# Local Flood Risk Management Strategy

## Prepared for the London Borough of Brent


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Brent

# Executive Summary

The London Borough of Brent (Brent) has produced a new Local Flood Risk Management Strategy (LFRMS) to replace the previous LFRMS which was published in 2015. A LFRMS is a statutory requirement under the Flood and Water Management Act (FWMA) 2010 and sets out how local flood risk will be managed by Brent over the next six years.

This LFRMS explains the roles and responsibilities of Risk Management Authorities (RMAs) with regards to flood risk. Brent is at risk of flooding from a variety of sources, which includes risks from surface water, rivers, ordinary watercourses, groundwater, sewers, and artificial sources such as reservoirs. The risk from each of these sources can be viewed in the maps produced alongside the LFRMS.

Importantly, Brent must consider how flood risk can be managed sustainably, through both Sustainable Drainage Systems (SuDS) and Natural Flood Management (NFM). Sustainable flood risk management can help to manage the risks posed by climate change; therefore, this is encouraged as much as possible to ensure future resilience to flooding. Although Brent is taking action to reduce flooding in the borough in the coming years through the introduction of Flood Alleviation Schemes (FASs), there are many actions individuals can take to reduce their own risk, which is encouraged to ensure that everyone can help to reduce the potential damage that can be caused by flooding and improve the recovery following a flooding event.

Six strategic objectives have been set out by Brent to manage flooding over the next six years, which are outlined below. Each objective is accompanied by specific tasks which are included in the Action Plan (*Appendix A1* – Action Plan) which accompanies this document.

A. Improve our knowledge and understanding of the different flood risks in Brent.
B. Improve clarity on the roles and responsibilities surrounding flooding.
C. Reduce the risk of flooding to the community in Brent by delivering targeted Flood Alleviation Schemes (FASs) and encouraging the use of Sustainable Drainage Systems (SuDS).
D. Improve community awareness of flood risk and support successful communication to develop resilience to flooding in Brent.
E. Maximise sustainability benefits to take a holistic approach to flood management, taking into account the impact of climate change.
F. Identify funding and resources available to encourage future development within flood risk management in Brent.

All the stakeholders identified in the LFRMS will be invited to contribute to a public consultation process. This will allow primary stakeholders, local community groups and individuals to comment on the LFRMS before it is adopted and published by the council. The actions identified in the Action Plan will be frequently reviewed, and a monitoring and reviewing plan has been produced to keep track of the progress made on these actions.

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# FIGURES AND TABLES



# ACRONYMS AND ABBREVIATIONS

| Abbreviation | Definition |
|---|---|
| Brent | London Borough of Brent |
| CFMP | Catchment Flood Management Plan |
| CIL | Community Infrastructure Levy |
| MHCLG | Ministry of Housing, Communities and Local Government |
| DWMP | Drainage and Wastewater Management Plan |
| EA | Environment Agency |
| FAS | Flood Alleviation Scheme |
| FCERM | Flood and Coastal Erosion Risk Management |
| FRMP | Flood Risk Management Plan |
| FRR | Flood Risk Regulations |
| FWMA | Flood and Water Management Act |
| GiA | Grant in Aid |
| GLA | Greater London Authority |
| HRA | Habitats Regulations Assessment |
| IPPC | Intergovernmental Panel on Climate Change |
| LFRMS | Local Flood Risk Management Strategy |
| LLFA | Lead Local Flood Authority |
| LoDEG | London Drainage Engineers Group |
| MAFP | Multi-Agency Flood Plan |
| NFCERMS | National Flood and Coastal Erosion Risk Management Strategy |
| NFM | Natural Flood Management |
| NPPF | National Planning Policy Framework |
| NWLFRMG | North West London Flood Risk Management Group |
| PFR | Property Flood Resilience |
| PFRA | Preliminary Flood Risk Assessment |
| PPG | Planning Policy Guidance |
| RFRA | Regional Flood Risk Appraisal |

| | |
|---|---|
| RMA | Risk Management Authority |
| RoFSW | Risk of Flooding from Surface Water |
| SAB | SuDS Approving Body |
| SEA | Strategic Environmental Assessment |
| SFRA | Strategic Flood Risk Assessment |
| SuDS | Sustainable Drainage Systems |
| SWMP | Surface Water Management Plan |
| TE2100 | Thames Estuary 2100 Plan |
| TfL | Transport for London |
| TFA | Thames Flood Advisors |
| TRFCC | Thames Regional Flood and Coastal Committee |
| TWUL | Thames Water Utilities Limited |
| WFD | Water Framework Directive |

# 1 INTRODUCTION

## 1.1 What is a LFRMS?

A Local Flood Risk Management Strategy (LFRMS) sets out how a Lead Local Flood Authority (LLFA) is planning to effectively manage flood risk in a local area. The LFRMS identifies the flood risk issues in the local area and creates a set of strategic objectives for the LLFA to effectively deliver on flood risk management. This LFRMS sets out how flood risk will be managed in the London Borough of Brent (Brent) between 2024 – 2030. It discusses the roles and responsibilities of different Risk Management Authorities (RMAs), the types/risk of flooding and historic flooding occurrences in Brent, what Brent has done and is doing to manage flood risk, sustainable flood risk management, and provides advice for residents. The LFRMS is to be used to provide information to individuals, communities, businesses, and other authorities with flood risk management responsibilities in Brent.

This LFRMS contains the following topics:

- ***Introduction***
- ***Roles and Responsibilities***
- ***Local Flood Risk***
- ***Advice for Residents***
- ***What the Council Have Done to Manage Flood Risk***
- ***Sustainable Flood Risk Management***
- ***How the Council is Planning to Manage Flood Risk for 2024 - 2030***
- ***Conclusion***

## 1.2 Legislative context

A LLFA is required to 'develop, maintain, apply and monitor a strategy for local flood risk management in its area' under Section 9 of the Flood and Water Management Act (FWMA) (2010). It is also required to be updated every six years or following major changes to overarching policy and legislation. Brent's previous LFRMS was published in 2015. This document is the new version of the LFRMS which contains updates on the progress made since the last publication and sets out the current and future plans to manage flood risk in Brent.

In addition, the LFRMS must align with other relevant legislation, including the National Flood and Coastal Erosion Risk Management Strategy (NFCERMS) and associated Flood and Coastal Erosion Risk Management Strategy Roadmap to 2026. A summary of the relevant international, national, regional, and local legislation with regards to flood risk management can be found in *Appendix B1* - Legislation.

## 1.3 Key documents

A Strategic Environmental Assessment (SEA) and Habitats Regulations Assessment (HRA) have been written in conjunction with the LFRMS to assess the impacts of delivering the LFRMS. These are included in *Appendix A2* - SEA and *Appendix A3* - HRA. An Action Plan (*Appendix A1* – Action Plan) has also been developed which identifies the actions required to meet the strategic objectives proposed as part of the LFRMS.

### 1.3.1 Strategic Environmental Assessment

A SEA evaluates the environmental implications of the LFRMS, which is a requirement under the Environmental Assessment of Plans and Programmes Regulations (2004). The procedure for undertaking the assessment is set out by the Strategic Environmental Assessment (SEA) Directive. There are five stages of assessment which include:

**Stage A** – Setting the context and objectives, establishing the baseline and deciding on the scope.

**Stage B** – Developing and refining options and assessing effects.

**Stage C** – Preparing the environmental report.

**Stage D** – Consulting on the draft strategy and the SEA report.

**Stage E** – Monitoring the significant effects of implementing the strategy.

### 1.3.2 Habitats Regulations Assessment

A HRA evaluates whether the LFRMS could negatively impact local plans on a recognised protected European site beyond reasonable scientific doubt, which is a requirement under the Conservation of Habitats and Species Regulations (2017). The HRA process undergoes three stages which are as follows:

**Task 1: Screening** - To check if the strategy, plan or proposal is likely to have a significant effect on a European site's conservation objectives.

**Task 2: Appropriate Assessment** - To assess the significant effects of the proposal in more detail and identify ways to avoid or minimise any effects.

**Task 3: Derogation** - To consider if proposals that would have an adverse effect on a European site qualify for exemption.

The HRA which has been undertaken as part of this LFRMS covers Task 1 (Screening). This determines whether the further tasks are required, dependent on whether there is a risk of a likely significant effect on a European site, and if there is insufficient evidence to rule out a risk.

