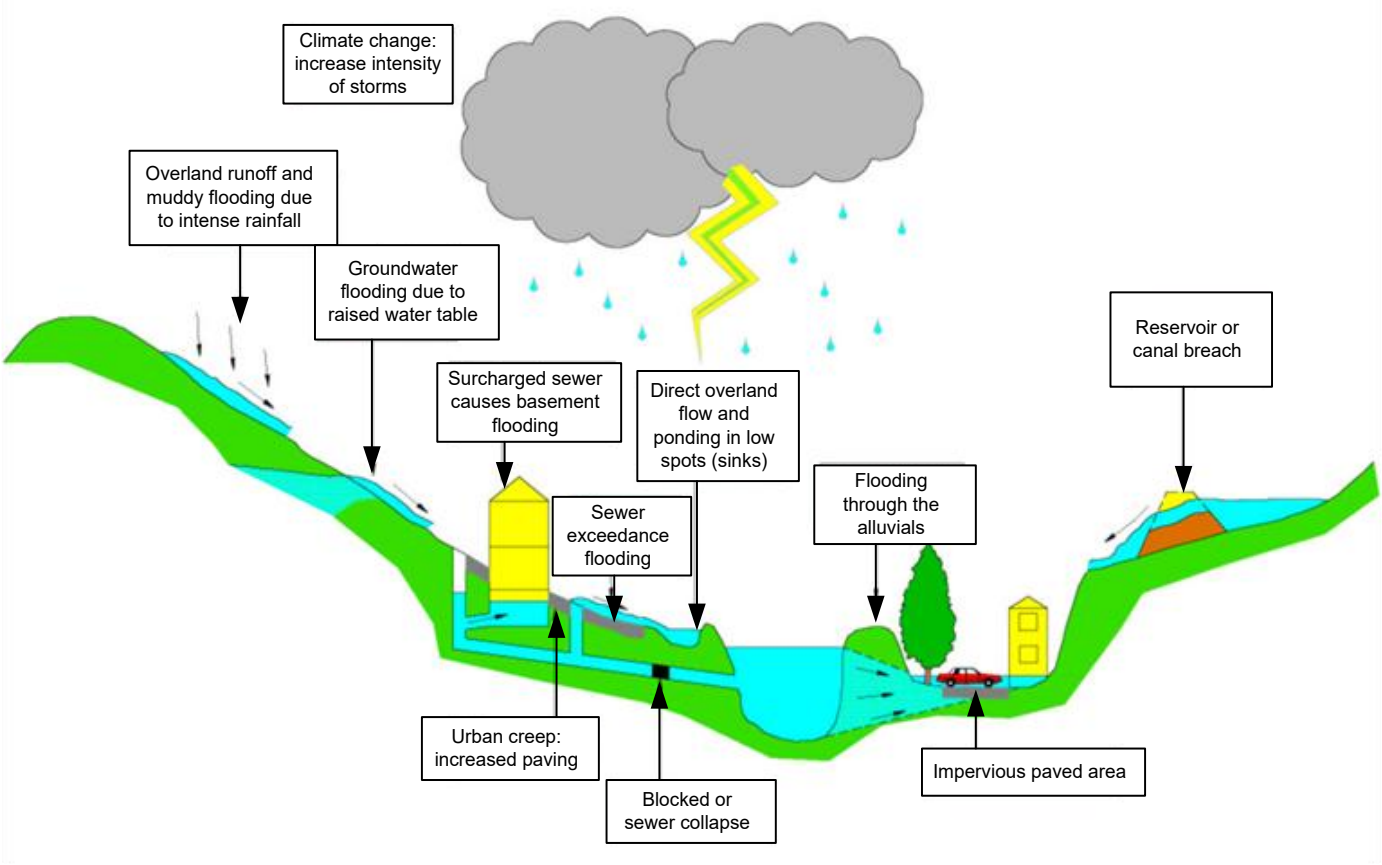
- Flood Risk
  - River (fluvial) flooding
  - Surface water (pluvial) flooding
  - Ground water flooding
  - Sewer flooding
  - Canal flooding
  - Reservoir flooding
- Water resources
- Water efficiency
- Public Water Supply Catchment Areas
- Waste water infrastructure

4.2. Bury is located within the centre of the River Irwell catchment area where river gradients are less but the landscape is still hilly. Much of the Bury area grew rapidly during the industrial revolution with the development of mill buildings and commercial and residential properties on the floodplain. Today, most of the watercourses are heavily modified and contain many culverts and weirs.

4.3. Flooding can occur from a range of sources as highlighted in Figure 1. Often a flood event is caused by a combination of sources, highlighting the complex nature of flooding and the importance of understanding the risk of flooding.

Flood Risk

Figure 1 – Sources of flooding



River flooding

4.4. River flooding occurs when the capacity of the river or stream is reached, causing water to spill out of the channel into nearby areas – for example when heavy rain falls on ground that is already waterlogged and the watercourse cannot cope with the water draining into it from the surrounding land. In some areas the surrounding floodplain of the river may be undeveloped or have flood compatible uses, but in some areas development has occurred within these floodplains.

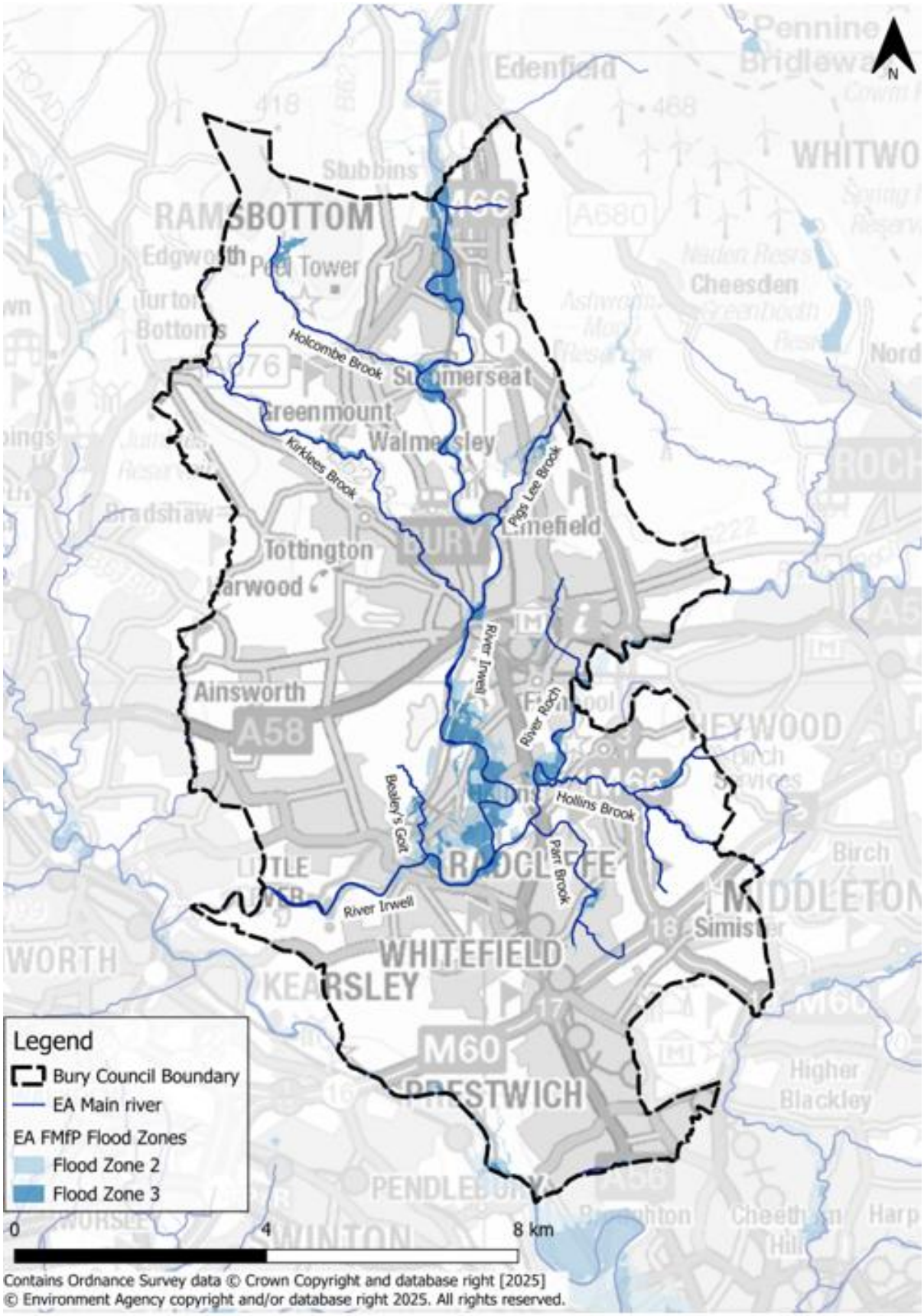
4.5. The main source of fluvial flood risk in the Borough is from the River Irwell and its tributaries, including Holcombe Brook, Pigslee Brook, Kirklees Brook and the River Roch

4.6. Due to the urbanised nature of the Borough, many of the main river channels have been straightened and canalised to accelerate the flow of water and have been culverted over significant lengths. Many now have a limited hydraulic capacity and are prone to blockages which can lead to flooding. These blockages are often caused by silt deposition from the rural upstream sections of the Borough, vegetation falling into the watercourse and through fly tipping where debris is dumped into the river channels.

