Strategic Flood Risk Assessment – Level 2

Prepared for the London Borough of Brent

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EXECUTIVE SUMMARY

The West London Level 1 Strategic Food Risk Assessment (SFRA) was published online in April 2018. 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, sites were evaluated as part of a Level 2 screening exercise to determine if a more detailed analysis of flood risk was required.

This Level 2 SFRA was commissioned by the London Borough of Brent and looks at 28 'site specific allocations' for further assessment. This assessment was conducted in accordance with the National Planning Policy Framework and the accompanying Planning Practice Guidance (PPG). To meet the need for the emerging London Plan small sites housing targets, several 'intensification corridors' were identified as priority locations for development, rather than as specific allocations. These sites offer the opportunity to be treated as a single site but are more likely to be delivered in an incremental manner.

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.

CONTENTS

FIGURES AND TABLES

ACRONYMS AND ABBREVIATIONS

Abbreviation	Definition
FRA	Flood Risk Assessment
GIS	Graphical Information System
HR	Hazard Rating
NPPF	National Planning Policy Framework
PPG	Planning Practice Guidance
RoFSW	Risk of Flooding from Surface Water
ASTGWF	Areas Susceptible to Groundwater Flooding
IPEG	Increased Potential for Elevated Groundwater
SFRA	Strategic Flood Risk Assessment

1 INTRODUCTION

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 as 'site specific allocations' by the Local Planning Authority 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. As the Local Planning Authority, this document should be used by the London Borough of Brent. It also provides site specific guidance for developers and planners to ensure that planning policy 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). The documents provide 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 requirements for the area.

The Level 1 SFRA was designed to enable further site-specific assessments where required. It includes a Level 2 Screening Assessment which was completed to evaluate the Local Planning Authority's 'potential site allocations'. The sites considered for 'potential site allocations' were assessed against a site assessment matrix in the Integrated Impact Assessment to consider their suitability for development. The Level 2 SFRA Recommendations section of the SFRA provides the criteria and assumptions used for conducting the high level screening of the 'potential site allocations'. 91 'potential site allocations' within the London Borough of Brent were screened in which 28 sites were selected for the Level 2 SFRA. The Level 2 SFRA focused on sites located more than 20% in the fluvial or pluvial Flood Zone 3 (hence regarded as a significant constraint on development) or sites currently less than 20% in FZ3, but more than 20% under the selected climate change scenario.

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*". The London Borough of Brent have identified 19 sites which require assessment due to fluvial flood risk. There are a further nine sites which have triggered an assessment due to the significance of surface water flood risk.

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 of flooding, and to ensure that property development is steered away from high flood risk areas to 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.

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 possesses the lowest flood risk.

The Sequential Test is designed to steer development proposals to the lowest flood risk probability areas. 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 in an area with a lower risk of flooding. 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.

Policy 5.12 of the London Plan (2016) highlights that Local Authorities should utilise SFRAs to identify areas with flood risk issues, and develop actions and policies to reduce these risks. The outputs of the Level 2 SFRA include detailed assessments for each flood source, planning considerations, potential mitigation measures for each assessed site. These outputs enable developers to produce appropriate flood risk mitigation actions for each assessed site.

Policy DMP1 of the Draft Brent Local Plan highlights that, subject to other policies within the development plan, development will be acceptable provided it is "not unacceptably increasing, and where possible reducing, exposure to flood risk". The level of risk from each source of flooding has been analysed within the Level 2 SFRA. The planning considerations will account for possibly reducing flood risk on site and to the wider area.

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.

1.3 Report Structure

This Level 2 SFRA has been produced to assess risk from all sources to 28 sites in detail. To meet the objectives of the assessment, this document has been structured as follows:

- **Section 1 (Introduction)** defines the Level 2 SFRA and outlines who the document is primarily for. This section provides the background of this Level 2 assessment and highlights key and influential policy.
- **Section 2 (Site Assessment)** provides an overview of the site assessments conducted. This section lists the 28 sites assessed.
- **Section 3 (Methodology)** provides details on the methodology used to complete each site assessment. Each section on the site-assessment template is covered, alongside assessment data sources and the developable areas.