### 1.3.3 Strategic documents

The LFRMS also aligns with the following strategic documents which have been produced for Brent:

- Brent Borough Plan 2023 - 2027
- Local Plan 2019 - 2041
- West London Level 1 Strategic Flood Risk Assessment
- Strategic Flood Risk Assessment Level 2 (2020)
- Surface Water Management Plan (2011)
- Climate and Ecological Emergency Strategy 2021 - 2030
- London Surface Water Strategy

Further information on these documents can be found in *Appendix B1* - Legislation.

## 1.4 Strategic objectives

A set of six strategic objectives have been produced for the LFRMS. These are the targets that Brent will aim for during the following six-year period of the LFRMS. They align with the latest guidance set by the NFCERMS 2020, which focuses on:

- Climate resilient places
- Today's growth and infrastructure resilient in tomorrow's climate
- A nation ready to respond and adapt to flooding and coastal change

An Action Plan (set out in *Appendix A1* – Action Plan) has been developed which outlines the actions that will be delivered against each target, to work towards improved flood risk management in Brent.

A. Improve our knowledge and understanding of the different flood risks in Brent.

B. Improve clarity on the roles and responsibilities surrounding flooding.

C. Reduce the risk of flooding to the community in Brent by delivering targeted Flood Alleviation Schemes (FASs) and encouraging the use of Sustainable Drainage Systems (SuDS).

D. Improve community awareness of flood risk and support successful communication to develop resilience to flooding in Brent.

E. Maximise sustainability benefits to take a holistic approach to flood management, taking into account the impact of climate change.

F. Identify funding and resources available to encourage future development within flood risk management in Brent.

# 2 ROLES AND RESPONSIBILITIES

## 2.1 What are the roles and responsibilities of different authorities?

There are several different organisations which have a role in managing flood risk within Brent, known as Risk Management Authorities (RMAs). The RMAs are identified in the FWMA (2010) as the LLFA, EA, Water Companies, Highways Authorities, Internal Drainage Boards (not relevant to Brent), and district and borough councils. These include both government organisations and private companies and they have a duty to cooperate with each other under the act. *Table 2.1* summarises the different sources of flooding and who is responsible for the management of each type of flooding.

**Table 2.1: Risk Management Authority responsibilities with regards to flood risk**

| **Flood Risk Responsibility** | **Risk Management Authority** | | | |
|---|---|---|---|---|
| | Brent LLFA | Environment Agency | Thames Water | Transport for London |
| Fluvial flooding from main rivers | | ✓ | | |
| Tidal flooding | | ✓ | | |
| Ordinary watercourses (non-main rivers) | ✓ | | | |
| Flooding from public sewers | | | ✓ | |
| Groundwater flooding | ✓ | | | |
| Reservoir flooding | | ✓ | | |
| Surface water flooding | ✓ | | | |
| Highway drainage and asset management of major A-roads | | | | ✓ |
| Highway drainage and asset management of other public roads | ✓ | | | |

### 2.1.1 London Borough of Brent

Brent LLFA has the overall responsibility for managing flood risk within Brent. This is predominantly the risk of flooding from surface water, groundwater and ordinary watercourses (which are defined in *Section 3.2.3*). There are also different responsibilities distributed across various internal departments. Brent has responsibilities outlined under different acts, as outlined below:

Flood and Water Management Act 2010

- Develop, maintain, apply and monitor a strategy for local flood risk management in its area (Section 9)
- Carry out flood risk investigations upon coming aware of a flood in its area. The threshold for an investigation is outlined in *Figure 2.1* (Section 19)
- Establish and maintain a register of structures or features which are likely to have a significant effect on a flood risk in its area (Section 21)

Section 19 flood investigation thresholds:

- When internal flooding of one building has been experienced on more than one occasion (at least three times) within two years of the initial flood incident
- When internal flooding of five or more properties within the borough has been experienced during a single flood incident
- When critical infrastructure (e.g. main roads, railways, utilities, necessary buildings) has been affected by flooding more than once within a 12-month period

Internal flooding: where water enters the habitable part of a residential property. This excludes garages, outhouses, storage areas and gardens.

**Figure 2.1: Brent's Flood Investigation Criteria under Section 19 of the FWMA (2010)**

Land Drainage Act 1991

- Carry out flood risk management work if the work is considered desirable with regards to the LFRMS for the area, and the purpose of the work is to manage flood risk in the authority's area from surface runoff or groundwater (Section 14A)
- Regulating the flow of ordinary watercourses by prohibiting obstructions on ordinary watercourses, and requiring works for maintaining the flow of an ordinary watercourse (Sections 23 and 25)

Town and Country Planning Order 2015

- Undertake a statutory consultee role on surface water drainage proposals for major developments, see *Section 6.5* within this document

Civil Contingencies Act 2004

- Play a lead role in emergency planning and recovery after a flood event

Flood Risk Regulations 2009

- A duty to prepare a preliminary assessment report in relation to flooding in its area (Section 10)
- A duty to identify flood risk areas (Section 14)
- A duty to prepare flood hazard maps and flood risk maps in relation to each relevant flood risk area (Section 19)

### 2.1.2 The Environment Agency

The Environment Agency (EA) is the national flood risk authority for England.

The EA has responsibility over main rivers and reservoirs. Under the FWMA (2010) they also have strategic overview of all sources of flooding and coastal erosion. There are six main rivers which flow through Brent: the River Brent which intersects the borough running from the northeast to southwest, the Wealdstone Brook which runs through the London Borough of Harrow to the north of Brent down to its confluence with the River Brent near the centre of the borough, the Wembley Brook and Mitchell Brook which are both tributaries leading into the River Brent to the south of the borough, the Kenton Brook, and the Church Drive Drain in Kingsbury. A map showing the EA's designated main rivers can be viewed here.

Further responsibilities of the EA are as follows:

- Issuing flood warnings, in partnership with the Met Office.
- Maintaining the construction and maintenance of some flood defences on main rivers.
- Providing consent for and enforcement of works near to or within main rivers.
- Supporting other RMAs by providing resources and allocating Government funding for projects.
- Acting as a statutory consultee for major planning applications in areas where there is a risk of flooding and for any site greater than one hectare in size.
- Preparing preliminary assessment maps and reports.
- Preparing flood hazard maps and flood risk maps.
- Preparing and providing guidance on Flood Risk Management Plans (FRMPs).
- Maintaining a register of reservoirs.

### 2.1.3 Thames Water Utilities Limited

Thames Water Utilities Limited (TWUL) is the water and sewerage company responsible for managing the risk of flooding to water supply and sewerage facilities, including surface water, foul and combined sewers. Under Section 94 of the Water Industry Act (1991) they have the responsibility to provide, improve and extend the public sewer system, to cleanse and maintain those sewers, to ensure that the area is effectively drained. They must collaborate with other RMAs and advise LLFAs on any work being carried out in the area.

### 2.1.4 Category One responders

Category One responders are organisations which have a duty to respond to emergencies such as a serious flooding incident, as detailed in the Civil Contingencies Act (2004). These include local

authorities, emergency services and others (EA). In Brent, Category One responders include Brent Council, Emergency Services, and the EA.

The Civil Contingencies Act (2004) also requires Category One responders to maintain plans for preventing emergencies and for reducing, controlling or mitigating the effects of emergencies in the response and recovery phases. Brent produced a Multi-Agency Flood Plan (MAFP) in 2014, which is maintained by the Brent Emergency Planning and Control unit and updated annually. The MAFP covers scenarios relating to surface, fluvial or sewer flooding in Brent, flooding resulting from a failure and/or overtopping of the Brent Reservoir (Welsh Harp), and flooding resulting from a structural failure of the Grand Union Canal Aqueduct over the A406.

### 2.1.5 Transport for London

Transport for London (TfL) manages the public transport network for London. Under the Highways Act (1980) they have the responsibility for managing highway drainage and roadside ditches along the TfL red routes. The only TfL red route in Brent is the A406 which runs through the centre of the borough.

### 2.1.6 Landowners

Private landowners have the responsibility to take measures to protect their own land and property from flooding. It is required by common law that any measures put in place on their property must not increase the flood risk to surrounding land and neighbouring property.

Private landowners also have responsibilities with regards to carrying out maintenance tasks for main rivers and ordinary watercourses which lie within their land, making them a 'riparian landowner'. They are responsible for ensuring that the watercourses are maintained by clearing any obstacles, maintaining the banks and bed of the watercourse, and maintaining any flood defences (in communication with the relevant RMA). This is to ensure that water flows without obstruction, pollution or diversion that may affect the rights of others. For works on main rivers, permission must be sought from the EA, please see more information here. For works on ordinary watercourses, permission must be sought from the LLFA.

