

# STRATEGIC FLOOD RISK ASSESSMENT

## LEVEL 2



London Borough  
of Hounslow

# PREPARED FOR LONDON BOROUGH OF HOUNSLOW

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## EXECUTIVE SUMMARY

The West London Level 1 Strategic Flood Risk Assessment (SFRA) was first published online in April 2018, and, although a live website, has most recently been updated in 2024 to reflect Flood Risk and Coastal Change Planning Practice Guidance (PPG) changes. The assessment was carried out for the West London Boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow. The overarching aim of the document was to assess flood risk from all sources and provide the evidence base to steer development away from areas identified most at risk. As part of the assessment, 'Capacity Sites' were evaluated as part of a Level 2 screening exercise to determine if a more detailed analysis of flood risk was required. Six of the 'Capacity Sites' were put forward for further assessment and further analysis was conducted on each of these sites.

This Level 2 SFRA was commissioned by the London Borough of Hounslow in preparation for their updated Local Plan which led to updated site allocations and an update to their Flood Zones 3a and 3b following the latest updates to the PPG. It looks at 96 site allocations, which were put forward for further assessment. 18 site allocations were identified following a Level 2 screening exercise which was undertaken on these sites. This assessment was conducted in accordance with the National Planning Policy Framework and the accompanying PPG.

The primary purpose of this Level 2 SFRA is to provide the information necessary for application of the Exception Test where appropriate. Level 2 assessments also provide spatial planning and site-specific recommendations to support any potential development opportunities for prospective developers.

This assessment provides seven maps for each of the 18 site allocations. These are produced as part of the Site Assessments conducted for each of these sites. This was based on an updated methodology for conducting the flood risk assessment on these sites, to ensure that the most up to date information was used to assess these sites and that these were displayed in a visual way.

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# ACRONYMS AND ABBREVIATIONS

Abbreviation	Definition
FRA	Flood Risk Assessment
GIS	Graphical Information System
HR	Hazard Rating
LPA	Local Planning Authority
NPPF	National Planning Policy Framework
PPG	Planning Practice Guidance
RoFSW	Risk of Flooding from Surface Water
SFRA	Strategic Flood Risk Assessment

# 1 INTRODUCTION

## **What is a Level 2 SFRA?**

A Level 2 Strategic Flood Risk Assessment (SFRA) is a detailed assessment of all sources of flood risk for specified sites requiring targeted assessment. These sites may have been designated by the Local Planning Authority (LPA) or identified following the Level 1 SFRA if the site is in a flood risk area.

The Level 2 assessment should provide the information necessary for application of the Exception Test where appropriate. The site-specific assessment builds on the strategic flood risk information presented in the Level 1 SFRA and considers the detailed nature of the site's flood characteristics.

## **Who should use it?**

As the LPA, this document should be used by the London Borough of Hounslow (Hounslow). It also provides site-specific guidance for developers and planners to ensure that planning permission requirements are met.

### **1.1 Background**

The West London Boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow carried out a [Level 1 Strategic Flood Risk Assessment](#) to assess the risk of flooding from all sources in the region, now and in the future. The SFRA was conducted in line with the [National Planning Policy Framework](#) (NPPF) and the accompanying [Flood Risk and Coastal Change Planning Practice Guidance](#) (PPG) and provides evidence to guide planned development and proposed land use changes away from the areas most at risk of flooding. It is used by boroughs for strategic planning and enables developers to have a better understanding of flood risk and the planning permission requirements for the area.

The Level 1 SFRA was designed to enable further site-specific assessments where required. It included a [Level 2 Screening Assessment](#) which was completed in 2019 to evaluate the Local Planning Authority's 'Capacity Sites'. The screening assessment was carried out by conducting an analysis of potential flood risk impacts for all 'Capacity Sites'. These have now been superseded by the new site allocations put forward in 2024 as part of Hounslow's new Local Plan.

The PPG recommends that a Level 2 SFRA is carried out when the "*Level 1 Assessment shows that land outside flood risk areas cannot appropriately accommodate all the necessary development*". Following the screening assessment conducted to assess the sites put forward as part of Hounslow's new Local Plan, 18 sites within Hounslow were recommended for further analysis as part of a Level 2 SFRA. This Level 2 SFRA has been developed to assess the 18 site allocations proposed by Hounslow.

