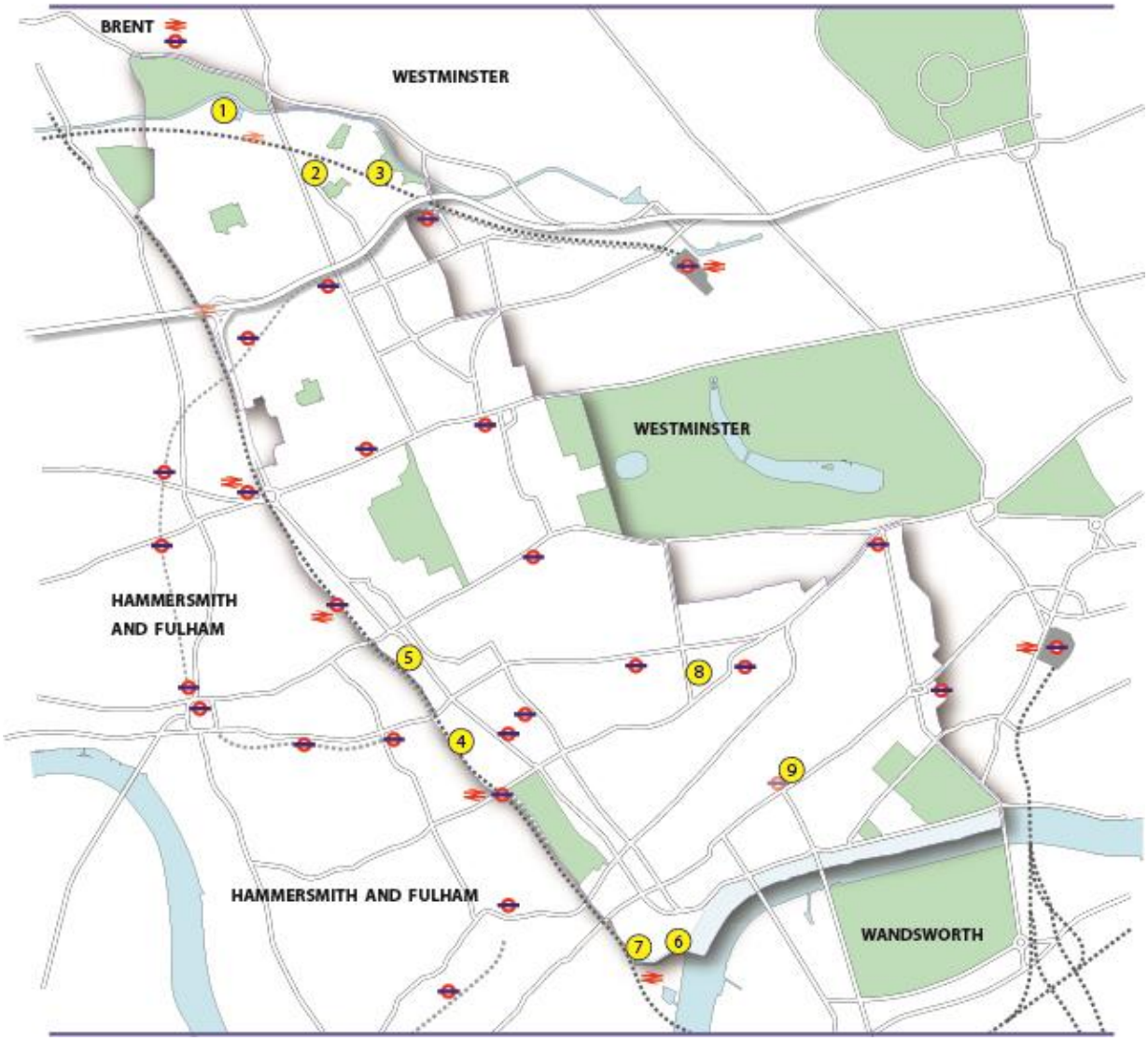
STRATEGIC SITES

1. Kensal
2. Wornington Green
3. Land adjacent to Trellick Tower
4. Earl's Court
5. Warwick Road sites
6. Lots Road Power Station (permission granted)
7. Site at Lots Road
8. Harrington Road
9. Chelsea Farmers' Market



Flood Risk Sequential Test
September 2019

THE ROYAL BOROUGH OF
KENSINGTON
AND CHELSEA

Contents

1 INTRODUCTION

1.1 AIM OF THE SEQUENTIAL TEST

1.1.1 Paragraph 019 of the National Planning Practice Guidance (NPPG) on Flood Risk and Coastal Change explains that the Sequential Test ensures that a sequential approach is followed to steer new development to areas with the lowest probability of flooding. The flood zones as refined in the Strategic Flood Risk Assessment (SFRA) for the area provide the basis for applying the Test. The aim is to steer new development to Flood Zone 1 (areas with a low probability of river or sea flooding). Where there are no reasonably available sites in Flood Zone 1, local planning authorities in their decision making should take into account the flood risk vulnerability of land uses and consider reasonably available sites in Flood Zone 2 (areas with a medium probability of river or sea flooding), applying the Exception Test if required. Only where there are no reasonably available sites in Flood Zones 1 or 2 should the suitability of sites in Flood Zone 3 (areas with a high probability of river or sea flooding) be considered, taking into account the flood risk vulnerability of land uses and applying the Exception Test if required.

1.1.2 There are four areas in the Borough designated as Critical Drainage Areas which may fall in Flood Zone 1. Within each flood zone, surface water and other sources of flooding also need to be taken into account in applying the sequential approach to the location of development. For the purposes of this assessment, those areas have been considered as areas with high probability of surface and sewer flooding (and therefore, they have been given the same status as those areas falling within Flood Zone 3).

1.1.3 Table 2 categorises different types of uses & development according to their vulnerability to flood risk. Table 3 maps these vulnerability classes against the flood zones set out in Table 1 to indicate where development is 'appropriate' and where it should not be permitted. These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning (Rivers and Sea), available on the Environment Agency's web site[1].

1.1.4 The Sequential and Exception Tests do not need to be applied to minor developments and changes of use, except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2	Land having between a 1 in 100 and 1 in 1,000 annual probability of

[1] http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683&y=355134&scale=1&layerGroups=default&ep=map&textonly=off&lang=_e&topic=floodmap

Medium Probability	river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Table 1: The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea). (Source: paragraph 065 NPPG).

1.1.5 The above Flood Zones do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the Strategic Flood Risk Assessment when considering location and potential future flood risks to developments and land uses.