Additional guidance for owning a watercourse and the responsibilities for managing the watercourse can be found here.

# 3 Local Flood Risk

## 3.1 Geography of Brent

Brent is located in north-west London, covering an area of approximately 4,310 hectares. It is bordered by the London Boroughs of Barnet, Camden, Westminster, Kensington and Chelsea, Hammersmith and Fulham, Ealing and Harrow. There are some areas of high ground within the borough, however also some lower lying river valleys surrounding the River Brent and the Wealdstone Brook. Brent is also an urbanised catchment (approximately 93% is urbanised) being located within London.

## 3.2 What are the different types of flood risk in Brent?

There are various types of flooding that can affect Brent, which are outlined below:

- ***Flooding from surface water***
- ***Flooding from main rivers***
- ***Flooding from ordinary watercourses***
- ***Flooding from groundwater***
- ***Flooding from sewers***
- ***Flooding from artificial sources***

Each type of flooding is summarised with a description of the risk, and its relevance to Brent. There can often be overlap between these different types of flooding, and the response to each type is dependent on the source. Maps depicting each type of flood risk can be viewed within the West London SFRA online mapping.

### 3.2.1 Flooding from surface water

Flooding from surface water occurs when rainfall hits the ground and is unable to drain into the existing drainage systems due to them being at capacity. This therefore causes water to flow over the ground (overland flows) and cause ponding. This is often exacerbated by the increasing coverage of impermeable surfaces in urban areas, combined with high intensity rainfall, which is becoming more frequent due to the impact of climate change. This is the most likely form of flooding that residents in Brent may experience.

### 3.2.2 Flooding from main rivers

Flooding from rivers occurs when the capacity of a river is exceeded, causing the river to overflow its banks due to the excess water. Brent has six main rivers within the borough, the River Brent (northeast to southwest), the Wealdstone Brook (through the London Borough of Harrow to the north of Brent, down to its confluence with the River Brent near the centre of the borough), the majority of the Mitchell Brook (southwest towards its confluence with the River Brent), the Wembley Brook (southeast towards its confluence with the River Brent), the Kenton Brook, and the Church Drive Drain. Designated main rivers are the responsibility of the EA, whereas ordinary watercourses (smaller watercourses) are the responsibility of the LLFA. The Brent Reservoir (Welsh Harp) also plays a role in regulating fluvial flows in the section of the River Brent which flows

through the borough. Therefore, a considerable amount of fluvial risk in the borough can be tied in with the reservoir.

The EA has created three flood zones for the purposes of development planning mapping, which are flood zones 1, 2, and 3. Flood zone 3 is further categorised into flood zones 3a and 3b by the Local Planning Authority (LPA) in discussion with the EA and LLFA. The criteria for each flood zone can be found in *Table 3.1*. A map with the flood zones can be found here.

**Table 3.1: Flood zone designation criteria**

| Flood Zone | Criteria |
|---|---|
| **1** | Land at less than 0.1% (1 in 1000 year) chance of flooding each year |
| **2** | Land with between 0.1% (1 in 1000 year) and 1% (1 in 100 year) chance of flooding each year |
| **3a** | Land with greater than 1% (1 in 100 year) chance of flooding each year |
| **3b** | Functional Floodplain.<br>Land where water must flow or be stored during a flood.<br>*The Planning Policy Guidance has been updated to state that it will normally comprise a greater than 3.3% (1 in 30 year) chance of flooding each year or is designed to flood. This layer was not available at the time of writing this report and therefore the layer currently incorporates the modelled fluvial and tidal flood risk extents predicted for up to and including the 5% (1 in 20 year) return period events. |

### 3.2.3 Flooding from ordinary watercourses

Ordinary watercourses include all rivers, streams, ditches, drains, cuts, dykes, sluices, sewers (other than public sewers) and passages that convey water, above ground or culverted, that are not designated as main rivers by the EA. Flooding of ordinary watercourses, similarly to fluvial flooding, occurs when the amount of water exceeds the capacity of the channel. These watercourses do however receive much of their flow from inside the urban area, so it is often considered that flooding from ordinary watercourses is a combination of fluvial, surface water and sewer flooding. Flooding from ordinary watercourses is the responsibility of the LLFA, however landowners also have responsibilities when an ordinary watercourse runs through their land. This includes reporting an incident, letting water flow naturally, preventing pollution, and protecting wildlife. Further advice on landowner responsibilities on ordinary watercourses can be sought from the LLFA.

Some of the ordinary watercourses in Brent include a small section of the Mitchell Brook and the Grand Union Canal.

### 3.2.4 Flooding from groundwater

Flooding from groundwater occurs when the water table rises causing groundwater to emerge at the surface. This can often take place following prolonged periods of heavy rainfall, whereby the ground becomes saturated. The likelihood and severity of groundwater can however depend on the underlying geology and topography, as it can also take more time for the groundwater table to

subside. Fluvial and surface water flooding may also be exacerbated as the infiltration capacity of the ground is reduced. Development also affects the natural flow patterns and pathways for groundwater.

### 3.2.5 Flooding from sewers

Sewer flooding occurs when the amount of rainfall exceeds the capacity of the sewer network. Sewer systems are designed to cope with a certain intensity of rainfall event, therefore, when a significant rainfall event occurs that exceeds its design capacity, sewer flooding could take place. Sewer flooding can also occur due to failures in the system such as blockages by debris or sediment build-up. The sewerage undertaker, TWUL in Brent, is responsible for all public surface water, foul, and combined sewers. Blockages of gullies or highway drains, however, can also occur and are the responsibility of Brent or TfL, dependent upon the location. The sewer flooding map produced for Brent shows the number of sewer flooding incidents per postcode area.

### 3.2.6 Flooding from artificial sources

Artificial flooding occurs when any artificial water bodies, typically including reservoirs and maintained lakes and canals, flood as a result of failure of the built infrastructure. There is one major reservoir which straddles the boundaries of Barnet and Brent, the Brent Reservoir (Welsh Harp), which is the responsibility of the Canal and River Trust. There are also reservoirs in Dollis Hill and Northwick Park, which are just outside the borough boundary. Further artificial sources include the Brent Feeder Canal (which historically took water from the Brent Reservoir to the Grand Union Canal), and the Grand Union Canal.

## 3.3 Historic flooding occurrences

Previous flooding events have been recorded in Brent on the following dates:

- 24th September 2019
- 12th and 25th July 2021
- 3rd November 2022

These events were triggered by a 20 to 30mm in 120-minute rainfall event on these dates at a variety of locations within the borough. These included areas in Brondesbury Park, Kilburn, Sudbury, Kingsbury, Kenton, and Wembley. Some locations in these areas required emergency support from Brent's response team to prevent threshold flooding. Flooding in the vicinity of the Wembley Brook that occurred over the past couple of years is currently being investigated by the LLFA. Additional flooding events are also likely to have occurred along with the above three recorded events.

Further investigation into these flooding events concluded that it is likely that average precipitation has increased since 1950, and at a faster rate since 1980. The number of heavy precipitation events has likely increased in more regions of the UK and London, and therefore longer rainfall events are expected in the borough within the next 20 years.

# 4 ADVICE FOR RESIDENTS

## 4.1 How to reduce flood risk

Given the nature of flooding, it is not possible to remove the risk entirely, however steps can be taken to reduce this risk. Whilst Brent is contributing towards reducing flood risk by looking into introducing more FASs, residents can also contribute towards reducing their own risk. Further links which provide information on how to find out about and reduce your flood risk can be found below:

- Find out about your long-term risk: Check the long-term flood risk for an area in England
- Sign up for free flood warnings: Sign up for flood warnings
- Manage your flood risk: Check your long-term flood risk
- Find information on flood insurance for your home or business: Accessing flood insurance - ABI
- Find out methods for protecting your property: Property Protection Advisor – National Flood Forum
- Find out about property flood resilience and resistance measures: Property Flood Resilience (PFR) booklet – The Flood Hub

Property flood resistance measures aim to prevent water entry or reduce the amount of floodwater that may enter a property. These entail home flood defence products which could be permanent or temporary, such as waterproof or water-resistant construction materials, flood barriers or flood doors and self-closing airbricks. Property flood resilience measures however aim to reduce the impact and damage that floodwater may have once it enters a property. These measures could include raising electrics and sockets, raising appliances and units on plinths, or having hard flooring with easily removable rugs.

## 4.2 What to do before, during and after a flood

Guidance is provided by the EA on what actions individuals should take before, during and after a flood. The full set of guidance can be found here, however a summary has been provided below in *Figure 4.1*. Further information on what to do before, during and after a flood can be found on Brent's website here.