4.7. The Environment Agency (EA) is responsible for managing the risk of flooding from main rivers. To assist with this, EA produce a Flood Map for Planning (Rivers and Sea), which identify flood zones[11]. These zones refer to the probability of river and sea flooding, ignoring the presence of defences. Figure 2 identifies the EA flood zones in Bury.

[11] https://environment.data.gov.uk/dataset/04532375-a198-476e-985e-0579a0a11b47

Figure 2 – Environment Agency Flood Zones



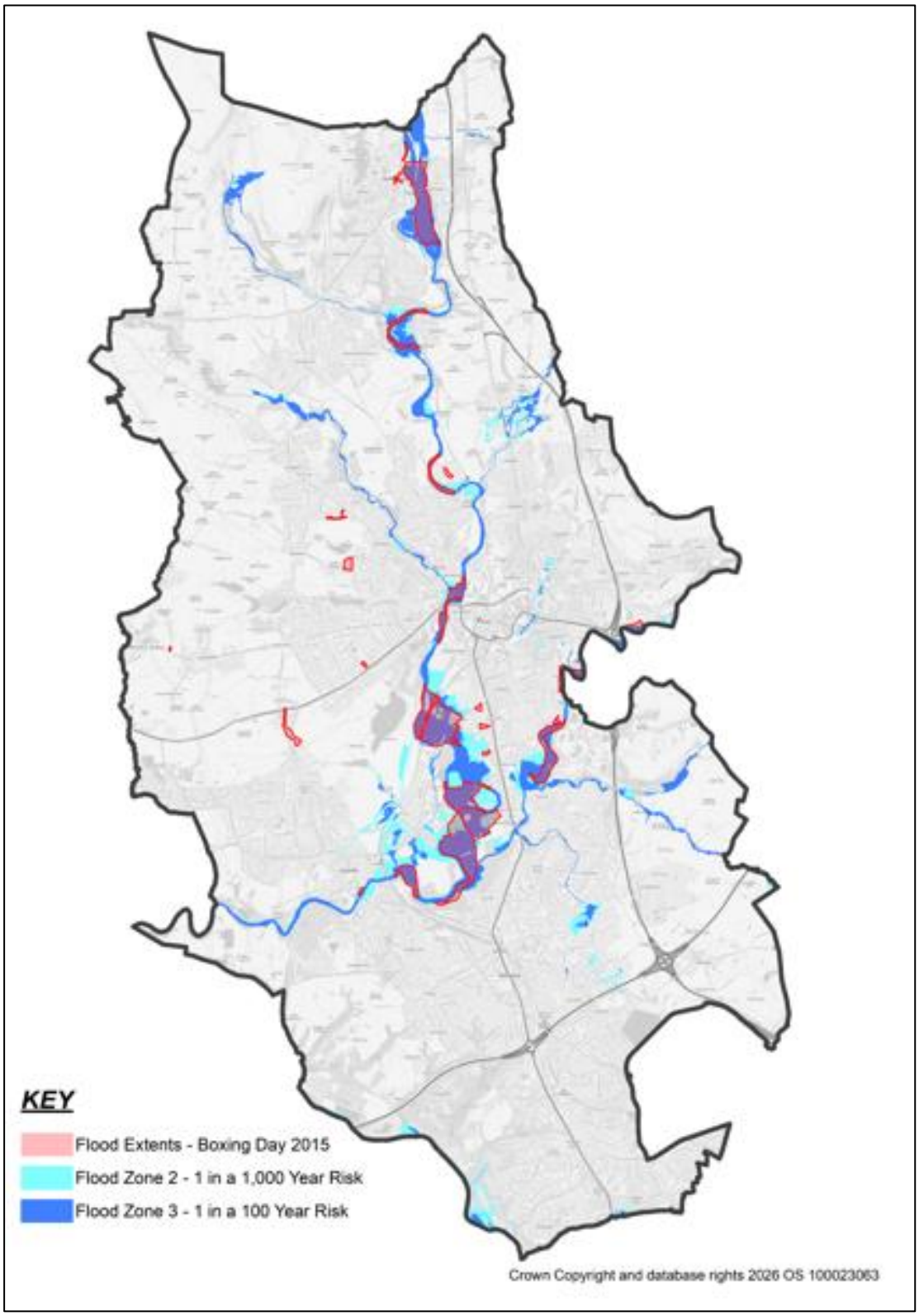
Source: Bury Strategic Flood Risk Assessment (2026)

4.8. Figure 2 identifies that the existing residential areas to the south of Bury in Radcliffe and Redvales are particularly at risk of flooding from the river.

4.9. There is also significant fluvial risk in the north of the Borough in Ramsbottom, along the River Irwell. Additional areas of fluvial risk are identified along tributaries of the River Irwell, including Kirklees Brook.

4.10. The severe flooding experienced on Boxing Day 2015 aligned with these modelled flood extents as identified in Figure 3.

Figure 3 – Known extent of 2015 Boxing Day flooding



Source: Bury Council (2026)

Note: Figure 3 only presents those areas where the flood risk was reported to the Council, either during the evening or afterwards.

Surface water flooding

4.11. Surface water flooding is caused by overland flow during period of sustained or heavy rainfall, causing ponding of water where it becomes obstructed or collects in low lying areas. Local drainage capacity and infiltration is unable to cope with the volume of water experienced. The risk of surface water flooding increases as the amount of built-up area and the volume of impermeable hard surfacing increases within the Borough.

4.12. Due to the steep topography of Bury, the Borough has narrow and shallow surface water flow paths. This has the potential to lead to rapid inundation with higher velocities and hazards.

4.13. Several flow paths have been identified in Borough as surface water flows off the hillsides, collecting in small drains, before flowing to the valley bottom. Run off directly from rural land is also an issue particularly in Ramsbottom, causing flooding to major road networks and individual properties.

4.14. There are also many modified small streams, brooks and culverts which are hidden below ground and their condition is deteriorating, they have become blocked with debris and are the cause of much localised flooding following heavy rain.

4.15. Highway drains connect the highway gullies to surface water sewers. In some instances, the highway drains outfall into a watercourse such as rivers, ponds, soakaways etc. Heavy rainfall can often result in more water on the road than the highway gullies can cope with. During a severe rainfall event, the capacity of drainage system can be overwhelmed by the amount of water trying to run off from the road and flooding can occur.

4.16. Bury Council, as Lead Local Flood Authority is responsible for identifying and managing flood risk from surface water. To assist with this, the Environment Agency produce surface water flood maps, which identify areas at risk from surface water flooding. However, operational staff within the Council know where to target resources in the event of heavy rainfall, in an effort to reduce surface water flooding.

4.17. The EA's Risk of Flooding from Surface Water mapping (RoFSW) (gov.uk) was significantly updated and was published in January 2025. The RoFSW has been used to assess surface water risk within the SFRA and is sumamrised below. The RoFSW map is an assessment of where surface water flooding may occur when rainwater does not drain away through the normal drainage systems or soak into the ground buy lies on or flows over the ground instead. Risk is displayed as one of three likelihood bandings:

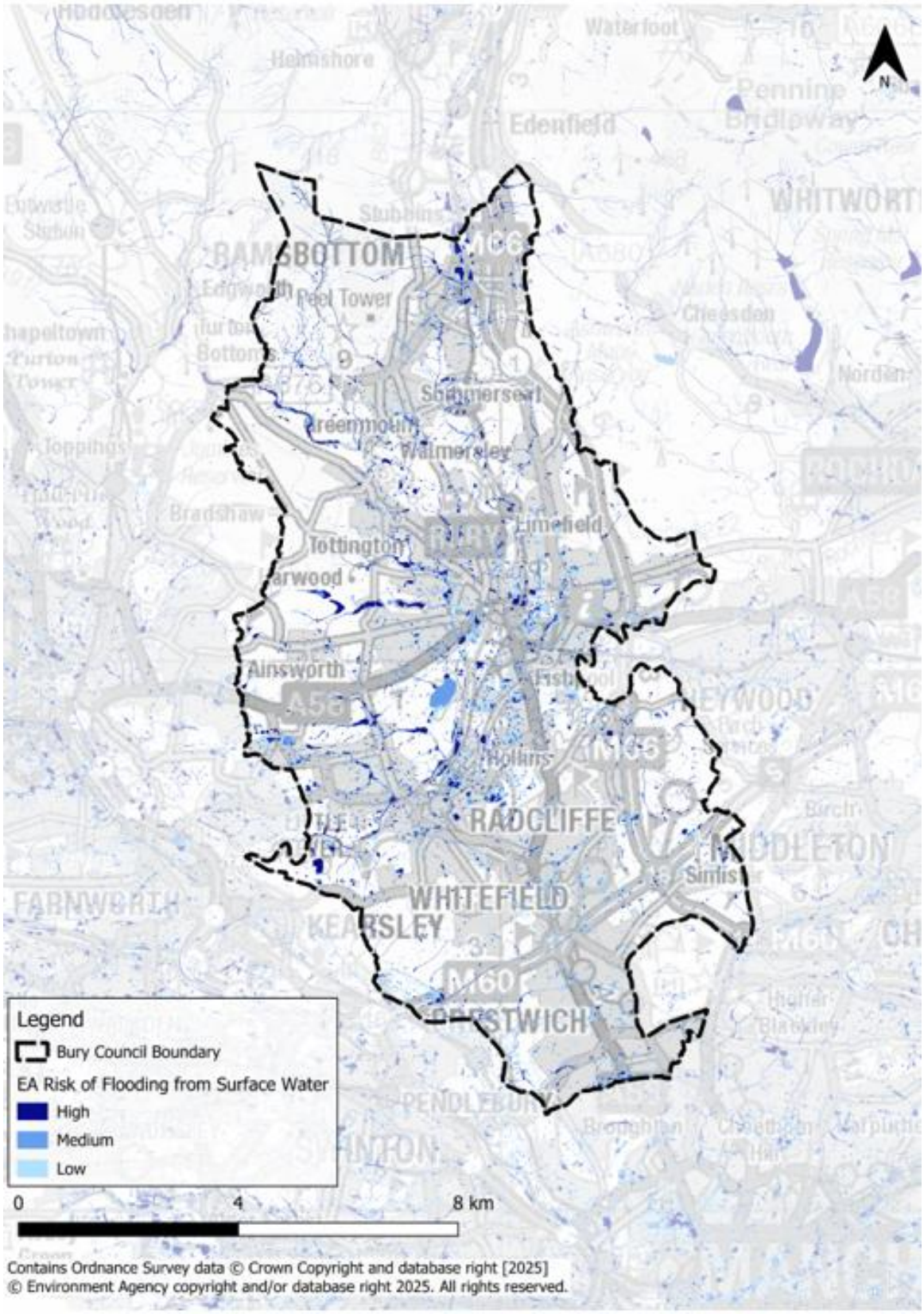
- High - greater than or equal to 3.3% (1 in 30) chance in any given year.
- Medium - less than 3.3% (1 in 30) but greater than or equal to 1% (1 in 100) chance in any given year.
- Low - less than 1% (1 in 100) but greater than or equal to 0.1% (1 in 1000) chance in any given year.

4.18. The RoFSW map does not map flooding less than 0.075m (7.5cm) in depth. Therefore, where the map may show no flooding, there may be shallow flooding up to a depth of 0.075m. Therefore, the RoFSW should not be used to understand flood risk for individual properties but can be considered suitable for high level assessments such as this Topic Paper and the SFRA

4.19. The EA's RoFSW (as shown in Figure 4) highlights several communities in the Borough at risk from surface water flooding. Modelled high risk of surface water flooding is widespread across the Borough. Notably this includes areas of Radcliffe, Bury and Ramsbottom.

4.20. Surface water flow paths generally follow areas of topographic low spots with areas of isolated ponding across the Borough. Additionally, surface water flow routes are also established on roads in the more urban areas within the Borough highlighting risk to transport networks while posing a risk to buildings which water can be routed to.

Figure 4 – Surface Water Flood Extents



Source: Bury Strategic Flood Risk Assessment, 2026

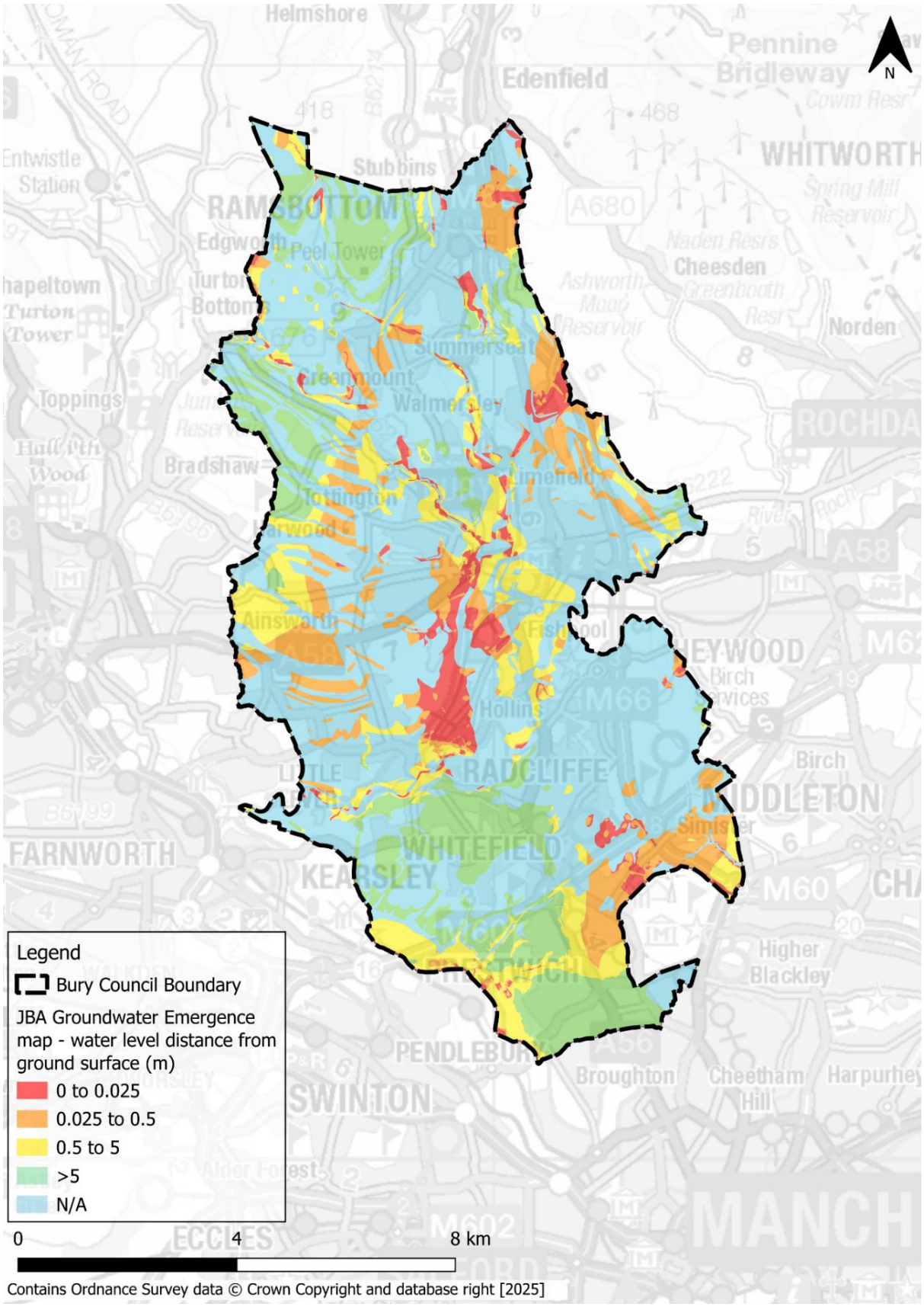
Groundwater flooding

4.21. Groundwater flooding occurs when the water held underground rises to a level where it breaks the surface in areas away from usual channels and drainage pathways. It is generally due to exceptional extended periods of heavy rain but can also occur as a result of reduced abstraction, underground leaks or the displacement of underground flows. Once groundwater flooding has occurred, the water can be in situ for a lengthy period of time.

4.22. Local knowledge of groundwater flooding is limited and often groundwater is not identified as a distinct event. The Level 1 SFRA has considered the likelihood of groundwater flooding and concluded that the areas with the greatest risk generally follow watercourses, most notabley the River Irwell (see Figure 5). There are relatively few reported incidents of groundwater flooding in Bury however communities potentially at risk include:

- Bury
- Radcliffe
- Walmersley
- Whitefield

Figure 5 – Groundwater Emergence Map



Source: Bury SFRA (2026)

Sewer flooding

4.23. Sewer flooding is caused by excess surface water entering the sewer network, exceeding available capacity or when a blockage occurs. This generally occurs during periods of heavy rainfall when the drainage network becomes overwhelmed. Land and property can be flooded with water contained with raw sewage as a result. Sewers that overflow can also pollute rivers.