Essential Infrastructure • Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood. • Wind turbines.
Highly Vulnerable • Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure').
More Vulnerable • Hospitals • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. • Non–residential uses for health services, nurseries and educational establishments. • Landfill* and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

Less Vulnerable

- Police, ambulance and fire stations which are not required to be operational during flooding.
- 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.
- Land and buildings used for agriculture and forestry.
- Waste treatment (except landfill* and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works which do not need to remain operational during times of flood.
- Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.

Water-Compatible Development

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

Table 2: Flood Risk Vulnerability Classification. (Source: paragraph 066 NPPG).

Flood Zones	**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 †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

Table 3: Flood Risk Vulnerability and Flood Risk Compatibility. (Source: NPPG).
Notes to table 3: Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts. In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood. In Flood Zone 3b (functional floodplain) essential infrastructure that has to be there and has passed the Exception Test, and water-compatible uses, should be designed and

constructed to:

- *remain operational and safe for users in times of flood;*
- *result in no net loss of floodplain storage;*
- *not impede water flows and not increase flood risk elsewhere.*

1.2 APPLYING THE SEQUENTIAL TEST IN THE PREPARATION OF THE LOCAL PLAN

1.2.1 The process of applying the Sequential Test in the preparation of a Local Plan is illustrated in diagram 2 (below), as explained in paragraph 020 of the NPPG. As some areas at lower flood risk may not be suitable for development for various reasons and therefore out of consideration, the Sequential Test should be applied to the whole local planning authority area to increase the possibilities of accommodating development which is not exposed to flood risk. More than one local planning authority may jointly review development options over a wider area where this could potentially broaden the scope for opportunities to reduce flood risk and put the most vulnerable development in lower flood risk areas.

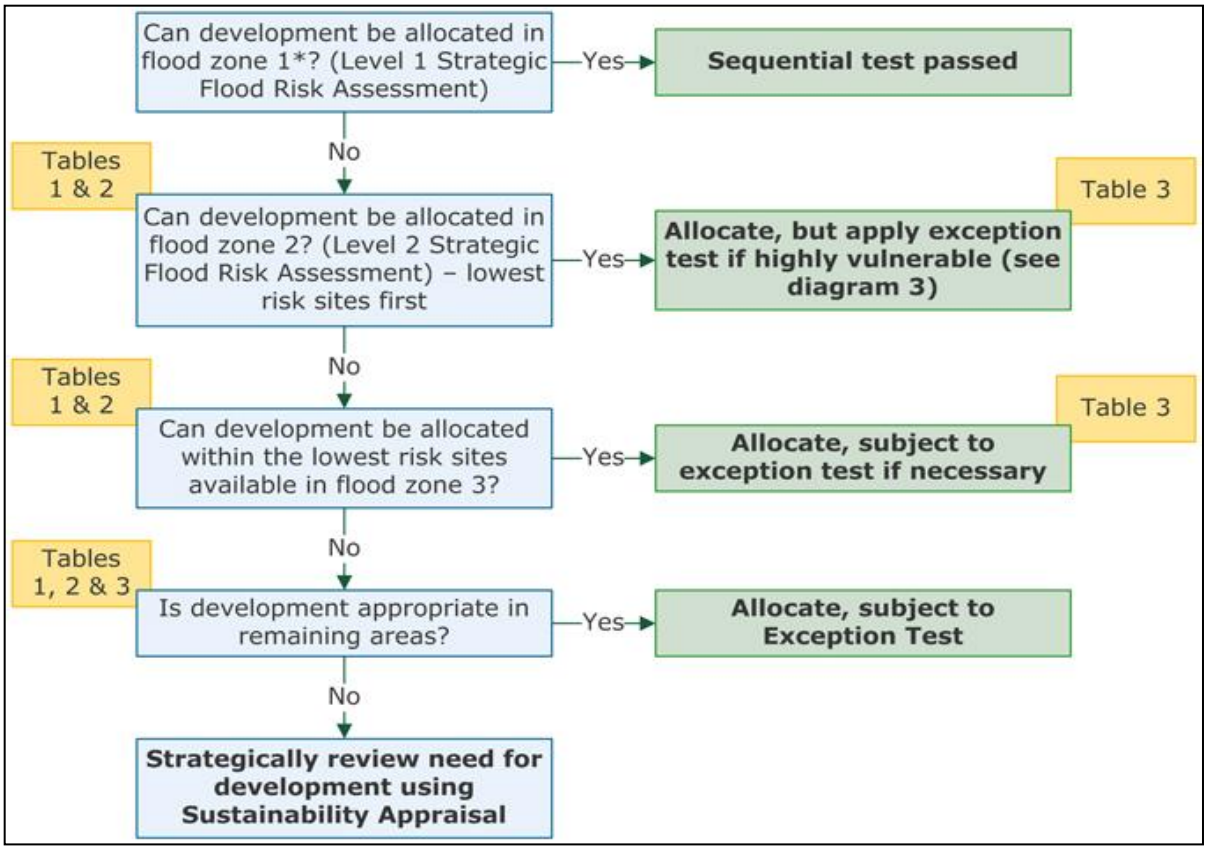


Diagram 1: Application of the Sequential Test for Local Plan preparation. (Source: NPPG).

1.3 THE ROLE OF THE SUSTAINABILITY APPRAISAL IN THE SEQUENTIAL TEST

1.3.1 Paragraph 022 of the NPPG explains that a local planning authority should demonstrate through evidence that it has considered a range of options in the site allocation process, using the Strategic Flood Risk Assessment to apply the Sequential Test and the Exception Test where necessary. This can be undertaken directly or, ideally, as part of the sustainability appraisal (Integrated Impact Assessment IIA). Where other sustainability criteria outweigh flood risk issues, the decision making process should be transparent with reasoned justifications for any decision to allocate land in areas at high flood risk in the IIA report. The Sequential Test can also be demonstrated in a free-standing document, or as part of strategic housing land or employment land availability assessments.

1.4 THE EXCEPTION TEST

1.4.1 The Exception Test, as set out in paragraph 102 of the NPPF, is a method to demonstrate and help ensure that flood risk to people and property will be managed satisfactorily, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

1.4.2 Essentially, the two parts to the Test require proposed development to show that it will provide wider sustainability benefits to the community that outweigh flood risk, and that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall.

1.4.3 To satisfy part one of the test, local planning authorities will need to consider what criteria they will use in this assessment, having regard to the objectives of their Local Plan's Sustainability Appraisal IIA framework, and provide advice which will enable applicants to provide the evidence to demonstrate this part of the Exception Test is passed.

1.4.4 If a planning application fails to score positively against the aims and objectives of the Local Plan IIA or Local Plan policies, or other measures of sustainability, the local planning authority should consider whether the use of planning conditions and/or planning obligations could make it do so. Where this is not possible, the Exception Test has not been satisfied and planning permission should be refused.