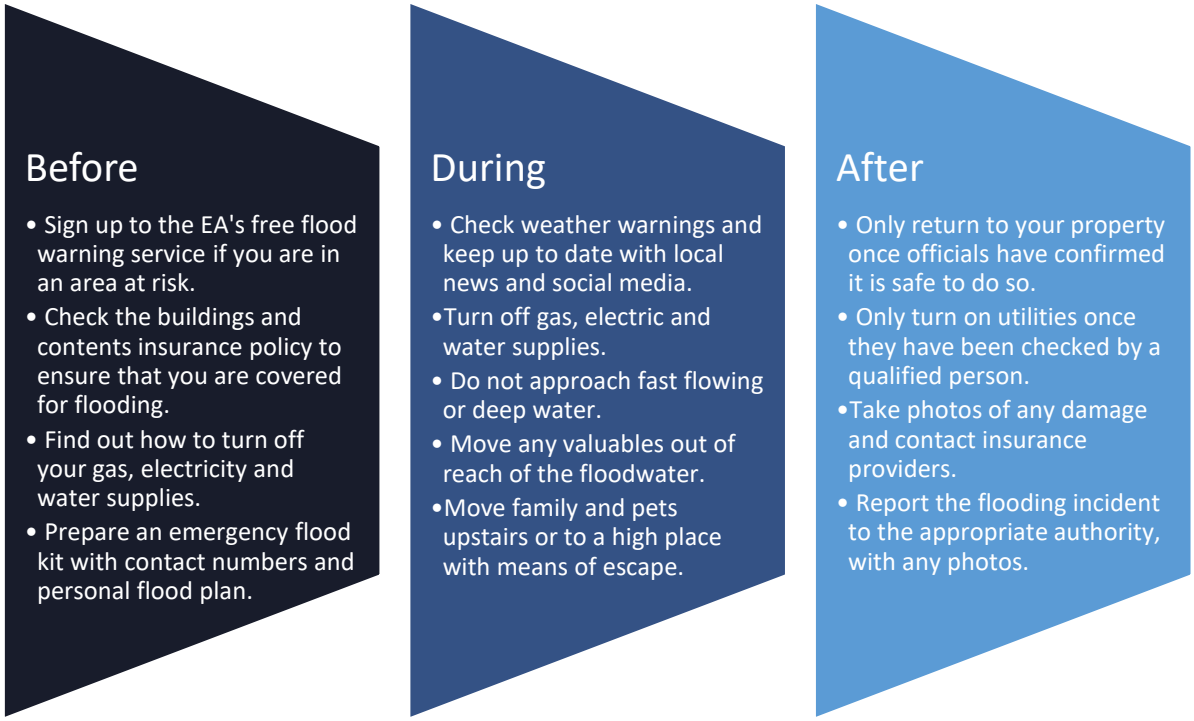


**Figure 4.1: Actions to take before, during and after a flood**

Floodline can be contacted to listen to flood warning information or to speak to an operator for general information and advice 24 hours a day: **0345 988 1188 (or Type Talk: 0345 602 6340)**.

## 4.3 How to report different types of flooding

As explained in *Section 3.2*, there are many different types of flooding in Brent. This means that who to report the flooding to is dependent on the type of flooding. *Table 2.1* highlights who is responsible for each type of flooding. *Table 4.1* provides the details for how to report a flood to the appropriate authorities.

**Table 4.1: How to report a flood to the appropriate authority**

| HOW TO REPORT A FLOOD | |
|---|---|
| For blocked public sewers and public sewer flooding | **Thames Water Utilities Limited**<br>0800 316 9800 (24-hour service)<br>Please report flooding via TWUL's two-step reporting process:<br>1. Please contact TWUL at the time of flooding via either here (this provides general information on how to contact TWUL) or here (this is a means to report and view current problems using a spatial map to ensure the correct location is captured; it provides a view of what has been reported in the area). |

| | |
|---|---|
| | 2. After the flooding has subsided, please complete TWUL's Sewer Flooding Questionnaire and include links to any photographs or videos.<br><br>This information is important to TWUL as it allows them to build a picture of the flooding experienced by their customers and to identify root causes of the issues based on your reports and their findings.<br><br>TWUL's preference is for residents to report any flooding directly to TWUL so that incidents can be investigated as quickly as possible.<br><br>These reports are also used by TWUL to build a picture of areas that require investment to improve the flooding based on the root cause of the issue. |
| For groundwater and surface water flooding and flooding from ordinary watercourses | **Brent Lead Local Flood Authority**<br><br>Monday to Friday from 9am to 5pm<br><br>highways.management@brent.gov.uk<br><br>During out of hours (Monday to Friday, 5pm to 9am and weekends), please call the main switchboard number – 020 8937 1234. |
| For flooding from main rivers | **Environment Agency**<br><br>0800 807 060 (24-hour service) |
| For blocked private drains and flooding caused by private drains | **Property/Landowner**<br><br>You are responsible for private sewers and drains within your property boundaries |
| For blocked drains and/or gullies on highways adopted by Brent | **Brent Highways**<br><br>Monday to Friday from 9am to 5pm<br><br>highways.management@brent.gov.uk |
| For blocked drains and/or gullies on highways managed by TfL | **Transport for London**<br><br>Street care reporting tool |

## 4.4 Adaptation and resilience to flooding

The NFCERMS is written by the EA and describes what needs to be done by all RMAs involved in flood and coastal erosion risk management, whilst encouraging collaboration so that flood risk can be effectively managed by all parties. It sets out how we need to increase our adaptability and resilience

to flood risk, to reduce the risk of being impacted by flooding. It outlines two main approaches to property-level protection:

**Adaptation** is defined as the ability to plan for changes so that we can better survive in the changing environment.

**Resilience** is defined as the ability to anticipate or cope with incidents, and to recover from them in a timely manner.

The actions of individuals play an important part in managing flood risk, particularly personal risk from flooding and at a local level. Some actions, such as paving over front gardens, can increase the risk of flooding by increasing surface water runoff. These developments may not require planning permission, as in most cases for dwelling houses this is permitted development, although flats and listed buildings do not have such permitted development rights. Individuals considering this action should therefore consider that they may increase their own risk and that of others by paving over their front gardens / previously permeable areas.

Other actions can be taken at a property level to reduce the risk of flooding, such as installing SuDS which could include permeable paving on driveways or water butts to reuse rainwater. The National Flood Forum has a Six Steps guide to looking into installing flood resilience measures in your property. Additionally, the Property Protection Advisor has been developed which provides a tool that outlines what options are available and provides an initial estimate of the cost of resistance measures for different types of properties.

**It should be noted that these are guidance documents only; it is advised to seek expert advice from an independent flood risk assessor before proceeding with any works.**

# 5 What the Council Have Done to Manage Flood Risk

## 5.1 Previous and current schemes

Brent has implemented Sustainable Drainage Systems (SuDS) within flood risk areas to help reduce the risk of flooding at these locations. Silver Jubilee Park is an area of local flooding and Brent constructed a swale in 2021 to manage runoff from the car park and contain this water during times of heavy rain. Further enhancements including interpretive signage were included in 2024. Additional works are planned for 2025 to improve the scheme's ability to hold water and for longer. Additionally, rain gardens and SuDS are being delivered in Kilburn and Kensal Corridor, for which the first phase of the scheme was completed in November 2022. The scheme includes improvements to Chamberlayne Road, Kilburn Lane, and Station Terrace. There are multiple objectives being delivered, which includes developing community greening schemes including greening to Station Terrace and a series of pocket gardens along the high street. It is planned to be fully constructed in 2026 / 2027.

As part of the Green and Healthy Streets Fund, delivered in partnership with TfL, Brent used this funding to plant new street trees, flowerbeds, and rain gardens in four school streets. These included the Crownhill School Street Scheme (John Keble CofE Primary, Maple Walk, and St Claudine's Catholic School for Girls), Our Lady of Grace Catholic Infants School (Dollis Hill Avenue), Leopold Primary (Hawkshead Road) and Oakington Manor Primary (Oakington Manor Drive). These projects are in areas of highest climate vulnerability, and one of the aims of the scheme was to make these areas more resilient to flooding, in addition to supporting biodiversity and improving the area. They are considered a successful blueprint for improving the public realm near these schools and encouraging greener travel. Further information on the scheme can be found here.

Further schemes are being developed, with information on these in *Section 7.2*. This includes the Woodcock Park project for which studies commenced at the start of 2025.