- **Appendices** contains data source information and full details for each individual site assessment conducted as part of the Level 2 SFRA.

2 SITE ASSESSMENT

2.1 Purpose

The 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 Local Planning Authorities and prospective developers to be used in conjunction with the guidance provided in Section 4 of the Level 1 SFRA. For further information on the Level 2 SFRA methodology, refer to *Section 3* of the document.

2.2 Locations Assessed

28 sites were assessed as part of this Level 2 SFRA. Information on these sites are presented in Figure 2.1 and Table 2.1

Figure 2.1. Borough map showing the location of the 28 sites targeted within the Level 2 SFRA

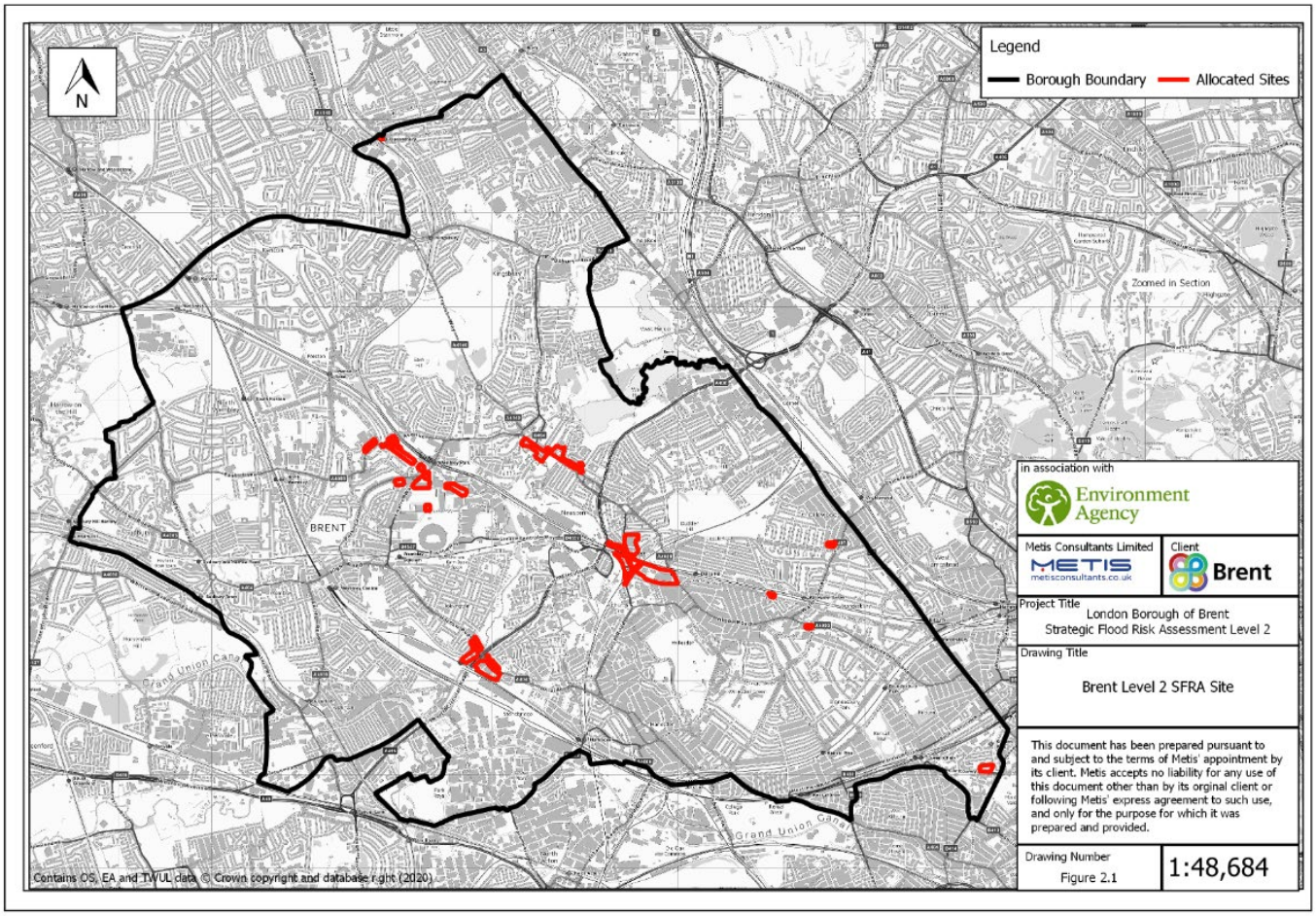

Table 2.2. Site specific allocations targeted within the Level 2 SFRA

Site ID	Site Name	Proposed Use	Area (ha)
01	Stadium Retail Park and Fountain Studios	Residential and commercial	1.68
02	Brook Avenue	Residential	1.90
03	Watkin Road	Residential and industrial	1.41
04	College of North West London Wembley	Mixed-use	0.37
05	Coombe Road	Industrial, commercial, and residential	1.35
06	Argenta House & Wembley Point	Residential and employment	1.22
07	Bridge Park and Unisys Building	Leisure centre, office and residential	2.72
08	Blackbird Court, Blackbird Hill Intensification Corridor	Residential and commercial	0.15
09	494-504 Neasden Lane Intensification Corridor	Residential and commercial	0.09
10	460-492 Neasden Lane Intensification Corridor	Residential and commercial	0.43
11	Talbot Court to English Martyrs RC Church,	Residential and commercial	2.15
12	2-4 North Circular Road, 2-32 Brentfield and 1-3a Sunny Crescent	Residential	0.12
13	2-44a Harrow Road	Residential and commercial	0.36
14	Sylvia Court Harrow Road	Residential	0.30
15	Pargraves Court, 70 Brook Avenue	Residential	0.23
16	Century House and Taverners Court, Forty Avenue	Residential	0.39
17	1-10 Richmond Court and 80b Forty Avenue	Residential	0.25
18	1 Forty Close and Meeting Room Forty Avenue	Residential and community space	0.08