4.24. New developments should not cause additional pressures on existing sewers due to the requirements to maintain greenfield runoff rates. However, increases in rainfall as a result of climate change can lead to existing sewers becoming overloaded, although this can be reduced through the use of well-designed SuDS to reduce surface water runoff.

4.25. United Utilities (UU) is the water company responsible for the management of the sewerage networks in Bury.

4.26. Based on the United Utilities recorded historic incidents dataset, the areas with the highest number of recorded sewer flood events are Tottington, Redvales, St Mary's and Sedgley. It should be noted that historic incident records only indicate past susceptibility to sewer flooding and do not necessarily represent current risk. These locations may have since benefitted from network upgrades or targeted mitigation works.

Canal flooding

4.27. Canals are rivers or manmade channels that were originally developed for transport. Canal flooding is caused by overtopping or breach of the canal network when the canal cannot cope with the water entering it or when a wall or embankment collapses.

4.28. The Manchester, Bolton and Bury Canal runs through the centre and west of the Borough. The canal is owned and maintained by the Canal & River Trust. This canal has the potential to interact with other watercourses in the Borough, including the River Irwell where the two watercourses run adjacent to each other at Redvales. In the event of a breach, these watercourses have the potential to convey water from the canal to elsewhere in our downstream of the Borough increasing floor risk elsewhere.

4.29. Canals are regulated waterbodies and are unlikely to flood unless there is a sudden failure of an embankment or a sudden ingress of water from a river in areas where they interact closely. Embankment failure can be caused by:

- Lack of poor maintenance;

- Culvert collapse;
- Overtopping;
- Animal burrowing
- Subsidence/sudden failure e.g. collapse of former mine workings; and
- Utility or development works close or encroaching onto the footings of a canal embankment

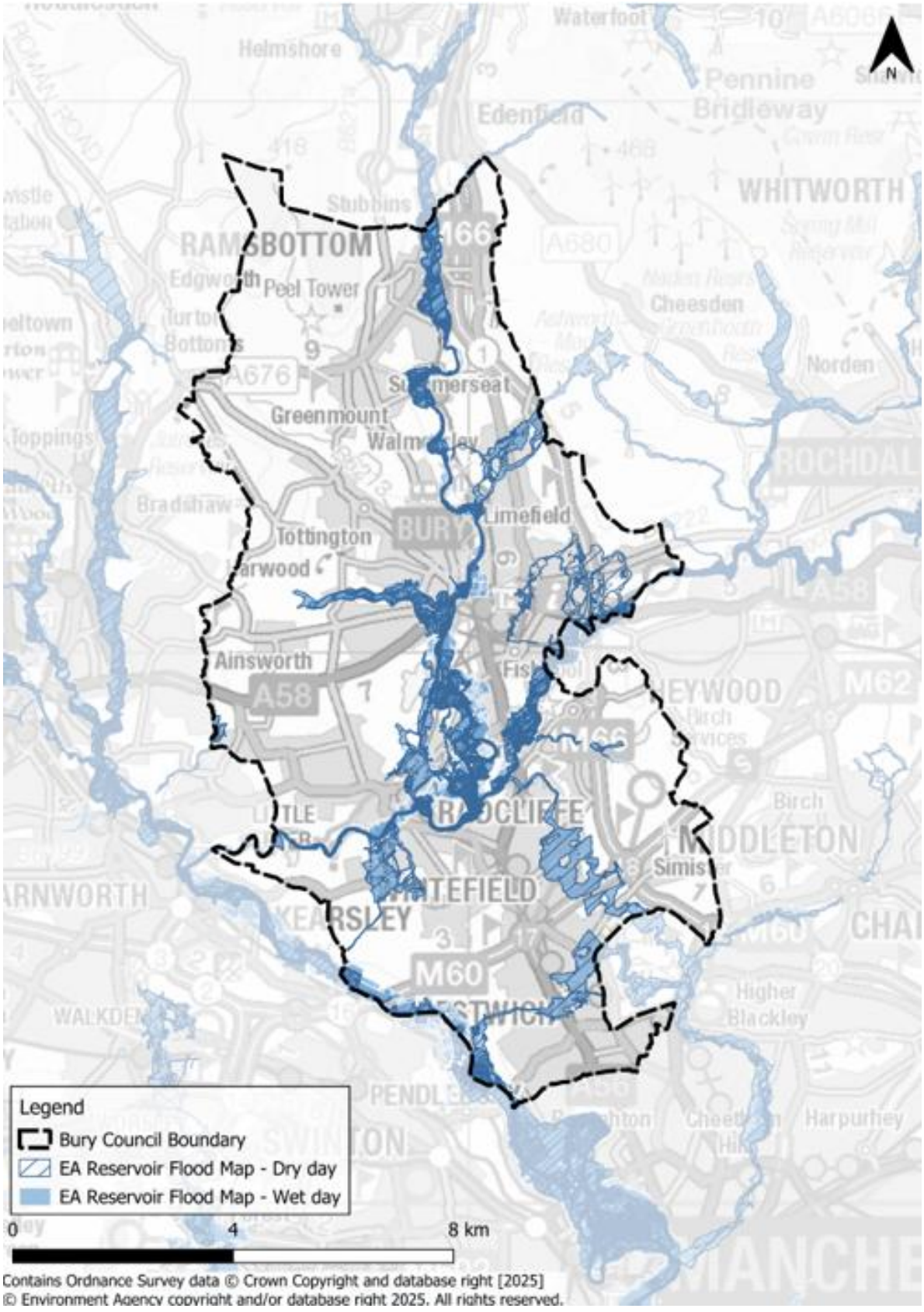
4.30. Flooding from a breach of a canal embankment is largely dictated by canal and ground levels, canal embankment construction, breach characteristics and the volume of water within the canal that can discharge into the lower lying areas behind the embankment. The volume of water released during a breach is dependent on the pound length (i.e. the distance between locks) and how quickly the operating authorities can react to prevent further water loss, for example by the fitting of stop boards to restrict the length of the canal that can empty through the breach, or repair of the breach. The Canal & River Trust monitor embankments at the highest risk of failure for canalised systems that they own.

Reservoir flooding

4.31. Reservoirs hold large volumes of water above ground level and are contained by walls or dams. Reservoir flooding occurs when a reservoir structure is overtopped or fails due to damage or collapse.

4.32. The Environment Agency provide two flooding scenarios for the RFM: a ‘dry-day’ and a ‘wet-day’. The ‘dry day’ scenario shows the predicted flooding which would occur if the dam or reservoir fails when rivers are at normal levels. The ‘wet day’ scenario shows the predicted worsening of the flooding which would be expected if a river is already experiencing an extreme natural flood. It should be noted that these datasets give no indication of the likelihood or probability of reservoir flooding. The EA maps (see Figure 7) represent a credible worst-case scenario. In these circumstances it is the time to inundation, the depth of inundation, the duration of flooding and the velocity of flood flows that will be most influential.

Figure 7 – EA Reservoir Flood Map



Source: Bury SFRA, 2026

4.33. The current mapping shows that there are 12 reservoirs located within the Borough and a further 56 reservoirs located outside of the Borough which may pose a risk within the Borough (detailed in **Error! Reference source not found.** of the SFRA[12]). Elton Reservoir is the largest reservoir within the Borough.

4.34. The Generic Reservoir Off-Site Plan (December 2024) outlines the Greater Manchester emergency response to any reservoir failure. In addition, there are Specific Reservoir Off-Site Plans for those reservoirs within Greater Manchester which are in the top 100 reservoirs with the most serious consequences in a failure. Bury does not host any of these reservoirs, but a considerable number would impact upon the Borough, should they fail. The Generic and Specific plans have been tested at strategic, tactical and operational levels in the Borough and at a Greater Manchester level.

4.35. United Utilities has a programme of pro-active reduction which is reducing the risk of reservoir failure even further, on a year-by-year basis. The reservoirs operated by United Utilities in Bury are water storage reservoirs which are filled from the water mains. They are therefore not affected by river flooding and are intrinsically lower risk structures than the majority of reservoirs.

Summary of flood risk in the Borough of Bury

4.36. The risk across the Borough is varied:

- Fluvial risk predominantly originates from the River Irwell and the River Roch. Areas at risk include south of Bury town, Redvales and Radcliffe, along with Ramsbottom in the north of the Borough. Additional areas of fluvial risk are identified along tributaries of the River Irwell, including Kirklees Brook. Communities at risk from fluvial flooding along Kirklees Brook include Woolfold and Woodhill.
- Surface water risk is scattered across the Borough, largely comprised of areas of ponding within topographically low areas. Narrow flow paths are produced as a result of the steep topography of the Borough.
- Groundwater emergence risk is greatest in areas of Bury, Radcliffe, Walmersley, and Whitefield.
- Reservoir flood risk is, predominately along the River Irwell and the River Roch. Other areas of risk include Whitefield and areas to the east of Bury town.