1.4.5 In order to satisfy part 2 of the test, the developer must provide evidence to show that the proposed development would be safe and that any residual flood risk can be overcome to the satisfaction of the local planning authority, taking account of any advice from the Environment Agency. The developer's site-specific flood risk assessment should demonstrate that the site will be safe and that people will not be exposed to hazardous flooding from any source. The following should be covered by the flood risk assessment:

- the design of any flood defence infrastructure;
- access and egress;

- operation and maintenance;
- design of development to manage and reduce flood risk wherever possible;
- resident awareness;
- flood warning and evacuation procedures: and
- any funding arrangements necessary for implementing the measures.

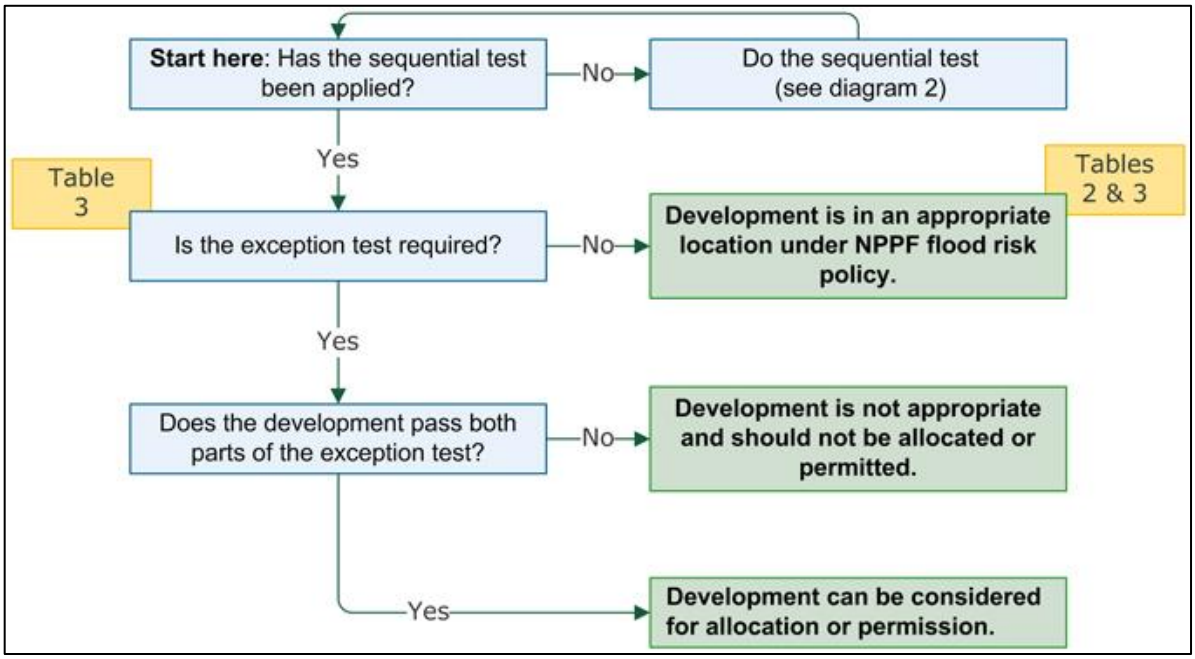


Diagram 2: Application of the Exception Test to Local Plan preparation. (Source: NPPG).

1.5 FLOODING AND DRAINAGE ISSUES IN THE BOROUGH

1.5.1 The Strategic Flood Risk Assessment (SFRA) identifies the most significant sources of flood risk within the Borough as a breach or overtopping of the Thames tidal defences, flooding from surface water, and sewer flooding due to lack of capacity in the sewerage system.

1.5.2 It is important to note the interaction of rainfall with the combined sewer system which takes both surface and foul water. Under heavy rainfall events the sewer system can become overwhelmed and discharge water into the lower parts of properties such as basement areas. This is known as sewer water flooding. In addition to these main sources of flood risk, there is a risk that a rise in groundwater levels may lead to localised groundwater flooding. Groundwater flooding could be seasonal or happen as a result of periods of heavy rain. Flooding can also occur as a result of the Serpentine's reservoir walls or the Grand Union Canal being breached. This is considered unlikely.

1.5.3 The complex interaction of surface and sewer flooding in the Borough has been

acknowledged by the designation of four Critical Drainage Areas: areas in which this interaction is considered as more acute. The Critical Drainage Areas are: North Kensington, Holland Park, Kensington and Sloane Square and can be seen in the figure below.