19	53-63 Forty Avenue, Perrin Grange, the City Learning Centre, and Brook House and 58-64 Forty Avenue	Residential and education	0.74
20	Neasden Stations Growth Area	Residential, industrial, transport infrastructure, social infrastructure	11.79
21	Turpin's Yard	Residential and industrial	0.38
22	Site NW04 Wembley Masterplan	Commercial and residential	0.35
23	84-98 Wembley Park Drive	Residential	0.53
24	Queensbury Underground Station Car Park	Residential and car parking	0.20
25	438-444 Neasden Lane and Pit House	Residential	0.46
26	Hereford House & Exeter Court	Residential	0.90
27	Springhill House, Willesden Lane Site	Residential	0.25
28	Park Avenue Garage Site	Residential	0.23

3 METHODOLOGY

3.1 Assessment Template

This section covers the detailed assessments conducted for each site. Datasets utilised to produce the West London SFRA Web Maps were used to carry out the analysis (see *Section 3.2* for more details). Flooding from surface water, sewer, fluvial / tidal, groundwater and artificial sources was analysed, identifying the predicted proportion of each flood risk type within each site. The assessments for fluvial, tidal, and surface water flood risk are based on the Flood Zones defined in the Level 1 SFRA (see *Table 3.2*).

To assess each site, a wide-ranging detailed risk assessment was conducted. A site assessment pro forma was prepared covering the following areas. Details of each section are covered below:

- Current / proposed use
- Flood Mechanisms
- Risk Assessment
- Current Risk Summary
- Site access / egress
- Mitigation Requirements
- Exception test
- Planning considerations

Current/proposed use
This section details the current land use and the proposed land use for the sites.

Flood Mechanisms
This section details the flood mechanisms of the Main Rivers / ordinary watercourses / overland flow paths which lie within the vicinity of the sites. This information will supplement the fluvial and surface water section of the risk assessment.