## 1.2 Policy

This Level 2 SFRA has been produced in line with national, regional and local policy. The primary purpose of these policies is to ensure that development does not increase the risk flooding, and to ensure that development is steered away from high flood risk areas to help alleviate flood risk and keep people safe from flooding. Although policy referenced as part of the Level 1 SFRA is relevant to the Level 2 SFRA, there are several policy documents that provide specific guidance and requirements that relate to Level 2 assessments, and some policy updates which have taken place since the publication of the Level 1 SFRA. These are referenced in *Section 1.2.1*.

### 1.2.1 National Policy

The [NPPF](#) and the accompanying [PPG](#) provide national policy that guides the requirements of SFRAs. They introduce the purpose and requirements of the Sequential and Exception Tests, tests designed to direct developments to areas that possess the lowest flood risk.

The Sequential Test is designed to steer development proposals to areas with the lowest flood risk. The Level 1 West London SFRA provides the basis for the application of this test. The Exception Test is designed to follow the Sequential Test where necessary. It should be applied if it has been determined that a development cannot be located in an area with a lower risk of flooding. This is required for developments which are: Highly Vulnerable and in Flood Zone 2, Essential Infrastructure in Flood Zone 3a or 3b, or More Vulnerable in Flood Zone 3a. The Exception Test needs to demonstrate that the proposed flood risk management measures will be satisfactorily applied to ensure both people and the property will be safe for the lifetime of the development. This Level 2 SFRA is structured to provide the basis for the application of this test. The Level 1 SFRA provides further [guidance](#) on the application of these tests.

Both the NPPF and PPG have undergone revisions since the publication of the Level 1 SFRA. The NPPF was most recently revised in September 2023, and key changes were made in the 2021 revision which are relevant to this updated Level 2 SFRA. This includes:

- Ensuring that plans consider all sources of flood risk.
- Incorporating appropriate flood resistant and resilient measures within developments to ensure they can quickly return to use after flood events without the need for significant refurbishment.
- Inclusion of the Flood Risk Vulnerability Classification within [Annex 3](#).

The PPG was most recently updated in August 2022, which brought it in line with the latest updates in the 2021 NPPF revision. The key updates to the 2022 PPG include:

- The explicit inclusion of a climate change allowance within ‘design flood’ and the consideration of surface water flood risk.
- The Functional Floodplain starting point is now the 3.3% annual exceedance probability (AEP) event (previously 5% AEP).
- The non-residential development lifetime starting point is set at 75 years.

The 2022 PPG also provided updated information on Sequential Testing, clarifying:

- When Sequential Tests should be applied, and when it is appropriate to move on to the Exception Test.
- Definitions of key terms such as ‘reasonably available’.
- Roles and responsibilities, including an emphasis on LPAs to select an area of search and consider if the Sequential Test is passed.
- Approaches to improve efficiency and certainty.

Updated information on the Exception Test is also provided within the 2022 PPG, including:

- Definitions of relevant key terms (such as ‘wider sustainability benefits to the community’).
- A new section on how developments can demonstrate an overall reduction in flood risk.
- Demonstration of Flood Zone incompatibility, rather than showing whether ‘development is appropriate’.

### 1.2.2 Regional Policy

[The London Plan](#) (2021) sets out an integrated economic, environmental, transport and social framework for the development of London. Policy SI 12 of the London Plan states that Local Authorities should use their SFRA to identify areas where particular and cumulative flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. These actions must be informed by the [Thames River Basin District Flood Risk Management Plan](#).

### 1.2.3 Local Policy

Policy EQ3 of Hounslow’s draft [Local Plan](#) (Volume 1) highlights that developers must “*Prepare flood risk assessments, consistent with the requirements of the Environment Agency and the Strategic Flood Risk Assessment*”. Some updates to Policy EQ3 were made in the updated draft Local Plan document which included taking all sources of flood risk into account and an emphasis on incorporating green infrastructure as a part of development proposals. An output of the Level 2 SFRA is tailored Flood Risk Assessment (FRA) preparation advice for each assessed site. This output assists developers in ensuring that an appropriate FRA is produced as part of the development proposal.

The Level 1 West London 1 SFRA provides a section on [Planning and Policy Framework](#). This section provides an informative breakdown of the national, regional, sub-regional and local policy that LPAs, planners and developers should follow as part of the development proposal process.