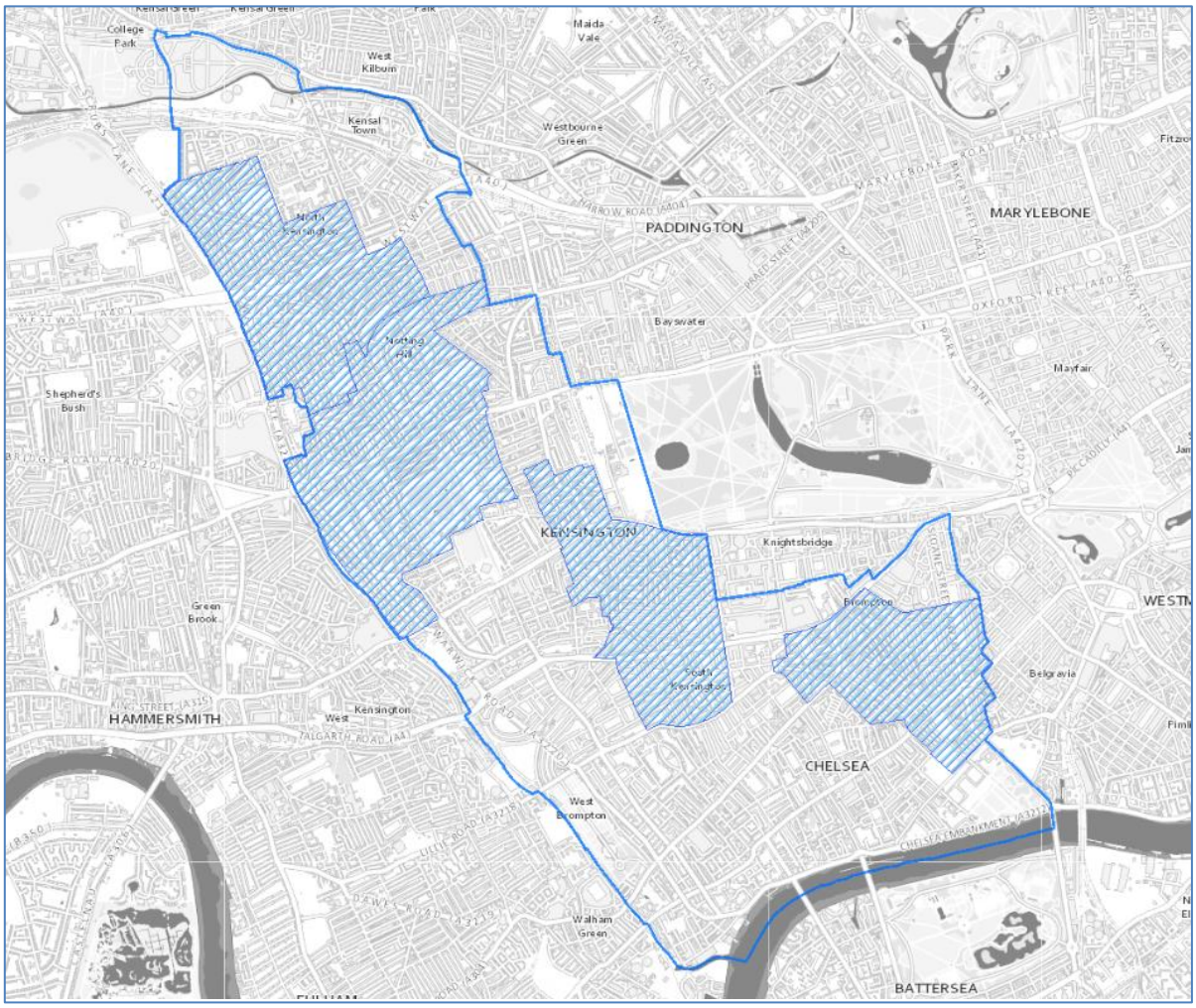


Figure 1: The Borough's four Critical Drainage Areas.

1.5.4 There have been several episodes of flooding in the Borough. The main reason for flooding is the inability of the sewers to cope with the fast intake of surface water run-off, adding to the foul water in the sewers during intense storm events. The Borough is located at the lower end of the sewer system's catchment area which means surface and foul water from other Boroughs such as Camden and Brent is already in the sewer system reducing its capacity. Other causes that can lead to an increase in surface water and sewer flooding include:

- an increase in population and pressure for development which can lead to an increase in foul water discharge;
- an increase of impermeable surfaces as a result of actions such as paving gardens and building more houses and roads. As a result, rainfall does not soak away into the soil - it drains directly into an already close-to-capacity sewer system.

1.5.5 Groundwater flood risk is directly related to the underlying geology. The SFRA includes two figures which give an indication of potential groundwater flooding: figure 14 *Susceptibility to Groundwater Flooding Map with Reported* Incidents and 16 *Increased Potential for Elevated Groundwater*. These maps show a general north-south divide with groundwater flooding being more likely towards the south of the Borough.

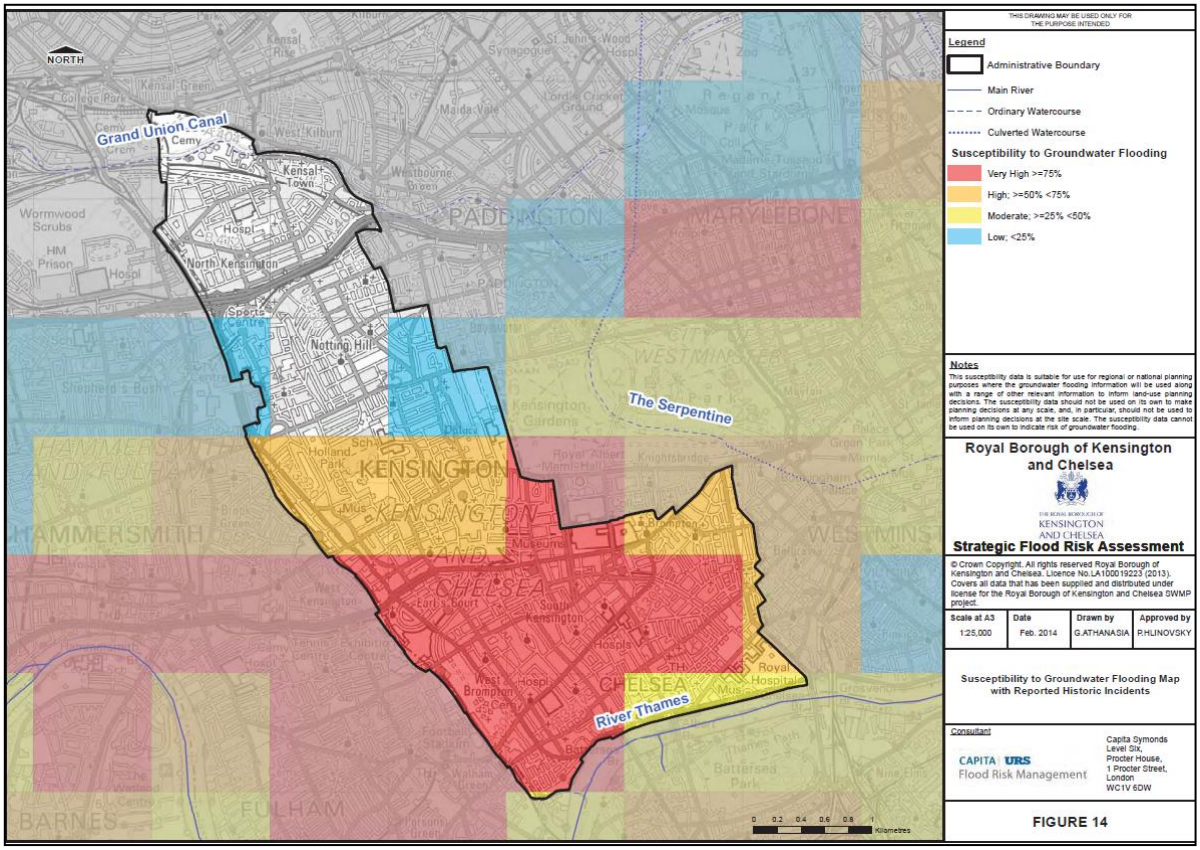


Figure 2: Susceptibility to Groundwater Flooding Map with Reported Incidents (SFRA figure 14).