## 5.2 Strategic updates

### 5.2.1 Borough Plan 2023-27

The Borough Plan for Brent has been agreed for 2023-27 which sets out the main focuses of the council during this period. There are five strategic priorities:

- 1. Prosperity and Stability in Brent
- 2. A Cleaner, Greener Future
- 3. Thriving Communities
- 4. The Best Start in Life
- 5. A Healthier Brent

It was put together based on feedback from residents, and people who work, study or do business in Brent, and sets out how Brent will work with residents, partner organisations, and voluntary organisations, to best serve the people of Brent. There are set outcomes for each priority to work towards which builds on current achievements and sets new actions to focus on. The Brent Borough Plan for 2023-27 can be viewed here.

### 5.2.2 Strategic Flood Risk Assessment 2018-2020

A Strategic Flood Risk Assessment (SFRA) is undertaken to assess the current and future flood risk to an area from all sources. It is intended to provide evidence to then direct development away from the areas identified as having the highest risk. The West London Level 1 SFRA was published in 2018 and was carried out for the London Boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon, and Hounslow. It contains information about the relevant policies and flood risk in the boroughs, along with guidance for developers. Maps are included which demonstrate the risk of each type of flooding in the boroughs. The West London SFRA can be viewed here.

Following the Level 1 SFRA, Brent also commissioned a Level 2 SFRA in 2020 which looked at 28 site specific allocations for further assessment. It reviewed the relevant policies and provided information against each site identifying where the application of the Exception and Sequential Test was necessary and provided any recommendations to support any potential development opportunities for the sites. The Level 2 SFRA can be viewed here.

## 5.3 Technical updates

### 5.3.1 Drainage and Wastewater Management Plan (2023)

Drainage and Wastewater Management Plans (DWMPs) are required to be produced by water and sewerage companies and should last 25 years. They are plans which are set out to reduce future pressures on the wastewater service and should be sustainable and therefore consider current and future capacity, and risks to the network such as climate change and population growth. The DWMP sets about the actions which are required to meet these challenges, to plan for the future whilst also reducing flooding, pollution and storm overflows to protect and improve the water environment.

TWUL is the water and sewerage company for Brent, and they published their DWMP in May 2023. Their DWMP went through several stages including the strategic context, risk-based catchment screening, baseline-risk and vulnerability assessment, option development and appraisal, and programme appraisal. The public were consulted in June 2022 and the DWMP was amended in response to comments received. The final version of the DWMP can be found here. This DWMP will influence how water is managed in Brent in the future, which should be considered in any future flood risk management plans.

Brent LLFA also has access to TWUL's DWMP Capacity Assessment Framework Portal, which provides data on areas that are at high risk of sewer flooding and / or surcharging over specific time periods. Brent LLFA can use this information to prioritise investment by targeting areas that are in greatest need of FASs.

### 5.3.2 New National Modelling (2022-2023)

The EA undertook new national modelling between 2022 and 2023 to update their current hydrological models covering England. Local Authorities, including Brent, were consulted to help fill in any gaps and add any additional information to the models, such as Flood Alleviation Schemes (FASs). This ensures that the model is an accurate representation of flood risk in England, which can be used to contribute towards future flood risk management.

## 5.4 Partnership working

### 5.4.1 Brent Catchment Partnership

The Brent Catchment Partnership was set up in 2010 to 'promote awareness and understanding of the River Brent corridor to contribute to the social, environmental, and economic wellbeing of local people'. It is made up of multiple organisations and its aim is to improve the rivers, brooks, streams, lakes and canals within the River Brent catchment in North and West London. It delivers the objectives of the River Brent Catchment Action Plan, and identifies Nature Based Solutions and works towards the improved ecological health of these water bodies. Further information can be found here.

### 5.4.2 North West London Flood Partnership

The North West London Flood Risk Management Group (NWLFRMG) consists of stakeholders in the north-west London area, which includes the London Boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow. The group allows for increased partnership working with other stakeholders to work together in delivering the requirements as part of the FWMA (2010) and Flood Risk Regulations (2009) in the area. The group has also produced a joint SFRA (2018) as mentioned in *Section 5.2.2*.

### 5.4.3 Organisations and neighbouring boroughs

Brent works with other organisations to deliver effective flood risk management in Brent. Some of these include the EA, TWUL and Canal and River Trust. This may involve the collaboration on different projects and given the overlap between the responsibilities for flood risk in the borough it is important that Brent continues to work with these authorities to deliver flood risk management which benefits areas within the borough. Brent works together with Canal and River Trust, Barnet Council, Thames 21, London Wildlife Trust and Greater London Authority to deliver the Welsh Harp Management Plan which contains the necessary actions required to sustain the reservoir.

In addition to the NWLFRMG, Brent also works with its neighbouring boroughs on an individual basis where there is an opportunity to collaborate on projects to encourage a catchment-based approach to flooding.

### 5.4.4 London Drainage Engineers Group

The London Drainage Engineers Group (LoDEG) is an officer lead organisation, which includes 33 London Councils. It represents those with responsibilities for flood risk management and highway drainage within these areas. Meetings are held quarterly and attended by relevant organisations, including LLFAs, the EA, TWUL, TfL, Thames Flood Advisors (TFAs), the Greater London Authority, and others. During the meetings, RMAs can provide updates, and a series of external presentations are given. It is intended to promote partnership working across all RMAs and ensure best practice across the industry.

### 5.4.5 Friends of Woodcock Park

The Friends of Woodcock Park group is a local group in Brent that aims to improve and protect the facilities at Woodcock Park, which is an area that has previously experienced local flood risk and pollution. The group organises volunteer to get involved in activities and projects in the area, in addition to reporting any issues to Brent (or the relevant authority) when they arise. Brent will

continue to work with the group to find potential solutions to reduce the likelihood of future flooding using a catchment-based approach (see *Section 7.2.2*).

### 5.4.6 Other teams within Brent Council

Brent LLFA works with other internal teams within Brent Council to ensure that their policies are aligned and to collaborate on projects where feasible. Partnership working is undertaken between the Planning team and the Brent LLFA in reviewing planning applications with regards to their implications on surface water drainage. Brent LLFA is a statutory consultee for "major" planning applications, as per the Town and Country Planning Act (1990).

This ensures that Brent LLFA can provide technical comments to the Planning team where required and that these comments can be sent back to applicant to be reviewed.

# 6 SUSTAINABLE FLOOD RISK MANAGEMENT

## 6.1 Sustainable flood risk management

The changing climate, which brings about significant changes to weather patterns, including more intense rainfall and longer periods of drought, needs to be considered when planning for the future impacts this may have on flooding. To mitigate this risk, it is important to consider how Brent can work towards a more sustainable approach to flood management. This includes the implementation of SuDS and FASs.

Sustainable flood risk management in Brent should aim to:

- Utilise SuDS where possible which should have multiple benefits and reduce the pressures on the sewer systems.
- Ensure that informed investment decisions are made by directing investment towards the areas which have the highest risk.
- Provide knowledge to the public to enable them to protect themselves, property and businesses.
- Consider the future risk of climate change by making plans adaptable to the changes in climate.

It is important that everyone plays a role in sustainable flood risk management, from an individual property owner to the LLFA, to coordinate the response across the borough. A combined approach can have a greater effect in improving the flooding resilience in an area, whether it be de-paving a front garden or installing a FAS. Each action works towards achieving sustainable flood risk management, and effective communication and cooperation between those involved is crucial in working to reduce flood risk across the borough and promoting a sustainable approach towards this.

## 6.2 Sustainable Drainage Systems

SuDS are designed to manage runoff as close to the source as possible, thereby releasing the pressure on sewers. They slow runoff and provide areas of storage prior to the water infiltrating into the ground or entering the traditional sewer networks and watercourses. They therefore reduce surface water flooding, whilst also providing multiple other benefits such as enhancing amenity and improving water quality. Examples of SuDS can be found in *Figure 6.1.*






**Figure 6.1: Examples of different types of Sustainable Drainage Systems (source: SusDrain website)**

More information on different types of SuDS and their benefits can be found on the SusDrain website. Given the urbanised nature of Brent, it is important to promote the use of SuDS which manage rainwater as close to the source as possible and simulate nature which is environmentally beneficial. They can most commonly be implemented in new developments but can also be retrofitted to existing

developments. The SuDS Manual contains valuable information on SuDS with the latest technical advice and processes.