[12] https://www.bury.gov.uk/planning-building-control/planning-policy/bury-local-plan/bury-local-plan-evidence-base

Water resources

4.37. Bury's origin and development is heavily associated with its watercourses. Settlements grew up at bridging points and factories were built on sites where they could exploit water to power machinery and treat cloth. As a result, the Borough's watercourses have been much altered and have suffered from excessive pollution since the late 18th century.

4.38. The River Irwell is now protected and managed according to the principle of the European Water Framework Directive (WFD). Water quality is generally managed by the Environment Agency and United Utilities through their discharge consent systems.

4.39. As assessment is made in respect of the whole water environment to help direct action to where it is most needed and is based on the requirements of the WFD. The Directive requires consideration to be given to over 30 measures grouped into two key measures – ecological considerations and chemical assessment. For a water body to be in overall 'good' status both ecological considerations and chemical status must be at least good.

4.40. As assessment of chemical status is required in water bodies where priority substances and other specific pollutants are known to be discharged in significant quantities. In 2019, the method of assessing chemical status changed and as a result all waterbodies since then now fail the chemical status assessment.

4.41. The Environment Agency (EA) produced River Basin Management Plans for England and Wales to ensure that these countries can meet the duties set out under the European Water Framework Directive. The plans identify several actions to improve water quality and fisheries and reduce flood risk but also note the need to restore, where feasible, natural bank form and flood plain through the removal of culverts, canalisation and weirs. At a local level, the EA commissioned a study identifies specific recommendations for the physical restoration of the River Irwell and Kirklees Brook. Recommendations included removal of weirs, reconnection of the Irwell to its natural flood plain and the need to install fish ladders on weirs that need to be retained for flood defence.

4.42. A similar study has been produced for the River Roch which identified opportunities for river restoration in order to comply with the Water Framework Directive (WFD) mitigation measures. To this effect, weirs, revetment works and potential flood storage areas have been identified and possible options for improving channel morphology, habitat creation and diversity and increasing fish passage.

Water efficiency

4.43. Water supply and sewerage is supplied by United Utilities to Bury. Most of the water supply to the Borough comes from the Haweswater reservoir via the Haweswater Aqueduct and Woodgate Hill Water Treatment Works and a variety of connections on the Manchester Ring Main. There are some supplies from the Wayoh Water Treatment Works which primarily feeds Tottington and parts of Ainsworth. The northern areas of the Borough such as Holcombe and Ramsbottom receive a mixture of Haweswater and Haslingden Grane Water Treatment works supplies.

4.44. Climate change and population and economic growth are putting increasing pressure on water availability for homes and businesses. As such, it is important that water is conserved and used efficiently as much as possible to help to secure future water supplies and adapt to climate change; to enable future growth; reduce carbon emissions from water treatment and disposal; and to protect river and wetland habitats from degradation.

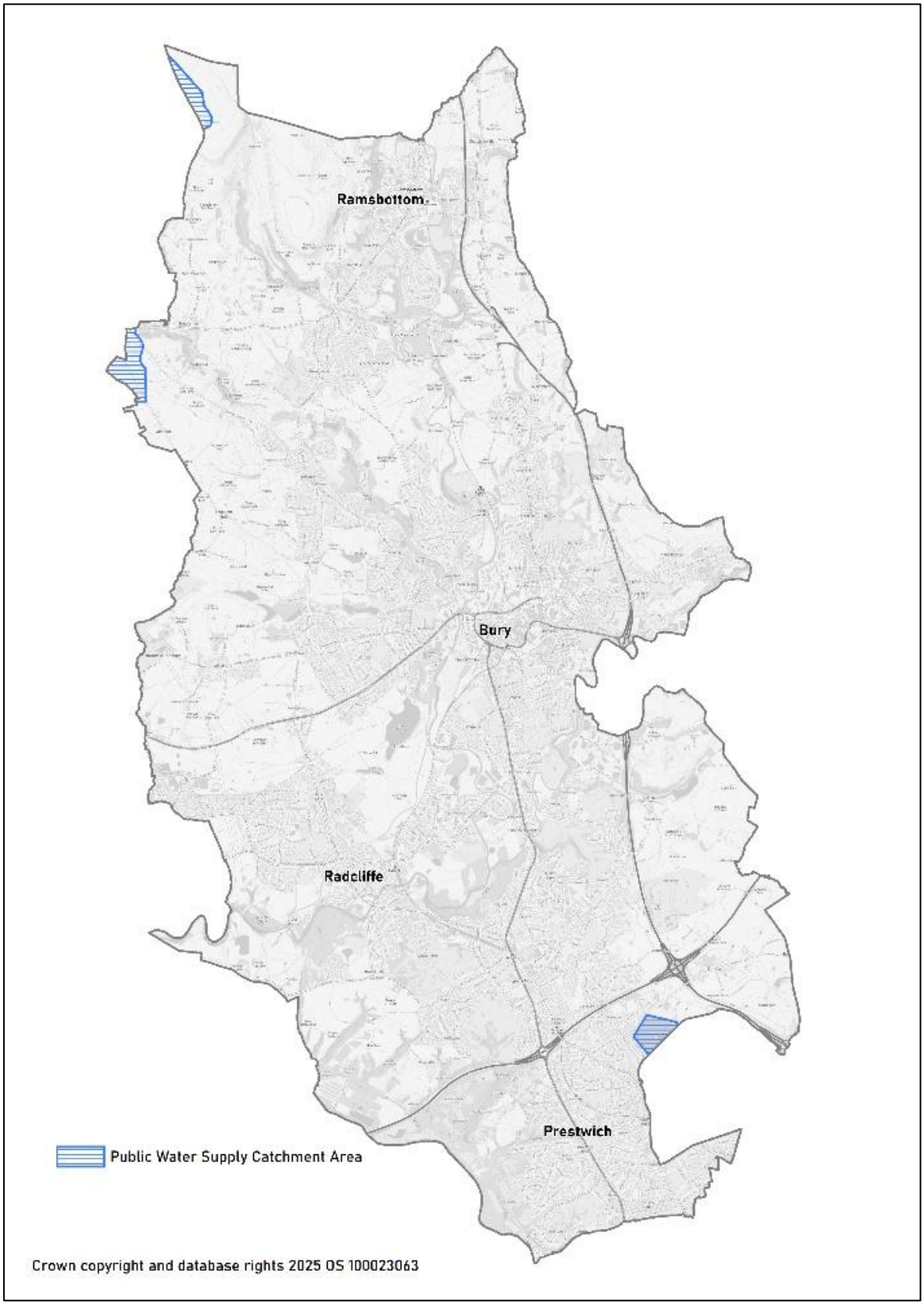
4.45. Criterion 7 of Places for Everyone Policy JP-S4 states that as a minimum, residential development should meet the mandatory water efficiency standard of 125 litres/person/day as set out in Building Regulations. District local plans may and should consider setting a tighter water efficiency standard of 110 litres/person/day where there is a clear local need with reference to national guidance on housing optional technical standards. Tighter standards may be required as a result of the increasing effects of climate change, population increase and the requirements of modern industry which are putting increased pressure on water resources.

Public Water Supply Catchment Areas

4.46. Small parts of Bury are identified as public water supply catchment areas (see Figure 8). Development proposals on land identified as a public water catchment area can have an impact on water supply resources and applicants for development on such land will need to engage with the statutory undertaker for water to determine whether any proposal is on land used for public water supply catchment purposes.

4.47. In cases of wind energy proposals on water catchment land, the applicant should seek to locate development so that the impact on public water supply is minimised through the location of the development and through the undertaking of appropriate risk assessments and the inclusion of mitigation measures in the design and construction process. It is particularly important to avoid the location of new wind turbines on deep peat land.

Figure 8 – Public Water Supply Catchment Areas



Source: Bury Council

Wastewater infrastructure

4.48. There are currently two wastewater treatment works operating within the administrative area of Bury (Bury and Bolton Wastewater Treatment Works). New development must ensure that the occupiers of new developments will enjoy an appropriate standard of amenity and will not be adversely affected by neighbouring uses and vice versa.

Water Resources

4.49. Rivers, streams and canals are all elements of the green and blue infrastructure networks. They provide vital benefits to people and nature, helping to tackle climate change and flooding while supporting recreation, tourism, and the landscape.

4.50. However, climate change is putting increasing pressure on water supplies through more frequent dry periods and a greater risk of flooding. Urban growth and pollution are also placing additional strain on the water environment. Many rivers have been significantly altered over time, and none of the borough's watercourses are currently classed as being in good ecological condition.