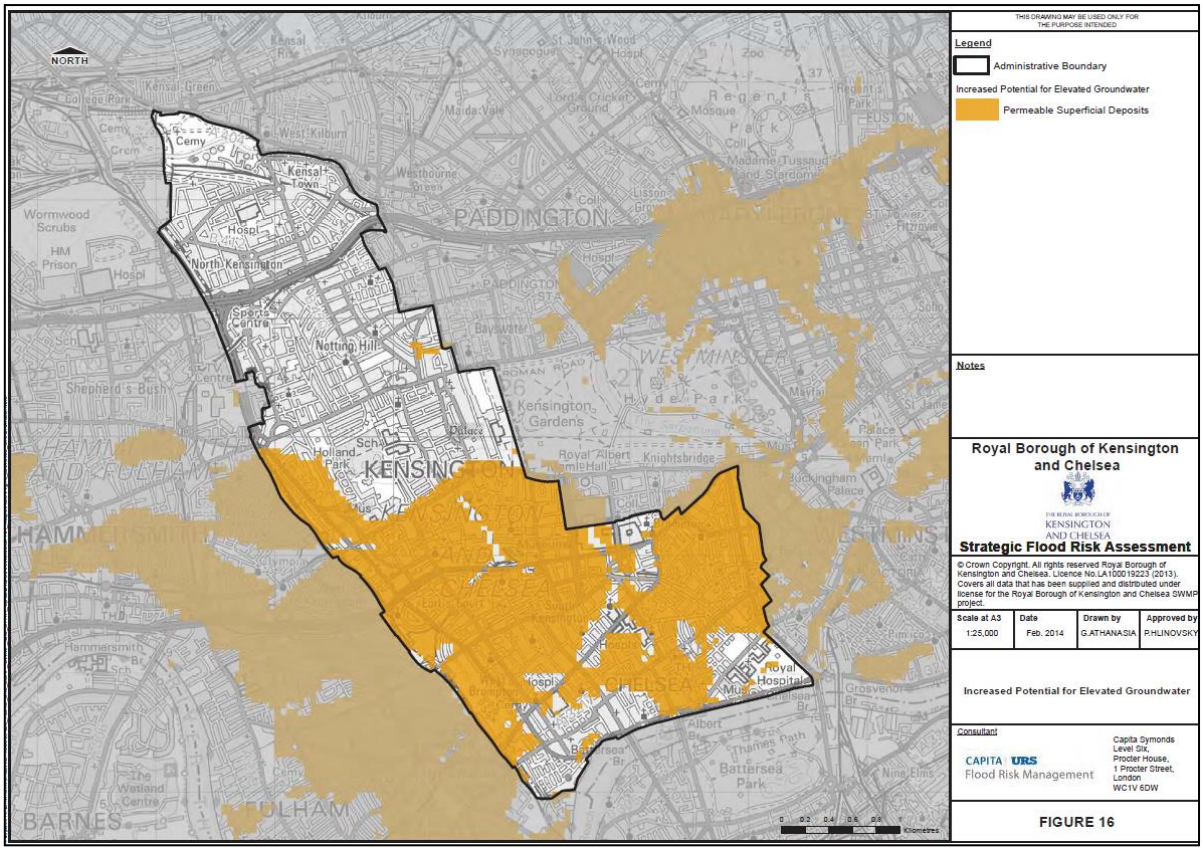


Figure 3: Increased Potential for Elevated Groundwater (SFRA figure 16).

2. METHODOLOGY

2.1 DATA AND DOCUMENTATION

2.1.1 A series of flood risk and sustainability documents were reviewed during the production of the Sequential Test to find information about the requirements of the test and how to undertake it. Material regarding flood risk issues in the Borough and data of the strategic sites, their allocation and sustainability issues were found in the Local Plan and regional and local evidence base documents. The following table gives a summary of all the documents consulted.

Date	Document	Organisation
Mar 2014	National Planning Policy Framework (NPPF) Several paragraphs including 94 (flood risk) and 102 (exception test)	DCLG
Mar 2015	National Planning Practice Guidance (NPPG): Flood Risk and Coastal Change Several paragraphs including 019 and 020 (sequential test)	DCLG
Nov 2012	Thames Estuary 2100 Plan Sets out recommendations for flood risk management for London and the Thames estuary through to 2100 and beyond	Environment Agency (EA)
Feb 2016	Thames River Basin Management Plan Provides a framework for protecting and enhancing the benefits provided by the water environment	EA
Jun 2014	The English Inshore and Offshore Waters Plan Includes policies for the different sectors	Marine Management Organisation (MMO)
Jun 2014	East Inshore and East Offshore marine plan areas Highlights policies that apply to a chosen area to inform strategies and plans	MMO
Feb 2013	Thames breach flood plan Provides a co-ordinated multi-agency response framework to mitigate the impact of a large event of Thames breach / overtopping	Royal Borough of Kensington and Chelsea
Apr 2015	TE2100 Local Council Briefing Document – Royal Borough of Kensington and Chelsea April 2015. Explains how the findings of the TE2100 project should be implemented	EA
Oct 2016	Environment Agency Flood map for Planning (rivers and the sea)	EA
Aug 2014	London Flood Risk Appraisal First Review Updates the Regional Flood Risk Appraisal (RFRA) published in 2009 to support the Replacement London Plan (2011).	Greater London Authority

Date	Document	Organisation
Oct 2009	Regional Flood Risk Assessment Provides an overview of all sources of flooding in London addressing its probability and consequences.	GLA
Mar 2014	Strategic Flood Risk Assessment Gives an overall assessment of flood risk in the Borough and provides flood risk mapping	RBKC
Mar 2014	Surface Water Management Plan Focuses on surface water and identifies and gives information on Critical Drainage Areas. Also provides flood risk mapping	RBKC
Jul 2015	Local Flood Risk Management Strategy Gives information regarding flood risk in the Borough and how the Council and other partners are addressing it. It contains an action plan with clear objectives and actions to tackle flood risk	RBKC
Jun 2011	Preliminary Flood Risk Assessment High level screening exercise with information on local flood risk from past and future flooding	RBKC
Feb 2013	Multiagency flood plan Outlines the multi-agency response to a severe surface water flooding incident	RBKC
Dec 2015	Monitoring Report 2015 Explains that a range of measures need to be taken as part of the development management process and at a larger scale.	RBKC
May 2016	Local Plan Partial Review Local Development Scheme 2016 Sets out the timetable for the preparation and review of the Council's planning policy documents.	RBKC
Oct 2016	RBKC Local Plan Partial Review Gives information on the Issues and Options and the Draft Policies stages	RBKC
July 2015	RBKC Existing Local Plan Includes the current policies for RBKC	RBKC
May 2002	Adopted Unitary Development Plan (The Local Plan Partial Review will completely supersede any extant policies)	RBKC
Dec 2015	Strategic Housing Market Assessment for the Royal Borough of Kensington and Chelsea It sets out the findings of the strategic housing market assessment and it is intended to inform the development of the Local Plan and housing strategy of RBKC.	RBKC
Mar 2016	Retail and Leisure Needs Study Update. Provides information on recent changes/trends in retail and leisure and an update of the needs assessment.	RBKC