Risk Assessment
The assessment analysed the impact of flood defences, potential flood depth, potential flood velocity, potential flood hazards, speed of inundation, duration of flood event, climate change and geology. The outputs for the flood risk assessment section provides seven maps, each providing different flood risk information across each site. The fluvial and surface water related maps also provide the location of Main Rivers and ordinary watercourses in relation to the assessed site. Defence breach scenarios of key flood defence data was unavailable for the fluvial risk assessment therefore the undefended scenario flood was also analysed to provide a conservative approach. The figures are summarised in Table 3.1

Table 3.1. Summary of Figures

Figure	Description
1 in 100yr70CC Maximum Flood Depth Map	Provides the maximum flood depth for the fluvial defended 1 in 100-year + 70% climate change flood event. The maximum flood depth map was extracted from the 'River Brent (2017)' and 'Argenta House - Former Unisy Building (2018)' model results. The 70% climate change event was chosen to review the maximum fluvial flood depth at the sites as it represents the 'worst case' upper end peak river flow allowance for the Thames River Basin District.
1 in 100yr70CC Maximum Flood Hazard Map	Provides the maximum flood hazard for the fluvial defended 1 in 100-year + 70% climate change flood event. The maximum flood hazard map was extracted from the 'River Brent (2017)' and 'Argenta House - Former Unisy Building (2018)' model results. The 70% climate change event was chosen to review the maximum fluvial flood hazard at the sites as it represents the 'worst case' upper end peak river flow allowance for the Thames River Basin District.
1 in 100yr RoFSW Maximum Flood Depth Map	Provides the predicted surface water flood depth across a site for a 1 in 100-year event. This is a more detailed representation of the Flood Zone 3a (Surface Water) extent as defined in the Level 1 SFRA and *Table 3.2*.
1 in 100yr RoFSW Maximum Flood Hazard Map	Provides information on the predicted hazard of surface water flooding. The map categorises the danger based on predicted hazard for a 1 in 100-year event. This is a more detailed representation of the Flood Zone 3a (Surface Water) extent as defined in the Level 1 SFRA and Table 3.2. Table 3.3 provides further information on the hazard mapping categories.
Thames Water Sewer Record Map	Provides the sewer flood incidences recorded by Thames Water at four-digit postcode resolution. The figure will be used to access sewer flooding for the sites.
Areas Susceptible to Groundwater Flooding	Provides the strategic scale map of groundwater flood areas on a 1km grid (ASTGF) and the increased potential for elevated groundwater (IPEG) to rise sufficiently to interact with or be within 2m of the ground surface. The figure will be used to access groundwater flooding for the sites.
Risk of Flooding from Reservoirs Maximum Flood Depth Map	Provides maximum depth of the area that might be flooded if a reservoir were to fail and release the water it holds.

Figure	Description
	The figure will be used to access reservoir flooding for the sites.

Table 3.2. Level 1 SFRA Flood Zones

Figure	Definition
Flood Zone 2	• Land within EA modelled fluvial flood risk extents predicted for 1 in 100 to 1 in 1,000 year return period events **(fluvial)**. • Land within EA modelled tidal flood risk extents predicted for 1 in 200 to 1 in 1,000 year return period events **(tidal)**.
Flood Zone 3a (fluvial and tidal)	• Land within EA modelled fluvial flood risk extents predicted for up to and including 1 in 100 year return period events **(fluvial)**. • Land within EA modelled tidal flood risk extents predicted for up to and including 1 in 200 year return period events **(tidal)**.
Flood Zone 3a (surface water)	• Land within EA modelled surface water flood risk extents predicted for up to and including 1 in 100 year return period events **(surface water)**.
Flood Zone 3b (fluvial and tidal)	• Land within EA modelled fluvial and tidal flood risk extents predicted for up to and including 1 in 20-year return period events allowing for the impact of flood defences **(fluvial / tidal)**. • Land which is included within the EA's Flood Storage Areas dataset **(fluvial / tidal)**.