#### 1.2.4 Flood Zones

The Environment Agency (EA) have defined Flood Zones to show the probability of fluvial and / or tidal flooding. The Flood Zones provide indicative flood risk information and are used as part of the planning process as a tool in the Sequential and Exception Tests. The fluvial / tidal Flood Zones are defined within the PPG 'Flood Risk and Coastal Change ([Table 1](#))'. As recommended in the Level 1 SFRA, Hounslow have also defined an additional Flood Zone 3a to account for predicted surface water flood risks across the borough. 'Flood Zone 3a' has therefore been split into 'fluvial' and 'surface water' subsets, where the surface water flood risk uses the extents predicted for up to and including the 1% AEP (Annual Exceedance Probability) return period events. It should be noted that a site may be in both the fluvial and surface water extents of Flood Zone 3a – in such cases the policy requirements should work in tandem with equal importance. All Flood Zones included in this assessment are defined in *Table 3.1*.

#### 1.2.5 Vulnerability Classifications

The flood risk vulnerability classification that is required for the Sequential Test is outlined in [Annex 3 of the NPPF](#). It is summarised in *Table 1.1*.

**Table 1.1.** Flood risk vulnerability classifications (as outlined in Annex 3 of the NPPF)

<b>Essential Infrastructure</b>
<ul style="list-style-type: none"> <li>• Essential transport infrastructure which has to cross the area at risk.</li> <li>• Essential utility infrastructure which has to be located in a flood risk area for operational reasons e.g., infrastructure for electricity supply (including generation, storage and distribution systems).</li> <li>• Wind turbines / solar farms.</li> </ul>
<b>Highly Vulnerable</b>
<ul style="list-style-type: none"> <li>• Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding.</li> <li>• Emergency dispersal points.</li> <li>• Basement dwellings.</li> <li>• Caravans, mobile homes and park homes intended for permanent residential use.</li> <li>• Installations requiring hazardous substances consent.</li> </ul>
<b>More Vulnerable</b>
<ul style="list-style-type: none"> <li>• Hospitals.</li> <li>• Residential institutions such as care homes, children’s homes, social services homes, prisons and hostels.</li> <li>• Buildings used for dwelling houses, student residence, drinking establishments, nightclubs and hotels.</li> <li>• Non-residential uses for health services, nurseries and educational establishments.</li> <li>• Landfill and sites used for waste management facilities for hazardous waste.</li> <li>• Holiday or short-let caravans and camping sites (subject to a specific warning/evacuation plan).</li> </ul>
<b>Less Vulnerable</b>
<ul style="list-style-type: none"> <li>• Police, ambulance and fire stations which are not required to be operational during flooding.</li> <li>• Buildings used for shops; financial, professional, and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the More Vulnerable class; and assembly and leisure.</li> <li>• Land and buildings used for agriculture and forestry.</li> <li>• Waste treatment (except landfill and hazardous waste facilities).</li> <li>• Minerals working and processing (except for sand and gravel working).</li> <li>• Water treatment works which do not need to remain operational during times of flood.</li> <li>• Sewage treatment works (with adequate pollution control measures to manage sewage during flooding).</li> <li>• Car parks.</li> </ul>
<b>Water Compatible</b>
<ul style="list-style-type: none"> <li>• Flood control infrastructure.</li> <li>• Water transmission infrastructure and pumping stations.</li> <li>• Sewage transmission infrastructure and pumping stations.</li> <li>• Sand and gravel working.</li> <li>• Docks, marinas and wharves.</li> <li>• Navigation facilities.</li> <li>• Ministry of Defence installations.</li> <li>• Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.</li> <li>• Water-based recreation (excluding sleeping accommodation).</li> <li>• Lifeguard and coastguard stations.</li> <li>• Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.</li> <li>• Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.</li> </ul>

### 1.2.6 Flood Risk Vulnerability and Flood Zone Compatibility

The PPG Flood risk vulnerability and Flood Zone ‘incompatibility’ table provides guidance on the types of development that may be considered as suitable within each Flood Zone. It sets out some circumstances where the Exception Test will need to be applied following the Sequential Test. This is shown in *Table 1.2*.