Date	Document	Organisation
Oct 2016	Employment Land Need and Availability (ELNA) Background Paper. It helps to develop the Local Plan policies which can support business development and economic growth in the Borough.	RBKC
	Supplementary Planning Documents relevant to the strategic sites:	
Apr 2016	• Basements SPD	RBKC
Dec 2008	• Kensal Canalside Pre-Feasibility Study	RBKC
Oct 2016	• Kensal Canalside Development Infrastructure Funding Study	RBKC
Nov 2009	• Wornington Green SPD	RBKC
Mar 2015	• Trellick-Edenham Planning Brief	RBKC
Jan 2008	• Warwick Road SPD	RBKC
Mar 2012	• Earl's Court and West Kensington Opportunity Area joint SPD	LBHF and RBKC

Table 4: Flood Risk Vulnerability and Flood Risk Compatibility. (Source: paragraph 067 NPPG).

2.2 SITE ANALYSIS

2.2.1 Section 1 of this document explains the information provided in the NPPG in relation to the Sequential Test. This information was followed to undertake the test to the Borough's sites.

2.2.2 A total of 12 sites were sequentially tested. The application of the Sequential Test included the following questions (as explained in diagram 2 above):

- Can the development be allocated in Flood Zone 1?
- Can the development be allocated in Flood Zone 2? (lowest risk sites first)
- Can the development be allocated within the lowest risk sites in Flood Zone 3 or the Critical Drainage Area?
- Is the development appropriate in the remaining areas?
- Strategically review the need for the development using the IIA report.

2.2.3 When necessary, the Exception test was applied to ascertain if the proposed development would be able to satisfy both parts. This ensures that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk, and that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall.

2.2.4 To satisfy part one of the test the objectives of the Local Plan's IIA framework will be used as the basis for the assessment criteria. If the allocation of the strategic site fails to score positively against the aims and objectives of the Local Plan IIA or Local Plan policies, or other measures of sustainability, the use of planning conditions and/or

planning obligations will be reviewed to see if the allocation could make it do so. Where this is not possible, the Exception Test will not be satisfied, development is not appropriate and should not be allocated.

2.2.5 As explained earlier, the IIA was used to understand the need for the development and its benefits. If other sustainability criteria outweighed flood risk issues, reasoned justifications were used to allocate land in areas at high flood risk in the IIA report and to ensure transparency.

2.2.6 Flood risk data was obtained from the modelling information contained in the Strategic Flood Risk Assessment and the Surface Water Management Plan. The case study used to model the behaviour of surface water was the 1 in 100 year event plus climate change allowance.

2.3 CLIMATE CHANGE

2.3.1 As explained in section 1, the Flood Zones designated by the Environment Agency do not take account of the possible impacts of climate change. To address this, the Borough's Strategic Flood Risk Assessment was considered when assessing the location and potential future flood risks to developments and land uses. The Environment Agency confirmed at Issues and Options stage that the Strategic Flood Risk Assessment would not need to be modified to include the latest climate change allowances.

2.3.2 Section 5.5 of the Strategic Flood Risk Assessment explains that a significant increase in Thames tidal peak is expected for a 1 in 200 year tidal event. The estimated increase goes from the current 4.92mAOD (meters above ordnance datum) to a level of 5.85mAOD by 2100. The breach model was updated by increasing the tidal levels in the input hydrograph to reflect the TE2100 future dataset.

3. SITES

3.0.1 Chapter 4 of the Local Plan Partial Review Draft Policies explains that there are several areas of change in the Borough. Some of those areas have strategic sites allocated to them. The following table shows in which areas the strategic sites are. Each of these sites will be sequentially tested later in this section.

Theme	Place/Centre	Strategic Sites
Areas of Change	**Kensal**	• Kensal Canalside Opportunity Area
	Golborne	• Wornington Green (permission granted) • Land adjacent to Trellick Tower
	Latimer	• No site allocations
	Earl's Court	• Earl's Court Exhibition Centre (permission granted) • Warwick Road Sites
	Lots Road/ World's End	• Lots Road Power Station (permission granted) • Site at Lots Road
Strengthening our existing national and international destinations	**Kensington High Street**	• No site allocations
	Portobello Road	• No site allocations
	Notting Hill Gate	• No site allocations
	Knightsbridge	• No site allocations
	South Kensington	• 39-49 Harrington Road
	Sloane Square / King's Road East and West	• Chelsea Farmers' Market, Sydney Street

Table 5: Areas of change in the Borough and associated strategic sites.

Integrated Impact Assessment (IIA)

3.0.2 The Integrated Impact Assessment (IIA) explains that the sites in the Northern Regeneration Area (Kensal Canalside Opportunity Area, Wornington Green, and Land Adjacent to Trellick Tower) offer important socio-economic and regeneration benefits. Specifically, they will provide improvements in regards to the following IIA objectives: crime, ecology, parks and open spaces, transport (which could have a positive knock on effect on climate change and health and well-being), access to services and facilities and housing. Potential biodiversity net benefits could be achieved along the green corridors in the railways.

3.0.3 The strategic sites in the central part of the Borough (Earl's Court Exhibition Centre, Warwick Road Sites, and Harrington Road) will also provide similar socio-economic benefits. Regeneration benefits will be particularly important at the Earl's Court Exhibition Centre and Warwick Road Sites. The main difference with the northern sites (with the exception of the Earl's Court Exhibition Centre) is that they are not likely to provide obvious benefits regarding the crime and environmental objectives as most sites are considered as urban sites in active use. In terms of housing, it is acknowledged that as these sites are located in the most expensive part of the Borough, they should be able to provide a high amount of affordable homes.

3.0.4 Finally, the most southern sites: Chelsea Farmers' Market. Site at Lots Road and Lots Road Power Station, will offer substantive socio-economic benefits (economy, equalities, transport, access to services and facilities and housing). They lack most of the environmental sensitivities of the northern sites as they are currently active urban sites. The IIA explains that the Site at Lots Road shares an adjacent green corridor with the Earl's Court Exhibition Centre and the Warwick Road Sites which should be taken into consideration at design stage.