Table 3.3. Surface water flood risk hazard rating (HR) categories

Figure		Definition
Low	0.5 ≥ HR < 0.75	Caution – Flood zone with shallow flowing water or deep standing water
Moderate	0.75 ≥ HR ≤ 1.25	Dangerous for some (i.e. children) – Danger: flood zone with deep or fast flowing water
Significant	1.25 > HR ≤ 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

Current Risk Summary

This section provides a summary of the flood risks for the sites. This information informs the mitigation and site-specific FRA requirements.

Site access / egress

This section provides recommendations on where safe access and egress routes should be placed on site. This information is informed by the fluvial risk assessment. It is vital that that developers provide safe access and egress from their developments during times of flood.

Mitigation Requirements

This section lists potential mitigation measures which must be used to alleviate the risk of flooding to any potential development at the site. It provides site-specific recommendations to alleviate the risk of flooding for specific flood sources. The information provided should be used in conjunction with the guidance provided in Section 4 of the Level 1 SFRA.

Site specific requirements

This section provides site-specific FRA requirements for prospective developers. These tailored requirements are informed by the site-specific flood risk assessment. They are produced in line with the PPG Site-Specific FRA guidance and EA's FRA for Planning Application guidance.

Exception Test

This sections summaries the planning considerations to ensure that the site can satisfy the exception test.

Planning considerations

The final section of the pro forma provides further planning considerations recommended for potential developments. These considerations are centred around four questions:

- Can the development be future proofed for climate change considerations?
- Can the development be designed safe throughout its lifetime without increasing flood risk elsewhere?
- What is the cumulative impact of the development land use change and will flood risk increase?
- How can the development reduce risk overall?
- Will development require a flood risk activity permit / ordinary watercourse consent?

3.2 Data Sources

Risk assessments for each site were completed by conducting detailed reviews of potential flood risk impacts using data from the Environment Agency, Ordnance Survey, Thames Water, and the London Borough of Brent. Information on the sources, uses and limitations of each dataset are found in *Appendix A*.

Table 3.4 Summary of Data Sets

Figure	Dataset	Description	Source
All Figures	Ordnance Survey MasterMap	Shows the background mapping for all figures.	Ordnance Survey Open Data 2015
	Borough boundary	Shows the Brent borough boundary.	Ordnance Survey Open Data
	Brent site allocations	Shows the sites reviewed for the Level 2 SFRA.	Brent Local Plan 2020
1	National flood defences*	Shows the national spatial flood and linear defences that act to prevent flood water from flowing inland.	Environment Agency 2020
	Areas benefitting from flood defences*	Shows those areas that would benefit from the presence of defences in a 1 in 100 (1%)	Environment Agency 2020

Figure	Dataset	Description	Source
		chance of flooding each year from Rivers; or 1 in 200 (0.5 %) chance of flooding each year from the Sea.	
	Detailed River Network (including Main Rivers and ordinary watercourses) **	Shows the classification and pathway of main watercourses and other related water bodies.	Environment Agency 2020
	River Brent model data	Shows the 1 in 100 year plus climate change maximum flood depth for the River Brent.	Environment Agency 2017
	Argenta House - Former Unisy Building Data model data	Shows the 1 in 100 year plus climate change maximum flood depth for the River Brent (refined models for the allocated sites within the vicinity of Argenta House).	Brent Council 2018
2	River Brent model data	Shows the 1 in 100 year plus climate change flood hazard rating for the River Brent.	Environment Agency 2017
	Argenta House - Former Unisy Building Data model data	Shows the 1 in 100 year plus climate change flood hazard rating for the River Brent (refined model for the allocated sites within the vicinity of Argenta House).	Brent Council 2018
3	Risk of Flooding from Surface Water Depth: 1 in 100 year event	Shows the maximum depth of flooding from surface water that could result from a flood with a 1% chance of happening in any given year.	Environment Agency 2013
4	Risk of Flooding from Surface Water Hazard: 1 in 100 year event	Shows the flood hazard rating for flooding from surface water that could result from a flood with a 1% chance of happening in any given year.	Environment Agency 2013
5	Director General 5 (DG5) Sewer flooding records (No. of instances)	Shows where Thames Water have received reports of sewer flooding.	Thames Water 2020
6	Susceptibility to groundwater flooding	Shows the strategic scale map of groundwater flood areas on a 1km grid.	Environment Agency 2017