4.51. There is a need to protect and improve watercourses and their surrounding environments so they can continue to form part of a connected green and blue infrastructure network. This includes creating opportunities for natural flood management, restoring rivers to more natural conditions, enhancing water quality, and maintaining undeveloped buffer zones alongside watercourses. These measures help support effective management, strengthen ecosystem health, and deliver benefits for both people and wildlife

5. Future influences on flooding

Climate Change

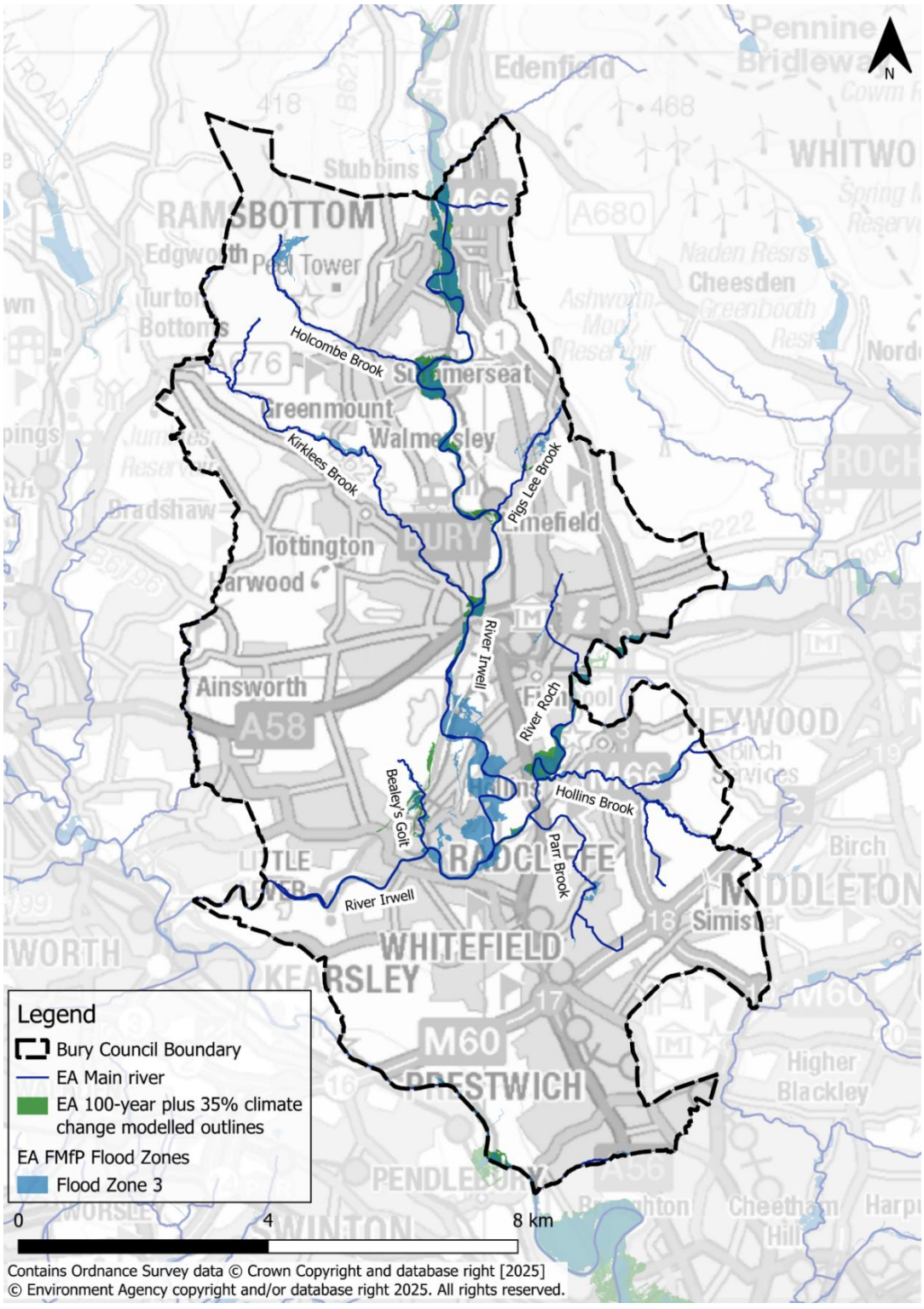
5.1. The NPPF sets out that flood risk should be managed over the lifetime of a development, taking climate change into account. This section sets out how the impact of climate change on flood risk should be considered

5.2. Climate change is expected to significantly change rainfall patterns in the United Kingdom. This means that flooding in the UK is expected to be more frequent, to a greater extent, deeper and faster.

5.3. The SFRA (2026) projected the likely extent of a flood zone 3 under a climate change scenario (which assumed a 35% increase in the extent of the EA flood zone 3). In this scenario (see Figure 9), there is an increased flood risk along the

River Irwell and River Roch. Other areas at increased risk include Bury Town Centre, Summerseat, Fletcher Fold and Ramsbottom.

Figure 9 – EA Detailed Flood Model Outlines - 100-year plus 35% climate change



Source: Bury Council SFRA (2026)

New Development

5.4. The location of future developments and flood defences within a catchment can heavily influence flood risk within an area and has the potential to further increase flood risk at areas downstream of such developments. Impacts could include the lowering of the Standard of Protection offered by flood defences and the capacity of culverts, drains, sewers and watercourse channels. This potentially leads to areas being at risk of flooding that were previously not at risk and highlights' the increasing conflicts and pressures that are emerging between climate change scenarios and future development aspirations.

5.5. There is also a risk that an increase in hard standing and impermeable surfaces associated with new development will increase surface water run-off and hence the risk of flooding.

5.6. Flood risk should be considered at an early stage in deciding the layout and design of a site to provide an opportunity to reduce flood risk within the development.

5.7. The NPPF states that a sequential, risk-based approach should be applied to try to locate more vulnerable land uses away from high-risk areas to higher ground and lower flood risk areas, while more flood-compatible development (e.g., recreational spaces) can be located in higher risk areas. Higher risk areas can also be retained and enhanced as natural green space. Whether parking in floodplains is appropriate will be based on the likely flood depths and hazard, evacuation procedures and availability of flood warnings and alerts. The nature of risk to water quality also needs to be considered and mitigated to ensure that accumulated hydrocarbons and other vehicle related pollutants are not released to the aquatic environment.

5.8. Waterside areas, or areas along known flow routes, can be included in development layouts as blue green infrastructure, being used for recreation, amenity, and environmental purposes, allowing the preservation of flow routes and flood storage, whilst at the same time providing valuable social and environmental benefits contributing to other sustainability objectives. Appropriate landscaping should provide safe access to higher ground from these areas and avoid the creation of isolated 'dry islands' as water levels rise.

5.9. Section 8 of the SFRA (2026) sets out principles for site design through ground level modifications, consideration of the impact of defence infrastructure and property flood resilience.

6. Flood risk management

6.1. Flood risk management aims to reduce the likelihood or impact of flooding. Often the most effective approach is through a combination of the measures.

Flood risk management hierarchy

6.2. The hierarchy of principles identified in Figure 10 should be applied to all development proposals within the Borough.

Figure 10 - Flood risk management hierarchy

Step 1	Step 2	Step 3	Step 4	Step 5
Assess	Avoid	Substitute	Control	Mitigate
Appropriate flood risk assessment	Apply the sequential approach	Apply the sequential test at site level	e.g. SuDs, design, defences.	e.g. flood resilient construction

6.3. Where a proposed development involves a site that has been identified as being at risk of flooding, or where it is considered that it could affect flood risk elsewhere, the Council will need to be satisfied that issues of flood risk have been considered in advance of any development taking place. In such instances, the Council will require applications to be accompanied by a detailed Flood Risk Assessment. National policy and guidance on flood risk provide detailed information on the scope and content of Flood Risk Assessments.

Sustainable Urban Drainage Systems

6.4. Sustainable Drainage Systems (SuDS) are management practices which enable surface water to be drained in a more sustainable manner and to mimic the local natural drainage. The inclusion of SuDS within developments is also an opportunity to enhance ecological and amenity value, and promote blue green infrastructure, incorporating above ground features into the development landscape strategy. SuDS are designed to maximise the opportunities and benefits that can be secured from surface water management practices.

6.5. Paragraph 182 of the NPPF states that "*'applications which could affect drainage on or around the site should incorporate sustainable drainage systems to control flow rates and reduce volumes of runoff, and which are proportionate to the nature and scale of the proposal. These should provide multifunctional benefits wherever possible, through facilitating improvements in water quality and biodiversity, as well as benefits for amenity*.