3.1 WINDFALL SITES

3.1.1 The Borough has a large number of windfall sites. Developers will need to take into account the findings and recommendations of this Sequential Test and provide evidence that they have adequately considered other reasonably available sites. Paragraph 104 of the NPPF explains that for individual developments on sites allocated in development plans through the Sequential Test, applicants need not apply the Sequential Test. Applications for minor development and changes of use should not be subject to the Sequential or Exception Tests but should still meet the requirements for site-specific flood risk assessments. Windfall sites are not assessed in this Sequential Test. Therefore, the application of the Sequential Test and the Exception tests on windfall sites will depend on their size.

3.2 CA1 KENSAL CANALSIDE OPPORTUNITY AREA

SITE ALLOCATION AND CONSIDERATIONS

3.2.1 Kensal Canalside Opportunity Area is a key strategic site for the borough. The vision for the Opportunity Area is that it will have been transformed from a former gasworks and railway depot into a thriving, well-connected community. A new Crossrail station on the site will minimise the need for private vehicle use and improve employment prospects in the north of the borough and making travelling to work easier. Residential-led development will have made the most of its canalside location, with dockside development and improved access to the waterway, and of the green setting provided by Kensal Green Cemetery. New connections will provide a link across the railway and westwards to Scrubs Lane and Old Oak Park Royal. Kensal Employment Zone will provide flexible workspace, and supporting uses that bring vitality, to allow small and medium sized businesses to flourish, building on the area's existing strengths in the creative sector.

3.2.2 The site area is 15.4 hectares. The land use allocation for this site is

a. upwards of:
   i. 3,500 new dwellings;
   ii. 10,000m^2 of new offices;
   iii. 2,000m^2 of new non-residential floorspace, including social and community and local shopping facilities;
b. a station on the Elizabeth Line (and better transport links in general);
c. the relocation and reprovision of the existing Sainsbury's supermarket;
d. On-site renewable energy sources to serve the site with the potential to contribute to the heat and energy demand of the wider community as part of a district heat and energy network;
e. the provision of on-site waste management facilities to deal with the development's waste arisings from the new uses of the site (including recycling facilities and/or anaerobic digestion).

FLOOD RISK ANALYSIS AND SEQUENTIAL TEST

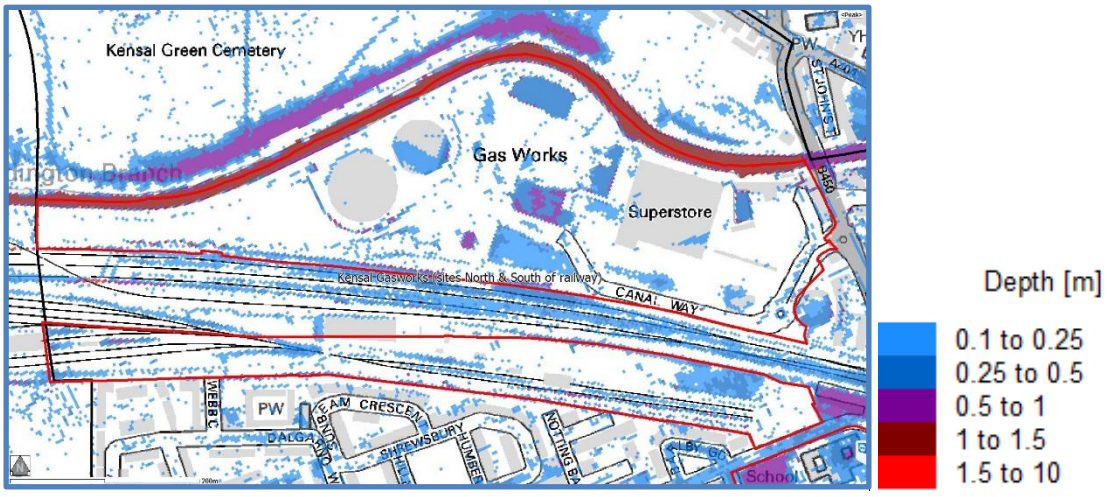


Figure 4: Surface Water flood depth (top) and flood hazard (below) of the Kensal Canalside Opportunity Area strategic site.

3.2.3 Surface water ponding on the site during the 1 in 100 year rainfall event plus climate change (30% allowance) could occur at different locations: central, east of the site and along the railway lines. Surface water flooding on the site is associated with moderate and significant (danger for some and for most) hazard rating. However, the percentage of the site at risk of flooding is relatively small and the least vulnerable uses should be located when possible in areas away from ponding. Flood risk mitigation and prevention measures should address this type of flood risk. Other sources of flood risk could be flood risk from a breach of the canal. However, this type of flood risk is typically considered unlikely. The SFRA figures 14 and 16 show that the site falls within an area which is likely to have low susceptibility to groundwater flooding and no permeable deposits. Further assessments will be needed at planning application stage.

3.2.4 The land use most vulnerable to flood risk is the transport links (Elizabeth Line station) which is considered as 'essential infrastructure' under the flood risk vulnerability classification. The site falls within Flood Zone 1 (low risk of flooding) and it is outside a Critical Drainage Area. Therefore, the proposed development is compatible with the flood zone and the Sequential Test is deemed to be passed. The Exception Test is not required, therefore the development is in an appropriate location under the NPPF flood risk policy. Although the site is not in a Critical Drainage Area, it should be noted that the site is in close proximity to the North Kensington Critical Drainage Area and surface water run-off from the site could find a way to feed the Critical Drainage Area. It is therefore very important that surface water run-off is controlled and minimised as much as possible. Post-development greenfield run-off rates should be aimed at by developers. As the site is bigger than 1ha, a Flood Risk Assessment should be submitted to support any future planning application. This assessment should take into account the new climate change allowances and requirements, especially for surface water flooding.

3.3 CA2 WORNINGTON GREEN

SITE ALLOCATION AND CONSIDERATIONS

3.3.1 Wornington Green falls within the Golborne Place. The Council's vision for the place is the following: "Regeneration of the Wornington Green estate will be complete, providing the existing community with more homes, new shops, offices, social and community facilities and a new public square. The area's historic street pattern will be reinstated and Portobello Road will be reconnected to Ladbroke Grove. The completed redevelopment of the site in front of Trellick Tower will reflect its status as the icon of the area. New housing will be a mix of sizes and tenures and all redeveloped areas will be capable of designation as conservation areas in the future. Public realm improvements that create a stronger sense of place will have been implemented in Golborne Road, Kensal Newtown and Meanwhile Gardens."