Figure	Dataset	Description	Source
6	Increased Potential for Elevated Groundwater	Shows the increased potential for groundwater to rise sufficiently to interact with or be within 2m of the ground surface.	Drain London 2011
7	Risk of Flooding from Reservoirs Depth:	Maximum depth of the area that might be flooded if a reservoir were to fail and release the water it holds.	Environment Agency 2020

* Data sets included within Figure 1 and Figure 2

** Data set included within Figures 1 – 4

4 GENERAL REQUIREMENTS

This section lists the general requirements that all sites within this Level 2 SFRA must follow. These are cross referenced in the individual sites assessments to highlight them where appropriate.

4.1 Fluvial Risk Mitigation

4.1.1

Development cannot take place in the Flood Zone 3b extent.

4.1.2

Developments within the Flood Zone 3a + CC and 1 in 1000year surface water extent require finished floor levels of at least 0.3m above the predicted fluvial and surface water flood level at that point, based on whichever predicted depth is higher. These mitigation requirements must be in line with predicted flood depths with climate change for fluvial and surface water flooding.

4.1.3

Where predicted flood depths with climate change are less than 0.3m, flood resistance construction of developments is required. Flood resilient measures should be implemented where predicted flood depths with climate change are greater than 0.3m. These mitigation requirements must be in line with predicted flood depths with climate change for fluvial and surface water flooding at that point, based on whichever predicted depth is higher.

4.1.4

Developments within the 1 in 1000year surface water and / or fluvial Flood Zone 3a + CC extents must provide compensatory flood storage that is equal to, or exceeds, the flood depths from these events. This is to ensure there will be no net loss of flood storage. This is required on a level for level and volume for volume basis.

4.1.5

Residual flood risk must be considered within any site-specific FRA. Residual risks include flood from flood defences being breached, blockage of sewer network, overtopping storage area, pump failure, reservoir failure, and flood events that exceed design standard.

4.1.6

Proposed new development must be at least 8m away from the Main River. If the site is already developed within 8m of a Main River and changes are proposed, then consultation with the EA must be completed and a flood risk activity permit may be required. Any new development should be avoided where practical within this 8m buffer area.

4.2 Surface Water Risk Mitigation

4.2.1

Developments within the 1 in 1000year surface water extent require finished floor levels of at least 0.3m above the predicted surface water flood level at that point. These mitigation requirements are in line with predicted flood depths with climate change for surface water flooding.

4.2.2
Where predicted surface water flood depths with climate change are less than 0.3m, flood resistance construction of developments is required. Flood resilient measures should be implemented where predicted surface water flood depths with climate change are greater than 0.3m.

4.2.3
Developments within the 1 in 1000year surface water extent must provide compensatory flood storage that is equal to, or exceeds, the flood depth from these events. This is to ensure there will be no net loss of flood storage. This is required on a level for level and volume for volume basis.

4.2.4
Residual flood risk must be considered within any site-specific FRA. Residual risks include flood from flood defences being breached, blockage of sewer network, overtopping storage area, pump failure, reservoir failure, and flood events that exceed design standard.

4.2.5
Proposed new development must be at least 5m away from an ordinary watercourse. If the site is already developed within 5m of an ordinary watercourse and changes are proposed, then consultation with the Lead Local Flood Authority (LLFA) must be completed and a consent may be required. Any new development should be avoided where practical within this 5m buffer area.