Promoting the use of SuDS will also contribute towards Brent's target to achieve carbon neutrality by 2030, as set out in Brent's Climate Emergency Strategy. This supports the government's plan for a net zero UK by 2050. By encouraging major developments to deliver green spaces and infrastructure this will enable buildings to better mitigate and adapt to climate change by managing flood risk and ensuring sustainable surface water drainage. The addition of green infrastructure, such as green roofs, will also support the improvement of biodiversity in Brent to promote and enhance green spaces and therefore contributing towards Brent's Green Infrastructure Vision for 2030. It is now mandatory for developers to achieve 10% Biodiversity Net Gain, unless the development is exempt. Brent will aim to contribute towards Biodiversity Net Gain through its future FASs to make sure that the schemes incorporate biodiverse habitats, which will ensure a more natural approach to flood risk management thereby reducing flooding whilst improving and enhancing natural habitats.

## 6.3 Natural flood management

Natural flood management (NFM) involves measures which reduce flooding but mimic the natural environment as closely as possible. It uses a softer approach to managing flooding such as creating storage ponds or restoring meanders in rivers, which is often more cost-effective than the hard engineering approach and has more benefits, including restoring habitats for wildlife. It is best implemented as a 'catchment-based approach' which means that the plan is developed to manage water over a whole catchment area. The EA has published an evidence directory on working with natural processes, comprising of reports which set out the research that has been done into NFM, with case studies on different NFM projects which have been delivered.

There are four key mechanisms which NFM utilises to improve flood risk:

- **Increasing flood storage:** creating areas such as storage ponds which provide more attenuation storage and then release the water slowly over time back into the system.
- **Increasing catchment and channel roughness:** increasing the roughness of the surface / channel such as planting hedgerows and restoring river meanders which slows the flow of water.
- **Increasing losses:** increasing the amount of water which can infiltrate or evaporate by using soil compaction or infiltration SuDS which enable soils and vegetation to take up more water.
- **De-synchronising peak flows from tributaries:** reducing the amount of water entering into main river bodies by slowing the flow from tributaries and reducing the downstream peak flows.

The use of NFM measures is more challenging in an urban context, however in Brent there are areas where smaller scale projects could be implemented in rivers and parks, in combination with SuDS techniques. These will be explored further where opportunities are identified, as an alternative to hard engineering techniques which are more invasive and have less environmental and ecological benefits.

## 6.4 Response to climate change

Climate change is becoming an increasing concern given the increased frequency of high intensity rainfall events and longer drought periods. Having more high intensity rainfall events, especially in quick succession, creates a higher risk of flooding as there is less time for water to infiltrate and often limited capacity of the current drainage systems to cope with the larger storm events. It is therefore

important that future designs and systems consider how the climate is changing, and how Brent can adapt to these changes.

Brent declared a climate and ecological emergency in 2019 and has set a target to strive for carbon neutrality by 2030. Brent's Climate and Ecological Emergency Strategy was written following extensive research and engagement with the local community and sets out the proposed priorities and pathway to carbon zero. The strategy highlights the risk of flooding, especially given that Brent is a highly populated urban borough and identifies the need for flood alleviation schemes in parks and on highways. This also aligns with Brent's Green Infrastructure Vision and Climate Resilience Plan. Flood risk is also being addressed through local policies, with requirements that applicants are expected to fulfil to ensure that their developments are integrating flood risk reduction measures and not increasing flood risk elsewhere. More information on planning policy can be found in *Section 6.5*.

## 6.5 Planning policy and planning applications

The LLFA has a statutory duty to review all major planning applications with regards to surface water drainage. Major developments are defined as those with 10 or more dwellings to be constructed, a site area equal to or greater than 0.5ha, or an internal area greater than 1,000m$^2$. Comments are provided by the LLFA based on the development proposals and whether they conform to national, regional, and local policies and guidance. These policies and guidance are outlined below:

- National Planning Policy Framework (Paragraphs 159-169)
- Flood Risk and Coastal Change Planning Practice Guidance
- London Plan Policies SI 12 and 13
- Non-Statutory Technical Standards for Sustainable Drainage Systems
- Brent's Local Plan Policies BSUI3 and BSUI4

The LLFA will review the following:

- The drainage hierarchy set out in the London Plan, to ensure that the applicant has prioritised green over grey infrastructure.
- The proposed runoff rates, making sure that they are equal to or less than greenfield runoff rates, or as close to reasonably practical with sufficient justification as to why greenfield rates cannot be achieved.
- The proposed attenuation volume, ensuring that this is equal to or greater than the required storage for the site.
- Supporting calculations, which support the greenfield, existing and proposed runoff rates for the 100% chance of occurrence each year (1 in 1 year), 3.3% change of occurrence each year (1 in 30 year), and 1% chance of occurrence each year (1 in 100 year) rainfall events, with an appropriate climate change allowance. The calculations should also demonstrate that there will be no flooding as a result of the 3.3% rainfall event, and no flooding of buildings as a result of events up to and including the 0.1% year rainfall event, in accordance with the Non-Statutory Technical Standards for Sustainable Drainage Systems (S7 to S9).
- The maintenance tasks and frequencies provided for each drainage feature, and that a maintenance owner has been stated.

As part of the West London SFRA, Brent has submission checklists for Flood Risk Assessments and Drainage Strategies which can be found here. This contains a full list on items to be submitted as part of a planning application. This should also include Brent's SuDS Proforma which is intended to accompany a drainage strategy. When submitting a planning application, all of this information must be provided where applicable, with reference to the relevant policies and how these have been met.

Brent has an additional policy BD3 for basement developments, outlined in the Local Plan, which requires basement proposals to meet the requirements outlined below. Supplementary guidance has also been produced by Brent with regards to basement development. As part of policy BD3, basement developments are required to:

- Demonstrate that sustainable design standards are integral to the proposal, including its construction and operation.
- In the case of habitable development only be ancillary accommodation to a dwelling above.
- Be no wider than the original building.
- Extend no further than the existing front elevation, 3 metres to the rear and 1 storey down (4 metres floor to ceiling height for a detached property or 3m in other cases).
- Ensure any rooflights are flush with the ground and close to the main building.
- Ensure any lightwells are modest in scale, preferably located to the rear and if located to the front are no more than whichever is the smaller of 800mm or half the length of the garden.
- Be protected from sewer flooding by a suitable pumped device.

In January 2023 the Government announced its intention to implement Schedule 3 of the FWMA during 2024 in England. Schedule 3 provides a framework for the approval and adoption of drainage systems, and the national standards on the design, construction, operation and maintenance of SuDS for the lifetime of the development. This involves the inclusion of a SuDS Approving Body (SAB) which will be responsible for approving new developments. There is potential that the LLFA would be acting as the SAB, as recommended by the Government Review Paper published in January 2023. Brent will therefore need to ensure that the requirements of Schedule 3 once implemented are incorporated within new developments. At the time of writing (October 2024), progress on this remains on hold following the July 2024 General Election.

# 7 How the Council is Planning to Manage Flood Risk for 2024 - 2030

## 7.1 New Action Plan

Alongside producing the strategic objectives as part of the LFRMS, a new and updated Action Plan has been developed (*Appendix A1* – Action Plan). The Action Plan sets out a set of specific actions which are linked to each strategic objective, which will aim to be met during the next six years.

The Action Plan contains the following information:

- The details of each action
- The lead RMA and any partnering RMAs
- The timescale for each action
- The current status of each action
- Links to relevant legislation and policy

The Action Plan was created as an initial draft before it was sent to internal and external stakeholders for their feedback. The internal stakeholders included members of Brent Council departments, and external stakeholders included the EA, TWUL, neighbouring borough LLFAs, statutory consultees of the SEA and HRA (Heritage England and Natural England), and TFAs.

The Action Plan associated with the London Surface Water Strategy, which is due to be published later in 2025, will take account of the Brent-specific actions in this Brent LFRMS Action Plan.

## 7.2 Flood Alleviation Schemes

Brent is currently working on, and will work on, furthering FASs in order to reduce the risk of flooding in Brent. Current and future FASs are outlined below.

### 7.2.1 Kilburn Feasibility Study

Brent is planning to commence a feasibility study in 2024 in the Kilburn and Kensal Rise area for flood alleviation opportunities within this area. The aim is to reduce the number of properties at risk of flooding which are identified to be at risk in the study area on the EA's RoFSW mapping. It is also aimed to provide wider benefits to any preferred option which will help to reduce flood risk.