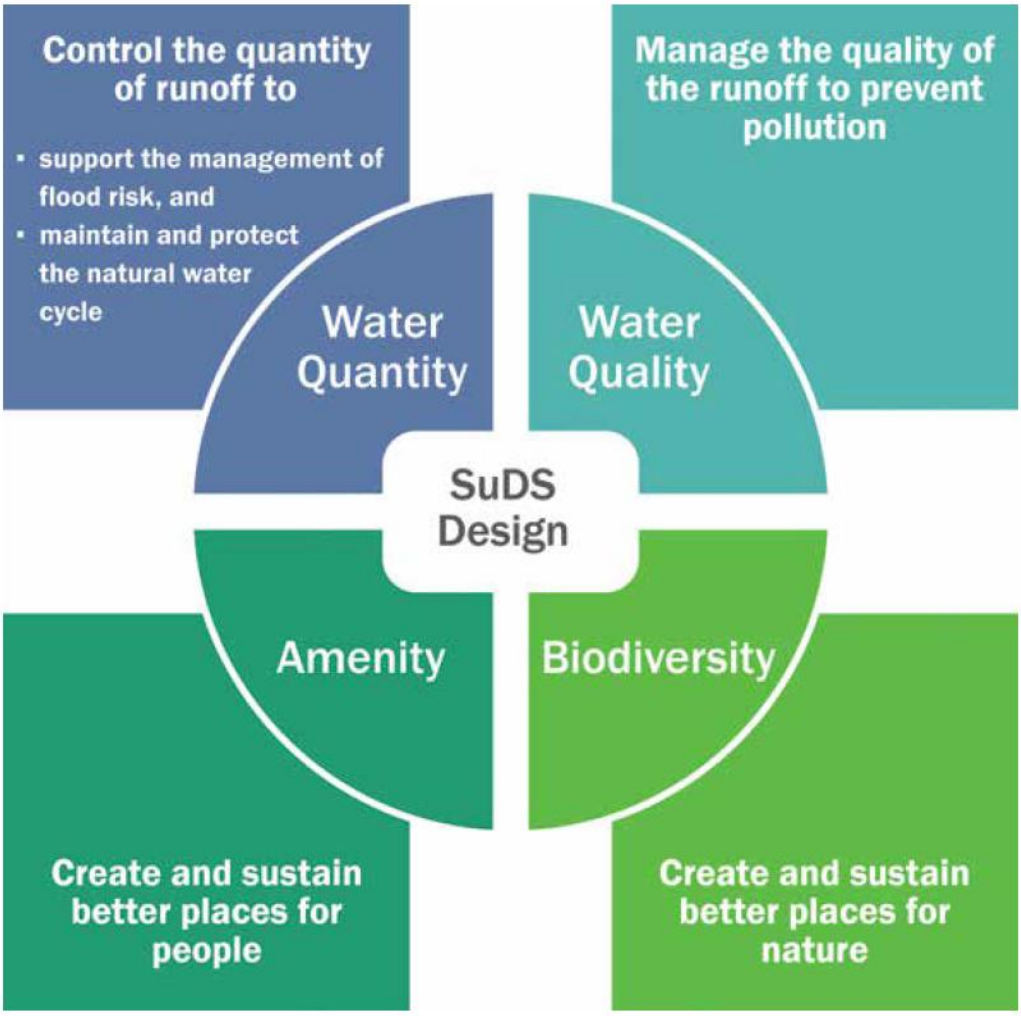
6.6. SuDS are often viewed as taking up large areas of land within development sites. This is not necessarily the case, as there are a number of different SuDS components that can be used. The following hierarchical approach should be used when considering drainage options:

- Into the ground (infiltration);
- To a surface water body;
- To a surface water sewer, highway drain, or other drainage system; and
- To a combined sewer.

6.7. Application of the hierarchy for managing surface water is a key requirement for all development sites to reduce flood risk and the impact on the environment. Clear evidence must be submitted to demonstrate why alternative preferable options in the surface water hierarchy are not available.

6.8. Foul and surface water drainage must be considered early in the design process. Sustainable drainage should be integrated with the landscaped environment and designed in accordance with the four pillars of sustainable drainage (water quantity, water quality, amenity and biodiversity) – see Figure 11. It should identify SuDS opportunities, such as green roofs; permeable surfacing; soakaways; filter drainage; swales; bioretention tree pits; rain gardens; basins; ponds; reedbeds and wetlands.

Figure 11 – The Four Pillars of SuDS



6.9. It is important that SuDS are managed and maintained for the lifetime for the development so that features can continue to function as designed. Consideration should be given to enhancing SuDS to achieve biodiversity net gain

6.10. At the time of writing, the implementation of SuDS is driven through planning policy. Schedule 3 of the FWMA 2010 aims to provide a framework for the approval and adoption of drainage systems, to designate SuDS Approving Bodies (SAB) within unitary and county councils, and to ensure national standards on the design, construction, operation, and maintenance of SuDS for the lifetime of the development are followed. Timescales for the enactment of Schedule 3 by government are unknown.

6.11. Section 9 of the SFRA (2026) provides an overview of SuDS, including signposting to relevant guidance, as well as guidance for developers on surface water drainage strategies.

Critical Drainage Areas

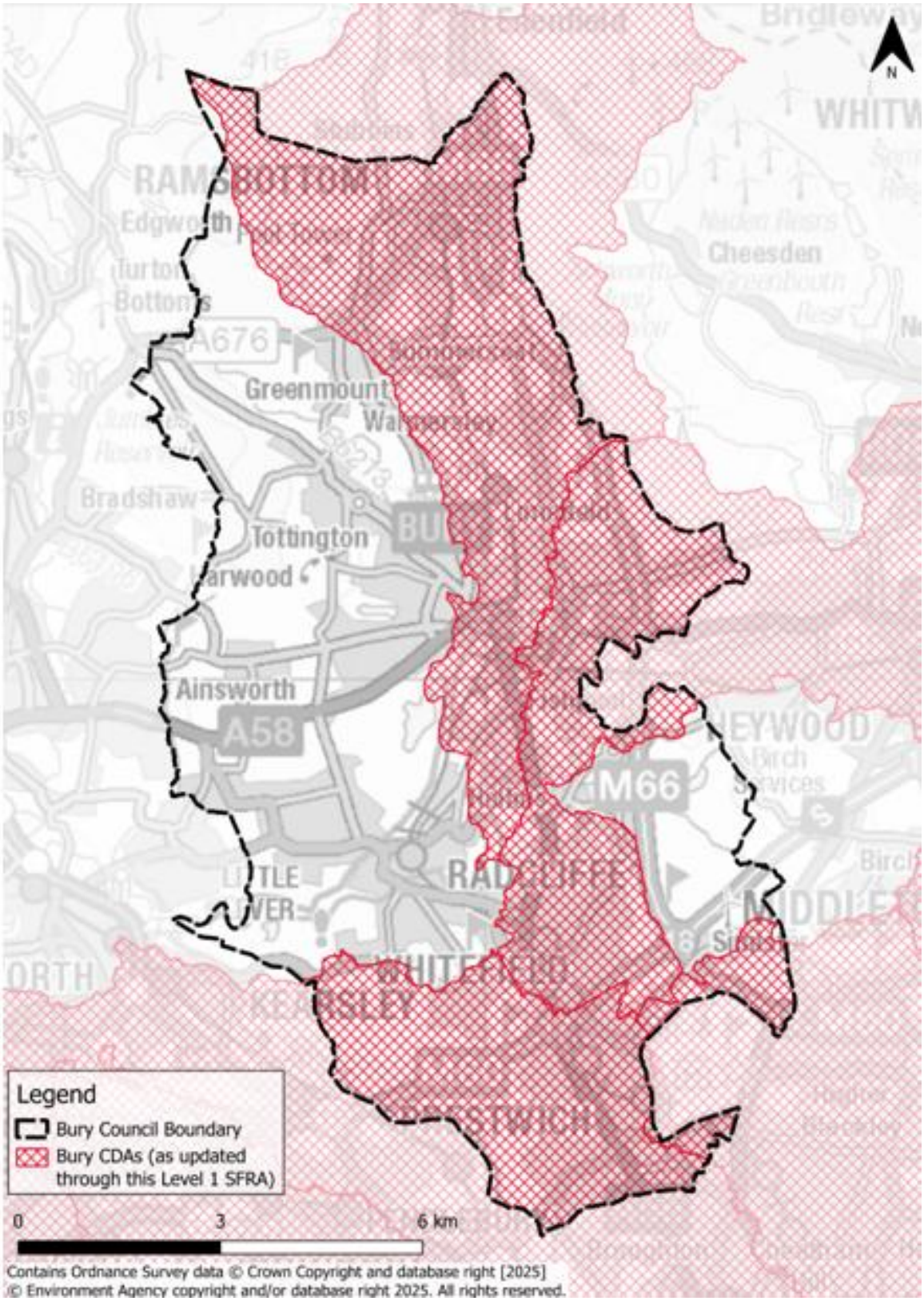
6.12. The Environment Agency can designate Areas with Critical Drainage Problems (ACDPs). ACDPs may be designated where the EA is aware that development within a certain catchment/drainage areas could have detrimental impacts on fluvial flood risk downstream and/or where the EA has identified existing fluvial flood risk issues that could be exacerbated by upstream activities. No ACDP have been identified in Bury.