**Table 1.2.** Flood risk vulnerability and Flood Zone ‘incompatibility’

Flood Zone	Flood Risk Vulnerability Classification				
	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test Required	✓	✓	✓
Zone 3a	Exception Test Required †	X	Exception Test Required	✓	✓
Zone 3b	Exception Test Required *	X	X	X	✓*

Key	
✓	Development is appropriate
X	Development should not be permitted
†	In Flood Zone 3a Essential Infrastructure should be designed and constructed to remain operation and safe in times of flood.
*	In Flood Zone 3b Essential Infrastructure that has passed the Exception Test, and Water-compatible uses, should be designed and constructed to: <ul style="list-style-type: none"> <li>• Remain operational and safe for users in time of flood.</li> <li>• Result in no net loss of floodplain storage.</li> <li>• Not impede water flows and not increase flood risk elsewhere.</li> </ul>

## 2 SITE ASSESSMENT

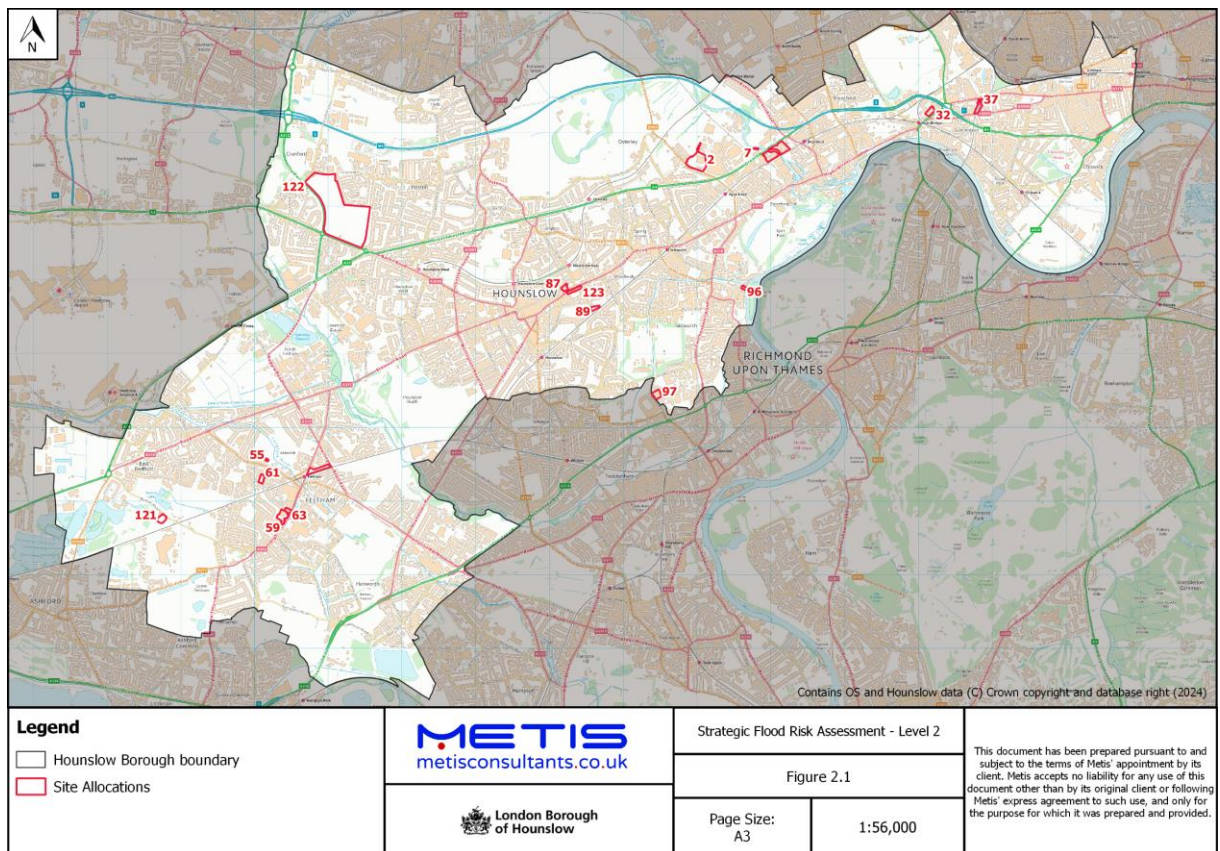
### 2.1 Site assessment purpose

The primary purpose of the site assessments is to provide the information necessary for the application of the Exception Test. The assessments also provide recommendations and considerations for LPAs and prospective developers to be used in conjunction with the guidance provided in [Section 4](#) of the Level 1 SFRA. Seven maps are produced as an output as part of the site assessments for each of the 18 site allocations which demonstrates the level of flood risk at the site for each flooding source assessed. For further information on the Level 2 SFRA methodology, refer to *Section 3* of this document.