### 7.2.2 Woodcock Park Feasibility Study

Brent is in the process of commencing a feasibility study for Woodcock Park, which is an area identified by the EA where the properties downstream are at high and medium risk of fluvial flooding. The feasibility study aims to identify possible flood alleviation measures in Woodcock Park and therefore define a shortlist of preferred options to take forward for further investigation and testing. This could then lead to detailed analysis including option modelling, flood alleviation and wider benefits if one or more schemes are eligible for Grant in Aid (GiA) funding. It is planned to collaborate with neighbouring boroughs to move towards a catchment-based approach.

Once these two projects have moved towards the construction phase, Brent will aim to carry out a further review as to which areas or catchments within the borough would benefit from a FAS between

2027 and 2030. Once these areas have been identified, Brent will look towards commencing feasibility studies with the aim of progressing an additional scheme in an at-risk area.

## 7.3 Key stakeholders

Both internal and external stakeholders have been consulted throughout the development of the LFRMS and Action Plan. They were able to provide their comments on the documents and provide suggestions for potential amendments. Following the consultation and workshops their comments were incorporated into the LFRMS and Action Plan where these agreed with the LLFA.

### 7.3.1 Internal stakeholders

The internal stakeholders for the LFRMS include Brent Council's departments, who were invited to consult on the LFRMS during the consultation process. These included: Climate and Emergency, Ecology, Emergency Planning, Environmental Enforcement, Healthy Streets & Parking, Highways, Housing, and the Local Planning Authority.

### 7.3.2 External stakeholders

The external stakeholders for the LFRMS include those not within a department at Brent Council, but those still involved in the delivery of flood risk management in Brent. These include: the EA, TWUL, TfL, and the Thames Regional Flood and Coastal Committee (TRFCC). It is important to engage with these partners, and any other interested parties to ensure ongoing cooperation with regards to managing future flood risk in Brent. This is also key to obtaining information with regards to current and future work.

## 7.4 How will these actions be funded?

Brent LLFA will use a variety of funding sources in order to fund the delivery of the LFRMS actions and associated FASs. One of the main sources of funding comes from the Department for Environment, Food and Rural Affairs, which is their **Flood and Coastal Erosion Risk Management Grant in Aid (GiA) fund** (delivered through the EA). This funding can be used to finance some or all stages of a FAS, such as the preparatory feasibility studies and design and construction phases. The project should contribute to reducing the probability of flood or coastal erosion, avoiding a significant increase in flood or coastal erosion risk, creating environmental improvements, and/or mitigating statutory, legal or contractual obligations.

In addition to GiA funding, the LLFA can also apply for **Local Levy funding** which can fund all different types of flood management projects. The TRFCC manage this funding stream, supported by the EA.

**Section 106** of the Town and Country Planning Act 1990 allows the local authority to receive financial contributions from developers towards the cost of providing services and infrastructure such as highways and recreational facilities. It is available for capital projects and must only be spent where the new development has contributed to the need for the facilities. The **Community Infrastructure Levy (CIL)** is used by local authorities whereby they can set a charge on new development to help them deliver the infrastructure needed to support development in their area (i.e. schools and transport improvements). CIL is used to fund some of the items which come under Brent's programme for capital expenditure. Brent is also a collecting authority for the Mayor of London's CIL known as 'Mayoral CIL 1' and 'Mayoral CIL 2'.

The Department for Levelling Up, Housing and Communities allocates the **LLFA revenue budget**, however it is not ringfenced solely for LLFA use and therefore a business case would usually be

required to be submitted to obtain this funding. It is however used to fund the LLFA's flood risk management duties and can fund FASs and smaller scale SuDS schemes.

TWUL additionally have some sources of funding where projects can demonstrate reduced pressure on TWUL-owned sewer networks. This has for example previously included the Surface Water Management Programme fund.

Although the above areas may be explored initially in obtaining funding for a project, it is important to note that third party funding (also termed **Partnership Funding**) can be an important avenue of support, especially given that funding can be a significant barrier to the development of FASs. This third-party funding could come from charity organisations, community groups, or from land or property owners involved in a scheme. Brent will continue to investigate avenues of third-party funding when they become available to support the continuation of flood risk management projects which will benefit the wider community.

# 8 CONCLUSION

## 8.1 Summary of LFRMS

Under the FWMA (2010), the LLFA must develop, maintain, apply and monitor a strategy for local flood risk management in its area. This LFRMS has been developed to set out how Brent LLFA will manage flood risk in the borough over the next six years (2024 – 2030). Its purpose is to ensure that there is an improved understanding of flood risk in the borough, whilst outlining the actions that will be taken over the next six years to continue the progress Brent LLFA has made towards reducing flood risk. As part of the LFRMS, six new strategic objectives have been proposed, which are outlined below:

A. Improve our knowledge and understanding of the different flood risks in Brent.

B. Improve clarity on the roles and responsibilities surrounding flooding.

C. Reduce the risk of flooding to the community in Brent by delivering targeted Flood Alleviation Schemes (FASs) and encouraging the use of Sustainable Drainage Systems (SuDS).

D. Improve community awareness of flood risk and support successful communication to develop resilience to flooding in Brent.

E. Maximise sustainability benefits to take a holistic approach to flood management, taking into account the impact of climate change.

F. Identify funding and resources available to encourage future development within flood risk management in Brent.

The strategic objectives are supplemented by an Action Plan (*Appendix A1* – Action Plan), which sets out the actions that will be taken to achieve each strategic objective. It is important that the LFRMS is kept up to date and is relevant to the current climate, to ensure that Brent is made more flood resilient, whilst supporting a sustainable future.

## 8.2 Next steps

Following publication of the strategy, Brent LLFA will begin to work towards completing the actions identified in the Action Plan and therefore work towards the proposed strategic objectives. Progress will also be made towards identifying future funding sources to be able to deliver further flood risk management works.

## 8.3 Monitoring and reviewing

LFRMSs are required to be reviewed and updated every six years, or sooner if any major changes have taken place which impact upon flood risk management, including:

- Significant changes to legislation or government guidance.
- Updated knowledge relating to the LLFA's understanding of flood risk or flood monitoring practices.

This LFRMS will therefore be updated again in 2030 or earlier if required.

The LLFA will track the progress made on the Action Plan internally. There is a monitoring plan as part of the Action Plan which will enable Brent LLFA to track each action against the timescales set, to make

sure that they are progressing as planned to meet the strategic objectives. The Action Plan itself will be reviewed every two years, including updating the status of each action.

# APPENDIX A1 – ACTION PLAN

# APPENDIX A2 - SEA

# APPENDIX A3 - HRA

# APPENDIX B1 - LEGISLATION

| | |
|---|---|
| **International** | |
| EU Water Framework Directive (2000) | The EU Water Framework Directive (WFD), published in 2000, makes it a requirement for Member States of the EU to improve and maintain the state of all waters, including surface waters and groundwater. All waters are to achieve a "good" ecological status by 2015 or, at the latest, by 2027. The WFD request that water management plans are developed using a river basin approach. The WFD was adopted into UK law in 2003 and will become part of new UK law following the UK's departure from the European Union. |
| EU Floods Directive (2007) | The EU Floods Directive dictates how Member States should approach the flood risk management of all types of floods. A three-stage process was to be followed. For the initial cycle, by 2011 Member States had to produce Preliminary Flood Risk Assessments (PFRAs) to identify areas where water courses and coastlines are potentially at risk of flooding. By 2015, mapping of flood risk areas showing the extent, assets and number or inhabitants at risk were created. By 2015, Flood Risk Management Plans (FRMPs) for areas at high risk of flooding were produced, including measures to reduce flood risk. The EU Flood Directive was implemented in UK law through the Flood Risk Regulations (FRR) (2009) and will be a continuing law following the UK's departure from the EU. The cycle restarted in 2016 and Barnet's LLFA have been involved in updates since. |
| IPCC Climate Change Report (2021) | The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report aims to assess the physical science basis of climate change. The headlines from the 2021 report include predictions of +1.5$^{O}$C temperature change in the next two decades and that climate change is presently affecting every populated region of the globe. |
| **National** | |
| Civil Contingencies Act (2004) | The Civil Contingencies Act is a legislative framework for civil protection in the UK that establishes the roles and responsibilities on organisations that play a role in preparing for and responding to emergencies. Under the Act, Local Authorities and the EA are Category 1 responders. Some of the Local Authority's duties include putting in place emergency plans, sharing and co-operating with other local responders to enhance efficiency. |