6.13. Local authorities can choose to designate Critical Drainage Areas (CDAs) within their Borough. GMCA updated the CDAs for the Greater Manchester authorities in 2022. The GM CDAs were based on the river catchments with the highest number of properties predicted to be at risk from surface water flooding, using the EA's Risk of Flooding from Surface Water mapping, and sewer flooding, based on UU modelled data. GM designated CDAs within Bury included Whitefield and Prestwich in the south and areas to the east of Bury town centre.

6.14. The GM CDAs were delineated prior to the release of the National Flood Risk Assessment 2 (NaFRA2) surface water mapping in March 2025. Whilst the GM CDAs continue to align well with the locations modelled to be at high risk in the NaFRA2 surface water mapping, there are also some areas within the north of the Borough, around Ramsbottom, that were identified as being at risk.

6.15. Therefore, the CDA's for Bury have been updated through the Bury SFRA, finalised in 2026, to include the catchment covering Ramsbottom in addition to the catchments covering Whitefield and Prestwich in the south, and areas to the east of Bury town centre, as shown in Figure 6. These areas would all benefit from having more stringent surface water management measures imposed for new development.

Figure 6 – Critical Drainage Areas in Bury



Source: Bury Level 1 SFRA, 2026**Error! Reference source not found.**

Natural Flood Management measures

6.16. Natural Flood Management (NFM) or Working with Natural Processes (WwNP) is a type of flood risk management used to protect, restore and re-naturalise the function of catchments and rivers to reduce flood risk.

6.17. Work such as tree planting or changes to land or river management can slow or reduce how much water runs off the hills upstream, which can sometimes help reduce flood risk in downstream locations. This is known as Natural Flood Management and can help to increase society's resilience to floods.

6.18. However, natural flood management is not appropriate in every case and these measures can take a long time to establish and produce a change in river flows, so are usually only used in combination with other measures.

6.19. Natural flood management measures may include:

- Peatland and moorland restoration in upland catchment;
- Re-meandering rivers and streams;
- Targeted woodland planting;
- Reconnection and restoration of functional floodplains;
- Restoration of rivers and removal of redundant structures;
- Instalment or retainment of large woody material in river channels;
- Improvements in the management of soil and land use;
- Implementation of Rural and urban sustainable drainage systems (SUDS); and
- Encouraging land use changes to slow water.

6.20. The EA published Working with Natural Process to Reduce Flood Risk[13] in February 2025 for Working with Natural Processes to reduce flood risk 2024 (gov.uk) to support the implementation of NFM, with maps showing locations with the potential for NFM measures. These maps are intended to be used alongside the evidence directory to help practitioners think about the types of measure that may work in a catchment and the best places in which to locate them.

6.21. In Bury, work has been completed on Holcombe Moor to restore, conserve and manage the peat to reduce carbon in the atmosphere, improve habitats for wildlife and protect local communities from flooding. Works included sphagnum

[13] https://www.gov.uk/flood-and-coastal-erosion-risk-management-research-reports/working-with-natural-processes-to-reduce-flood-risk-2024

moss planting, creation of peat dams, creation of peat bunds and reprofiling gullies and peat hags. In addition, Phase 3 of the Radcliffe and Redvales Flood Alleviation Scheme incorporates a NFM programme. NFM measures are planned along Stanney Brook, south-east of Rochdale, comprising of natural earthworks to increase flood storage along the Brook, prior to it joining the Roch.

6.22. The Natural Environment Investment Readiness Fund aims to develop an investment ready model to deliver environmental improvements on farmland across the Upper Irwell catchment. In consultation with farmers and landowners, NFM measures and habitat restoration will be implemented across the catchment with the aim to increase climate resilience and provide flood benefits to downstream communities. Floodplain restoration represents the most sustainable form of strategic flood risk solution, by allowing watercourses to return to a more naturalised state, and by creating space for naturally functioning floodplains working with natural processes.

Structural measures

6.23. Flood walls or embankments are designed to form physical barriers to stop water overflowing into the surrounding areas. Where flood banks are used, it is usually possible to incorporate footpaths or cycle paths along the top and link into a wider green infrastructure network.

6.24. Construction of localised raised floodwalls or embankments to protect new development is not a preferred option, as a residual risk of flooding will remain. New defence works would normally be into in place to protect existing development. Compensatory storage must be provided where raised defences remove storage from the floodplain. This is because raised defences prevent floodwater from spreading naturally across the floodplain, which can increase flood levels elsewhere.

6.25. Where development is located behind, or in an area that benefits from defences, both the undefended risk and the residual risk of flooding from defence breaching or overtopping must be considered by the developer and it must be demonstrated that they can be safely managed.

Radcliffe and Redvales Flood Management Scheme

6.26. The Radcliffe and Redvales Flood Risk Management Scheme (FRMS) was designed to reduce the flood risk from the River Irwell south of Bury and west of Radcliffe. There is a long history of flooding in the area from the river overtopping its banks. The Boxing Day 2015 event resulted in flood damage to over 700 residential buildings, multiple commercial properties and critical infrastructure such as Bury Wastewater Treatment Works (WwTW) and electricity substations.

The area also experienced flooding during the storm Ciara flood event in February 2020.

6.27. The primary source of flood risk is fluvial flooding from the River Irwell. Surface water run-off, artificial drainage systems, reservoirs and a disused canal are also potential sources of flooding in what is a heavily urbanised part of the Irwell catchment.

6.28. The Radcliffe and Redvales scheme defences have been designed with a 100-year design life and will provide protection against a flood with a 1% chance of occurring in any one year, considering predicted climate change increases. The scheme will reduce flood risk to more than 800 homes and local businesses from flooding, it will also help keep transport routes and infrastructure open during times of flood, maintaining vital links in an area.

6.29. The scheme includes:

- A 2.5 flood wall and 3m high earth embankment totalling 660m in length and the creation of new wildlife habitat and increased amenity areas for the public at Close Park;
- Sheet piled wall and embankments along Morris Street and Dumers Lane totalling 350m in length;
- Vertical piled retaining walls at Warth Road, totalling 310m in length;
- Vertical piled retaining walls and concrete retaining walls at Keswick Drive totalling 220m in length;

- Gravity retaining walls and sheet pile retaining walls at Redvales Business Park, totalling approximately 790m in length;
- L-shaped retaining walls, sheet piles and precast concrete units at York Street totalling 270m;
- Two sections of pre-cast concrete retaining walls and a demountable flood defence at Bury Point;
- Modifications to Hardy's Gate bridge to install flood gates;
- A combination of flood embankment and retaining wall at Lower Hinds, totalling 460m in length.

6.30. The majority of the Radcliffe and Redvales FRMS is now complete, and the community is benefitting from a much-increased standard of protection against flooding compared to 2015. New telemetry has now been installed at Warth Bridge to allow EA to monitor river levels on the River Irwell and operate the proposed flood gates. Works began to remove Hinds Weir in September 2024, taking the river back to a more natural state and enabling fish passage. The remaining works comprise of installation of flood gates at Hardy's Gate Bridge.

Flood water storage areas

6.31. Flood water storage areas/basins are designed to hold back excess water during a flood. This would reduce the amount of water travelling downstream and reduce the risk of the river overflowing in downstream locations.

6.32. The starting point for identifying areas of possible flood storage is to look at potential green infrastructure because land that could slow water drainage could also have multiple benefits such as, improving water quality, wildlife and habitat conservation, recreation and carbon storage.

7. Summary of Key Issues

7.1. This Water and Flood Risk Topic Paper has highlighted a number of key issues that need to be considered in taking the Local Plan forward. These include:

- Significant areas of the Borough are at risk of river and surface water flooding. Development will need to be located away from areas of flood risk, ensure it is well protected from flood risk and does not increase flood risk elsewhere.
- Insufficient capacity in the sewer and drainage network to accommodate increasing amounts of surface water.
- The need to ensure that development does not adversely affect water quality and seek it improve where possible
- Consideration of setting a tighter water efficiency standard.
- Ensuring there are no adverse impacts on amenity, safety or public water supply where development is to be located near to existing or future wastewater or water treatment works, pumping stations, other wastewater infrastructure or public water supply catchment areas.
- The need to ensure that SUDS are incorporated into development proposals and are designed in accordance with the four pillars of sustainable drainage.
- Consideration of having more stringent surface water management measures imposed for new development in Critical Drainage Areas identified in the 2026 Level 1 SFRA
- Ensuring SuDS are managed and maintained for the lifetime for the development so that features can continue to function as designed
- The need to protect and improve watercourses and their surrounding environments so they can continue to form part of a connected green and blue infrastructure network.

Bury Council