### 2.2 Sites assessed

18 site allocations were assessed as part of this Level 2 SFRA. Information on these sites are presented in *Figure 2.1* and *Table 2.1* below.

**Figure 2.1.** Borough map showing the location of the 18 sites targeted within the Level 2 SFRA



**Table 2.1.** List of the 18 site allocations targeted within the Level 2 SFRA

Borough ID	Site Name	Proposed Use	Area (ha)
2	Tesco Osterley	Residential and Retail	4.6
7	Profile West Brentford Park	Residential and Industrial	0.6
16	Brentside Park	Residential, Retail and Business	1.8
17	Great West Plaza	Residential, Retail and Business	2.1
32	Brentford Fountains Leisure Centre	Residential, Retail and Assembly / Leisure	0.9
37	Gunnersbury Station Car Park	Residential, Retail, Business and Assembly / Leisure	1.1
51	Network House Feltham	Residential	1.5
55	Scout Hut Bedfont Lane	Residential and Health / Community	0.12
59	Tesco Feltham	Residential and Retail	1.7
61	Council Depot, Ashmead Road	Residential	0.7
63	80-86 High Street Feltham	Residential and Retail	0.4
87	Euro House, Hounslow	Residential and Retail	0.2
89	Land at James Street	Residential	0.5
96	Europa House	Residential and Business	0.3
97	30 Rugby Road	Residential and Industrial	1
121	Land South of Bedfont Road	Showpeople Plots	0.8
122	Rectory Farm	Minerals extraction and restored parkland	42.69
123	1-83 High Street	Residential and Retail	0.77

## 3 METHODOLOGY

### 3.1 Site Selection

Sites were selected from a total of 96 sites proposed for development in Hounslow's draft Local Plan. A high-level screening assessment was undertaken on these sites to determine whether a Site Assessment was required (*Appendices A*). The criteria used to determine whether a Site Assessment was required is as follows:

"A Site Assessment is recommended where the Sequential Test is required and the extent of Flood Zone 3a (fluvial), Flood Zone 3b (fluvial) and / or Flood Zone 3a (surface water) extent exceeds 5% of the site, or where the extent of Flood Zone 3a (fluvial), and Flood Zone 3b (fluvial) is below 5% but the Main River 1% AEP +35% climate change scenario extent exceeds 5%."

5% has been chosen as a reasonable minimum percentage to assess the sites that are at risk of fluvial or surface water flooding. This was deemed to represent both a precautionary and proportionate threshold, and whilst each site needs to be considered individually and on its own merits, employing a threshold as low as 5% should mean that there is sufficient space within the site to design the layout to avoid the need to locate the most vulnerable aspects of the development within the Flood Zone extents.

Based on this assessment criteria, 18 sites were identified to require a Site Assessment. Three sites were triggered by fluvial and surface water flood risk, and 15 sites were triggered only by surface water flood risk.

### 3.2 Analysis

The Site Assessments were carried out using datasets provided by the EA, Thames Water Utilities Limited (TWUL) and Hounslow. Data was also obtained from the [Level 1 SFRA](#). Predicted flooding from surface water, sewer, fluvial, groundwater and artificial sources was analysed using the predicted proportion of each flood risk type within each site. The assessments for fluvial and surface water flood risk are based on the Flood Zones defined in the updated 2024 Level 1 SFRA. These are the outlines of the predicted flood extents in both defended and undefended scenarios. The Flood Zones definitions are outlined in *Table 3.1*. The flood hazard ratings used in the Site Assessments can be interpreted as shown in *Table 3.2*.