APPENDICES

Appendix A – Data Sources

Appendix B – Site Assessments

Appendix A – Data Sources

Dataset	Description	Source	Use	Limitations
Ordnance Survey MasterMap	Shows the background mapping for all figures.	Brent Council 2020	Figures - 1,2,3,4,5, 6,7	No known limitations.
Borough boundary	Shows the Brent borough boundary.	Ordnance Survey Open Data	Figures - 1,2,3,4,5, 6,7	No known limitations.
Brent site allocations	Shows the sites reviewed for the Level 2 SFRA.	Brent Local Plan 2020	Figures - 1,2,3,4,5, 6,7	No known limitations.
National flood defences	Shows the national spatial flood and linear defences that act to prevent flood water from flowing inland. These can be man-made embankments and walls but also naturally occurring processes such as shingle ridges and dunes. All man-made defences will have a design level and/or a standard of protection.	Environment Agency 2017	Figures - 1,2	Some areas that already benefit from recently completed flood defences may not yet be indicated on these maps. The EA have assumed that flood defences act perfectly and give the same level of protection as when the assessment of the area was carried out. Flood defences do not completely remove the chance of flooding and can be overtopped or fail in extreme weather conditions.
Areas benefitting from flood defences	Shows those areas that would benefit from the presence of defences in a 1 in 100 (1%) chance of flooding each year from Rivers; or 1 in 200 (0.5 %) chance of flooding each year from the Sea.	Environment Agency 2017	Figures – 1,2	The information provided is largely based on modelled data and is therefore indicative rather than specific. Locations may also be at risk from other sources of flooding, such as high

Dataset	Description	Source	Use	Limitations
	If the defences were not there, these areas would flood. Note that this does not show all areas that benefit from all flood defences and it is assumed that flood defences and other operating structures act perfectly and give the same level of protection as when the assessment of the area was made.			groundwater levels, overland run off from heavy rain, or failure of infrastructure such as sewers and storm drains.
Detailed River Network (including Main Rivers and ordinary watercourses)	Shows the classification and pathway of main watercourses and other related water bodies.	Environment Agency 2017	Figures – 1,2	Other input datasets and extensive local Environment Agency staff knowledge has been used to augment the core geometry to incorporate critical spatial detail and attribution, such as flow direction and path, not available from the OS mapping and to verify the accuracy of the centreline itself.
River Brent model data	Shows the 1 in 100 year plus climate change maximum flood depth for the River Brent.	Environment Agency 2017	Figure 1	Flood Mechanisms may have changed since the time model was completed.
Argenta House – Former Unisy Building Data model data	Shows the 1 in 100 year plus climate change maximum flood depth for the River Brent (refined model for the allocated sites within the vicinity of Argenta House).	Brent Council	Figure 1	Flood Mechanisms may have changed since the time model was completed.
Risk of Flooding from Surface Water Depth: 1 in 100 year event	Shows the maximum depth of flooding from surface water that could result from a flood with a 1% chance of happening in any given year. The flood depth is grouped into 6 bands. NB: the maximum depth may not happen at the same time as the maximum speed of flow. This dataset is one output of our Risk of Flooding from Surface Water (RoFSW) mapping.	Environment Agency 2017	Figure 3	Mapping is not suitable to be used: • To identify if an individual property will or will not flood. • On a map with background mapping more detailed than 1:10,000. As the sole evidence for any specific planning or regulatory decision or assessment of risk in relation to flooding at any scale without further supporting studies or evidence.