| | |
|---|---|
| The Pitt Review (2007) | Following the extreme flooding that took place in the summer of 2007 a comprehensive review led by Sir Michael Pitt, known as the Pitt Review, was commissioned by the UK Government. The Pitt Review provided 92 recommendations to improve flood risk management in England, notably that County Councils, large metropolitan boroughs, and Unitary Authorities should take the lead on the management of flood risk. The Pitt Review recommendations were accepted by the Government and initiated the creation of the FWMA. |
| Flood Risk Regulations (2009) | The FRR implements the EU Floods Directive in England. Flood risk management, as set out by the framework, requires the production of PFRAs, the identification of flood risk areas, mapping of such areas and FRMPs. |
| Flood and Water Management Act (2010) | The FWMA aims to provide better, more sustainable management of flood risk and coastal erosion along with improving the sustainability of water resources. The FWMA defines structures and responsibilities for managing flood risk, notably with the introduction of LLFAs which impart the role of managing local flood risk to County Councils, large metropolitan boroughs, and Unitary Authorities. The EA is appointed to hold the strategic overview role of all sources of flooding, in addition to managing the flood risk from main rivers and the sea. The FWMA also places a statutory duty on the EA to develop a NFCERMS for England, which all LFRMSs must align with. |
| UK 25 Year Environment Plan (2023) | The UK's 25 Year Environment Plan sets out the Government's plan to improve the environment within a generation. Key focuses of the plan include: (1) clean air, (2) clean and plentiful water, (3) thriving plants and wildlife, (4) reducing the risks of harm from environmental hazards, (5) using resources from nature more sustainably and efficiently, (6) enhancing beauty, heritage and engagement with the natural environment, (7) mitigating and adapting to climate change, (8) minimising waste, (9) managing exposure to chemicals and (10) enhancing biosecurity. |
| Flood and Coastal Erosion Risk Management Policy (2020) | The FCERM Policy Statement reflects the government's long-term ambition to increase the resilience to flood and coastal erosion risk nationwide. |
| National Flood and Coastal Erosion Risk Management Strategy (2020)<br><br>NFCERMS Roadmap to 2026 | The NFCERMS sets out a framework for RMAs involved in managing flood risk in order to increase the nation's flood resilience. The publication of the NFCERMS was followed by an Action Plan aligned with the long-term objectives of the NFCERMS. |

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| National Planning Policy Framework (2023, revised) | The National Planning Policy Framework (NPPF) sets out the planning policies to provide sustainable development and is published by the Ministry of Housing, Communities and Local Government (MHCLG). The NPPF provides guidance on developing Local Plans in line with national planning policies. These policies include avoiding and managing risks from flooding, in line with the role of LPAs to prepare local plans and to decide on planning application permissions. The NPPF is supported by Planning Practice Guidance (PPG), including the Flood Risk and Coastal Change PPG, which is revised as necessary. |
| Environment Act (2021) | The Environment Act is the UK's new framework of environmental protection since departing from the EU. It is intended to provide legal regulations on nature protection, water quality, clean air and other environmental protections. The Environment Act provides the Government with powers to set new binding targets, including for air quality, water, biodiversity, and waste reduction, and also establishes a new environmental watchdog – the Office for Environmental Protection. |
| **Regional** | |
| Thames Catchment Flood Management Plan (2009) | The Thames Catchment Flood Management Plan (CFMP) is a plan which helps RMAs such as the EA to plan and agree the most effective ways to manage flood risk in the future. A CFMP considers all types of inland flooding from rivers, groundwater, surface water and tidal flooding but not directly from the sea (coastal flooding) which is instead covered by Shoreline Management Plans. CFMPs also consider likely effects of climate change, land use change / management and the need for future development. |
| Mayor of London's Climate Change Adaptation Strategy (2011) | This Mayor of London's Climate Change Adaption Strategy sets out the framework for improving the quality of life in London and for protecting the natural environment. It provides an action plan for making London more sustainable by using three 'pillars': retrofitting London, greening London and cleaner air for London. The strategy presents the understanding of main climate change effects on London as well as analysing the effects on cross-sector issues including health, economy, and infrastructure. The strategy also provides a 'roadmap to resilience' outlining actions, with lead and partner organisations. Since then, the Greater London Authority (GLA) have also produced a London Environment Strategy (2018). |
| Thames Estuary 2100 Flood Risk Management Plan (2023) | The Thames Estuary 2100 (TE2100) Plan was developed by the EA and provides strategic direction for managing flood risk in the Thames Estuary to the end of the century. The TE2100 plan is an adaptive strategy and is reviewed on an interim basis every five |

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| | years and on a full basis every ten years. The plan considers different long-term options for managing tidal flood risk depending on changes in factors which determine the level of flood risk, including sea level rise. |
| London Regional Flood Risk Appraisal (2018) | The London Regional Flood Risk Appraisal (RFRA) provides an overview of all sources of flooding in London and addresses both its probability and consequences. The evidence of the London RFRA subsequently informs the London Plan and should inform local-level flood risk assessments and local plans. |
| London Sustainable Drainage Action Plan (2021) | The London Sustainable Drainage Action Plan addresses a specific need to promote the awareness, and the retrofitting, of Sustainable Drainage Systems right across London. It contains a series of actions to make London's drainage system work in a more natural way with the main focus on the retrofitting of sustainable drainage to existing buildings, land and infrastructure. Sector-specific sustainable drainage (SuDS) guidance has been developed as part of the London Sustainable Drainage Action Plan. |
| The London Plan (2021) | The London Plan is a general Strategic Development Strategy for London. Producing a Strategic Development Strategy is a requirement of the London Mayor established under GLA legislation. The London Plan establishes an integrated economic, environmental, transport and social framework for the development of London for the next 20-25 years. |
| London Surface Water Strategy | Following severe flooding in July 2021, the London Surface Water Strategic Group was set up to drive forward the creation of the Capital's first Surface Water Strategy. The full Strategy is due to be published later in 2025; an Interim Report has been published. |
| **Local** | |
| Surface Water Management Plan (SWMP, 2011) | A SWMP is a non-statutory plan produced by LLFAs that presents the surface water flood risk for an area and forms a strategy on how to manage this with local partners. It considers flooding from different sources, including sewers, drains, groundwater, and surface runoff from land, small watercourses and ditches that occur as a result of heavy and / or prolonged rainfall. A long-term action plan is also included to manage surface water flood risk which will influence land-use planning, emergency planning and future developments. SWMPs also aim to identify SuDS opportunities to manage surface water flood risk which contributes towards the WFD requirements. |
| Strategic Flood Risk Assessment Level 1 (SFRA, 2018) | A SFRA is required by the NPPF and provides a strategic overview of all forms of flood risk within a designated area. A SFRA assesses the risk from all sources of flooding and provides the evidence base for |

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| | ensuring development is steered away from areas identified as most at risk of flooding. A SFRA should also identify opportunities to reduce the causes and effects of flooding, including potential areas of land for flood risk management infrastructure. The West London Boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon, and Hounslow commissioned the production of a joint Level 1 SFRA in 2018. |
| Strategic Flood Risk Assessment Level 2 (2020) | A Level 2 SFRA follows a Level 1 SFRA and is conducted in accordance with the NPPF and PPG. It looks at specific sites for development and provides the information necessary to support the application of the Exception Test where appropriate. Brent published a Level 2 SFRA in 2020 which looked at 28 'site specific allocations' for further assessment. Spatial planning and site-specific recommendations were also provided to support prospective developers. |
| Brent Borough Plan (2023-2027) | The Brent Borough Plan sets out what the council will focus on over the next four years. This is informed by residents' priorities to set out what Brent wants to achieve to best serve the people in Brent. The plan sets out five priority areas which include: prosperity and stability in Brent, a cleaner, greener future, thriving communities, the best start in life, and a healthier Brent. |
| Local Plan (2019-2041) | The Local Plan is developed by the LPA and sets out a vision and framework for the future development of the area. Brent Council's Local Plan sets out policies surrounding housing, town centres, open space, employment, community facilities, the built and natural environment and transport. The plan is made up of the combination of strategic policies, addressing important priorities for the Brent borough, and non-strategic policies. The aim is for the policies to contribute towards making Brent a vibrant place to live and work, to improve living standards, make Brent safer, cleaner and greener, to support residents to be healthier and happier, and to provide more opportunities to learn and work in the borough. |
| Climate and Ecological Emergency Strategy (2021-2030) | Brent's Climate and Ecological Emergency Strategy sets out Brent's proposed priorities and pathway to carbon zero. It came about since Brent Council declared a climate and ecological emergency in July 2019 and committed to achieve carbon neutrality by 2030. A focus for climate action has been provided through five key themes including: consumption, resources and waste, transport, supporting communities, nature and green space, and homes, buildings and the built environment. |