**Table 3.1.** Level 1 SFRA (2024) Flood Zone definitions

Term	Definition
Flood Zone 2	<ul style="list-style-type: none"> <li>Land within EA modelled fluvial flood risk extents predicted for 1 in 100 to 1 in 1,000 year return period events (<b>fluvial</b>).</li> <li>Land within EA modelled tidal flood risk extents predicted for 1 in 200 to 1 in 1,000 year return period events (<b>tidal</b>).</li> </ul>
Flood Zone 3a (fluvial)	<ul style="list-style-type: none"> <li>Land within EA modelled fluvial flood risk extents predicted for up to and including 1 in 100 year return period events (<b>fluvial</b>).</li> </ul>
Flood Zone 3a (surface water)	<ul style="list-style-type: none"> <li>Land within EA modelled surface water flood risk extents predicted for up to and including 1 in 100 year return period events (<b>surface water</b>).</li> </ul>
Flood Zone 3b (fluvial)	<ul style="list-style-type: none"> <li>Land within EA modelled fluvial flood risk extents predicted for up to and including 1 in 30-year return period events (the 1 in 50-year event should be used where the 1 in 30-year event is not available) allowing for the impact of flood defences (<b>fluvial</b>). Any areas that are already developed (i.e. built footprint) which act as a physical barrier to flood water in these events, should be counted as Flood Zone 3a (<b>fluvial</b>). However, all other land within these events should be defined as Flood Zone 3b (<b>fluvial</b>).</li> <li>Land which is included within the EA's Flood Storage Areas dataset (<b>fluvial</b>).</li> </ul>

**Table 3.2.** Surface water flood risk hazard rating (HR) categories

Flood Hazard	Definition
Low	$0.5 \geq HR < 0.75$ Caution – Flood zone with shallow flowing water or deep standing water
Moderate	$0.75 \geq HR \leq 1.25$ Dangerous for some (i.e. children) – Danger: flood zone with deep or fast flowing water
Significant	$1.25 > HR \leq 2.0$ Dangerous for most people – Danger: flood zone with deep fast flowing water
Extreme	$HR > 2.0$ Dangerous for all – Extreme danger: flood zone with deep fast flowing water

### 3.3 Assessment template

Site Assessments were conducted on a specifically designed proforma, which was updated from the 2019 version. The sections included are summarised in *Table 3.3*.

**Table 3.3.** Site Assessment proforma details

Section	Contents
Current and proposed use	Development use of each site assessed
Current and proposed vulnerability classification	Identified the site's vulnerability classification as outlined in <i>Section 1.2.5</i> . For sites which may support a variety of different uses, the vulnerability classification is identified based on the most vulnerable use.
Current Risk Summary	Percentage of the site area under each risk level for different types of flooding
Flood defences	Identifies if the site is benefitting from any fluvial flood defences
Flood Warning Areas	Identifies if the EA flood warning service is available at the site
Risk assessment	Data on risk from each flooding source, including flood depth, velocity, hazard, duration, etc.
Flood mechanisms	For each flood source, how flood water behaves within the site
Site access / egress routes	Where flood-safe entry and exit routes should be located

Mitigation requirements	For each flood source, a list of mitigation measures to alleviate the flood risk for potential developments at the site. To be used in conjunction with the guidance provided in Tables 4.1, 4.2, 4.3, and 4.4 of the <a href="#">Level 1 SFRA</a> .
Planning Considerations - Safety of development	Analysis of how secure the development is against future flooding, including climate change considerations. This section also identifies if the site can be developed based on Exception Test criteria.

Seven site-specific maps are appended to each Site Assessment proforma (*Appendices B*). These are summarised in *Table 3.4*.

**Table 3.4.** Summary of maps

Number	Figure	Description
1	Fluvial Flood Depth (1% AEP + 35% Climate Change Allowance Event)	Provides the maximum flood depth or the fluvial defended 1% AEP + 35% climate change flood event. Data was extracted from EA models for River Brent, River Crane and River Thames. The 35% climate change event was chosen to review the maximum fluvial flood depth at the sites as it is closest to the 'higher' allowance <a href="#">peak river flow allowance</a> for the London Management Catchment.
2	Fluvial Flood Hazard (1% AEP + 35% Climate Change Allowance Event)	Provides the maximum flood hazard for the fluvial defended 1% AEP + 35% climate change flood event. Data was extracted from EA models for River Brent, River Crane and River Thames. The 35% climate change allowance was used.
3	Surface Water Flood Depth (1% AEP Rainfall Event)	Provides the predicted surface water flood depth across a site using EA RoFSW data for a 1% AEP event. This is a detailed representation of the Flood Zone 3a (Surface Water) extent as defined in the Level 1 SFRA and <i>Table 3.1</i> .
4	Surface Water Flood Hazard (1% AEP Rainfall Event)	Provides information on the predicted hazard of surface water flooding, based on EA RoFSW mapping for a 1% AEP event. Details about how hazard can be interpreted are shown in <i>Table 3.2</i> .
5	Thames Water Utilities Limited (TWUL) Sewer Flooding Records	Provides the sewer flood incidences recorded by TWUL at four-digit postcode resolution. This includes records from when incidents were first captured in the database up until 23/04/2024, when it was received from TWUL.
6	Areas Susceptible to Groundwater Flooding	Provides the strategic scale map of groundwater flood areas on a 1km grid.
7	Reservoir Flood Risk - Wet day	Provides the individual flood extents for all large, raised reservoirs in the event that they were to fail and release the water held on a "wet day" when local rivers had already overflowed their banks.