Dataset	Description	Source	Use	Limitations
Risk of Flooding from Surface Water Hazard: 1 in 100 year event	Shows the flood hazard rating for flooding from surface water that could result from a flood with a 1% chance of happening in any given year. The flood hazard rating is defined as a function of simultaneous depth and velocity and grouped into 4 bands. This dataset is one output of our Risk of Flooding from Surface Water (RoFSW) mapping.	Environment Agency 2017	Figure 4	It is not suitable to be used: • To identify if an individual property will or will not flood. • On a map with background mapping more detailed than 1:10,000. As the sole evidence for any specific planning or regulatory decision or assessment of risk in relation to flooding at any scale without further supporting studies or evidence.
Director General 5 (DG5) Sewer flooding records (No. of instances)	shows where Thames Water have received reports of sewer flooding.	Thames Water 2020	Figure 5	No known limitations.
Susceptibility to groundwater flooding	Shows the strategic scale map of groundwater flood areas on a 1km square grid.	Environment Agency 2017	Figure 6	No known limitations.
Increased Potential for Elevated Groundwater	Shows the increased potential for groundwater to rise sufficiently to interact with or be within 2m of the ground surface.	Drain London 2011	Figure 6	No known limitations.
Geology of Britain (Surface Geology)	The surface geology map provides superficial and bedrock geology information. The data is based on 1:50 000 and 1:63 360 scale maps. The data set covers most of Great Britain, providing a detailed	British Geological Survey	Site Assessment templates	No known limitations.

Dataset	Description	Source	Use	Limitations
	description of geology on a local to regional level. Lithostratigraphic nomenclature is updated to current usage.			
Risk of Flooding from Reservoirs Depth:	Shows the maximum depth of the area that might be flooded if a reservoir were to fail and release the water it holds.	Environment Agency 2020	Figure 7	Flood maps for large reservoirs are displayed. Flood maps are not displayed for smaller reservoirs or for reservoirs commissioned after reservoir mapping began in spring 2009.

Appendix B – Site Assessments

ASSESSMENT OF SITES TRIGGERED BY FLUVIAL RISK

SITE No.01 - STADIUM RETAIL PARK AND FOUNTAIN STUDIOS

SITE No.02 - BROOK AVENUE

SITE No.03 - WATKIN ROAD

SITE No.04 - COLLEGE OF NORTH WEST LONDON WEMBLEY

SITE No.05 - COOMBE ROAD

SITE No.06 - AGENTA HOUSE AD WEMBLEY POINT

SITE No.07 - BRIDGE PARK AND UNISYS

SITE No.08 - BLACKBIRD COURT, BLACKBIRD HILL INTENSIFICATION CORRIDOR

SITE No.09 - 494-504 NEASDEN LANE INTENSIFICATION CORRIDOR

SITE No.10 - 460-492 NEASDEN LANE INTENSIFICATION CORRIDOR

SITE No.11 - 460 TALBOT COURT TO ENGLISH MARTYRS RC CHURCH BLACKBIRD HILL INTENSIFICATION CORRIDOR

SITE No.12 - 2-4 NORTH CIRCULAR ROAD, 2-32 BRENTFIELD AND 1-3A SUNNY CRESCENT

SITE No.13 - 2-44A HARROW ROAD

SITE No.14 - SYLVIA COURT HARROW ROAD

SITE No.15 - PARGREAVES COURT, 70 BROOKE AVENUE

SITE No.16 - CENTURY HOUSE AND TAVERNERS COURT, FORTY AVENUE

SITE No.17 - 1-10 RICHMOND COURT AND 80B FORTY AVENUE

SITE No.18 - 1 FORTY CLOSE AND MEETING ROOM FORTY AVENUE

SITE No.19 - 53-63 FORTY AVENUE, PERRIN GRANGE, THE CITY LEARNING CENTRE AND BROOK HOUSE AND 58-64 FORTY AVENUE

ASSESSMENT OF SITES TRIGGERED BY SURFACE WATER RISK

SITE No.20 - NEASDENS STATIONS GROWTH AREA

SITE No.21 - TURPIN'S YARD

SITE No.22 - SITE NW04 WEMBLEY MASTERPLAN

SITE No.23 - 84-98 WEMBLEY PARK DRIVE

SITE No.24 - QUEENSBURY UNDERGROUND STATION CAR PARK

SITE No.25 - 438-444 NEASDEN LANE AND PIT HOUSE

SITE No.26 - HEREFORD HOUSE & EXETER COURT

SITE No.27 - SPRINGHILL HOUSE, WILLESDEN LANE

SITE No.28 - PARK AVENUE GARAGE