### 3.4 Data Sources

A number of different datasets were used in this assessment, a description of these datasets, their purpose and their sources are outlined in *Table 3.5*.

**Table 3.5.** Datasets used in the Site Assessments

Category	File name	Description	Data source	Purpose
Base map	Basemap	Polygons of streets, buildings, and other features in the area	Ordnance Survey (OS) Master Map	Map creation
	Hounslow borough boundary	Polygon demarcating the borough boundary	West London SFRA 2018	Defining study area; geographical boundary for other data needed
	Statutory Main River Map	Line files showing the watercourses in the borough	EA Web Map Service (WMS)	Determining locations of watercourses
	Site Allocations May 2024	Polygons giving outlines of 96 proposed development sites in the borough	Hounslow 2024	Conducting screening and site level assessments
Digital Terrain Model	LiDAR	Raster containing ground elevation data	EA 2024	Determining low elevation areas susceptible to surface water flooding
Flood defences	Spatial_Flood_Defences (without standardised attributes)	Lines showing EA flood defences which have a standard of protection equal to or better than 1% AEP for rivers and 0.5% AEP from the sea. (Some additional defences are also shown).	EA WMS	Analysing how flood defences affect current and future fluvial flooding
	Spatial_Flood_Defences (incl. standardised attributes)	Lines showing all flood defences currently owned, managed or inspected by the EA	EA WMS	
	Reduction_In_Risk_Of_Flooding_From_Rivers_And_Sea	Polygons showing the areas that have reduced flood risk from rivers and sea due to the presence of flood defences	EA WMS	
Flood Warning Areas	Flood_Warning_Areas	Polygon showing the areas where the EA Warning Service is available	EA WMS	Determining if site users can sign up to the EA flood warning service
Groundwater	Areas_Susceptible_to_Groundwater_Flood	Provides strategic scale map of areas susceptible to groundwater flooding on a 1km grid	EA 2024	Analysing current groundwater flood risk
Flood Map for Planning	Flood_Zone_2	Polygons showing land with annual probability of river flooding between 1% and 0.1%	EA 2024	Prioritising sites for assessment
	Flood_Zone_3	Polygons showing land having a 1% or greater annual probability of river flooding	EA 2024	
	Flood_Zone_3b	Polygons showing land within EA modelled fluvial flood risk extents predicted for up to and including the 3.3% AEP	Level 1 SFRA	

		extents (NB: the 2% AEP extent is used where the 3.3% AEP was not available for the River Brent and River Crane models), and land included within the EA's Flood Storage Areas dataset		
Risk of Flooding from Surface Water (RoFSW)	RoFSW_1inXX_Extent	Polygons showing flood extent, depth, and hazard values for rainfall scenarios with a 3.33% AEP, 1% AEP and 0.1% AEP chance of occurring in any given year. Hazard calculated from flood depth and velocity.	EA 2024	Prioritising sites for assessment; Analysing current and future surface water flood risk; Creating surface water flood risk mitigation plan
	RoFSW_1inXX_Depth			
	RoFSW_1inXX_Hazard			
Sewer flooding	EIR-24-25-035 redacted	Database of historic sewer flooding incidents by four-digit postcode	TWUL 2024	Sewer flood risk assessment
Risk of Flooding from Reservoirs	Reservoir_Flood_Extents_Wet_Day	Database showing the individual flood extents for all large raised reservoirs in the event that they were to fail and release the water held on a 'wet day' when local rivers had already overflowed their banks.	EA 2024	Reservoir flood risk assessment
River model data	River Brent	Data from EA-generated model of River Brent, River Crane and River Thames	EA 2014	Fluvial flood risk assessment (current and future); Determining climate Change allowance extents; Creating fluvial flood risk mitigation plan; Applying Exception Test
	River Crane		EA 2008	
	River Thames		EA 2023	

## 4 GENERAL REQUIREMENTS

Table 4.1 outlines the general mitigation requirements that all of the sites within this Level 2 SFRA must follow. They have been referenced in the individual Site Assessments (*Appendices B*) to make it clear where they are appropriate to be applied to the site. Further information on the mitigation requirements can be found in Tables 4.1, 4.2, 4.3, and 4.4 of the [Level 1 SFRA](#). These set out the requirements for major developments, minor developments, change of use (including changes to prior approval developments), and individual sites (from other flood risk sources).

A climate change allowance of 35% has been used to set out the recommendations. This allowance is used for master planning purposes only. Developers submitting planning applications should refer to the [Flood risk assessments \(FRAs\): climate change allowances](#) guidance. The fluvial Flood Zones in the borough can be viewed in the Level 1 SFRA [Webmap](#).

**Table 4.1.** General mitigation requirements for the site allocations

No.	Mitigation Requirement	Applicable Area	
		Fluvial	Surface Water
4.1	There should be no net loss of floodplain storage within new developments. Only Essential Infrastructure (subject to the Exception Test) and Water Compatible infrastructure are permitted.	Flood Zone 3b and Flood Zone 3a	Flood Zone 3a (1% AEP event)
4.2	Flood resistance measures should be considered where predicted flood depths are less than 0.3m. Flood resilience measures should be considered where predicted flood depths are greater than 0.6m. Predicted flood depths between 0.3m and 0.6m should be analysed on a case-by-case basis to determine if resistance measures are sufficient. Design plans should show floor levels (relative to Ordnance Datum) and predicted flood depths.	All	
4.3	Flood storage compensation needs to be provided if permissible development decreases the volume of a fluvial floodplain or surface water flood area. The compensatory storage provided must equal or exceed the storage lost to ensure there will be no net loss of flood storage. Where developments are proposed and within Flood Zone 3a (surface water), floodplain compensation must account for predicted flood depths for the 3.3% AEP and 1% AEP RoFSW mapping or depths predicted by site-specific modelling.	Flood Zone 3b and Flood Zone 3a	Flood Zone 3a (1% AEP event)
4.4	Flood Warning and Emergency Plans need to feature measures to manage flood risk before, during, and after a flood, reducing the potential human impact of any flood	All	

	event and making developments as resilient to flooding as possible. Key considerations can be found in the PPG. <i>*Not required for minor and change of use developments where it can be demonstrated that neither a site-specific FRA, drainage strategy, or the second requirement of the Exception Test is necessary.</i>		
4.5	Residual risk should be mitigated through flood resilient / resistant designs and emergency planning to make sure the proper measures are in place to offer protection.	Entire area at risk	
4.6	Development sites within 8m of a non-tidal main river, flood defence structure or culvert may require a Flood Risk Activity Permit.	8m buffer area around non-tidal main rivers	
4.7	Development sites within specified distances of ordinary watercourses may require an approved ordinary watercourse consent.	5m buffer area around ordinary watercourses	
4.8	All basement rooms must have internal access and egress to a higher floor above the design flood level which can be utilised as part of emergency evacuation procedures.	Flood Zone 3a, Flood Zone 2	Flood Zone 3a (1% AEP event)
4.9	As part of any assessment for basement dwellings, evidence needs to be submitted to confirm the local water table level.	Flood Zone 3a, Flood Zone 2, Flood Zone 1	Flood Zone 3a (1% AEP event)

# APPENDICES

## Appendix A – Screening Assessment

## Appendix B – Site Assessments

- 2 – Tesco Osterley
- 7 – Profile West Brentford Car Park
- 16 – Brentside Park
- 17 – Great West Plaza
- 32 – Brentford Fountains Leisure Centre
- 37 – Gunnersbury Station Car Park
- 51 – Network House Feltham
- 55 – Scout Hut Bedfont Lane
- 59 – Tesco Feltham
- 61 – Council Depot, Ashmead Road
- 63 – 80-86 High Street Feltham
- 87 – Euro House, Hounslow
- 89 – Land at James Street
- 96 – Europa House
- 97 – 30 Rugby Road
- 121 – Land South of Bedfont Road
- 122 – Rectory Farm
- 123 – 1-83 High Street