3.3.2 The site has an area of 5.3 hectares. The land use allocation is:

a. a minimum of 538 affordable dwelling units;
b. a minimum of 150 private dwellings;
c. the replacement of an improved Athlone Gardens, measuring 9,186m^2 (GEA), including the area of the existing ball court;
d. the refurbishment or replacement of an improved community facility and scope for its enlargement, including the provision of the existing community and leisure facilities currently provided;
e. A1 to A5 uses in the order of approximately 2,000m^2, providing these animate the street frontage, extend the retail offer along Portobello Road and help reconnect the link from Portobello Road and/or Wornington Road to Ladbroke Grove with no one unit being over 400m^2 (GEA);
f. on-site renewable energy sources to serve the site with the potential to contribute to the heat and energy demand of the wider community as part of a district heat and energy network;
g. replacement of the storage used by market traders in Munro Mews;
Healthcare and education facilities are part of the Infrastructure and Planning Contributions.

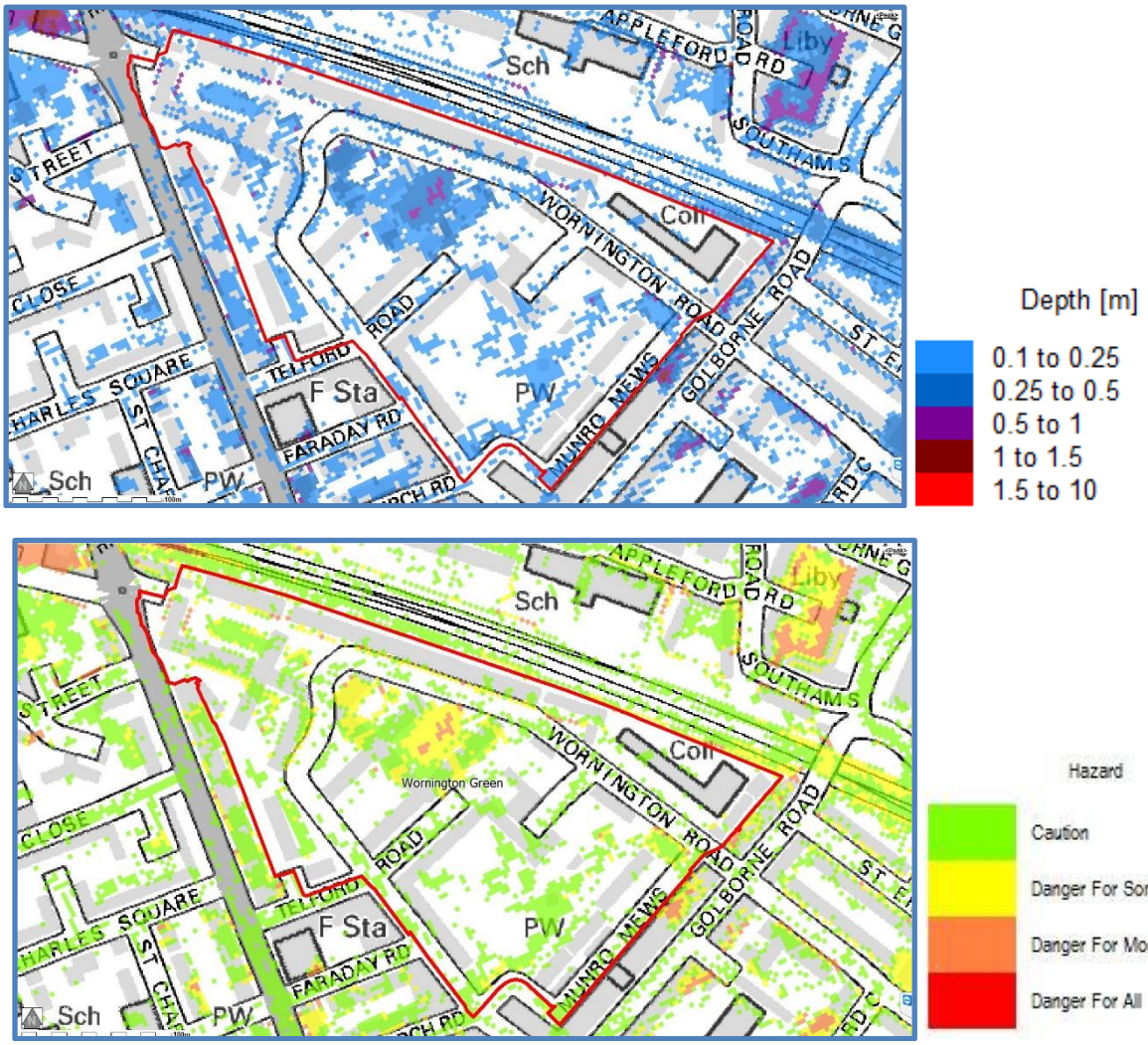


Figure 5: Surface Water flood depth (top) and flood hazard (below) of the Wornington Green strategic site.

3.3.3 In this case, surface water can be seen in different areas of the site after a 1 in 100 year event plus climate change (30%). However, the ponding is not very deep and only few small areas in the northwest have moderate or significant flood hazard rating (0.5-1m flood depth) with danger for some or most. The most vulnerable uses should be located in other areas of the site if possible and flood risk protection and mitigation measures should be implemented. The SFRA figures 14 and 16 show that the site falls within an area which is likely to have low susceptibility to groundwater flooding and no permeable deposits. Further assessments will be needed at planning application stage. Other sources of flood risk such as flooding from artificial structures (canal) are not anticipated but should be reviewed if relevant.

3.3.4 The land uses most vulnerable to flood risk are the residential dwellings, the healthcare and the education facilities which are considered as 'more vulnerable' under the flood risk vulnerability classification. The site falls within Flood Zone 1 (low risk of flooding) and it is outside a Critical Drainage Area. Therefore, the proposed development is compatible with the flood zone and the Sequential Test is deemed to be passed.

3.3.5 The Exception Test is not required, therefore the development is in an appropriate location under the NPPF flood risk policy. Although the site is not in a Critical Drainage Area, it is in close proximity to the North Kensington Critical Drainage Area and surface water run-off from the site could find a way to feed the Critical Drainage Area. It is therefore very important that surface water run-off is controlled and minimised as much as possible. Post-development greenfield run-off rates should be aimed at by developers. As the site is bigger than 1ha, a Flood Risk Assessment should be submitted to support any future planning application. This assessment should take into account the new climate change allowances and requirements, especially for surface water flooding.

3.4 CA3 LAND ADJACENT TO TRELLICK TOWER

SITE ALLOCATION AND CONSIDERATIONS

3.4.1 This site also falls within the Golborne place and it will help to realise the Council's vision for the place. It has an area of 0.77 hectares. The land use allocation is for a minimum of 60 residential units. Additional social and community uses, improvements to the public realm and open spaces around the site have also been identified as part of the Infrastructure and Planning Contributions.

FLOOD RISK ANALYSIS AND SEQUENTIAL TEST

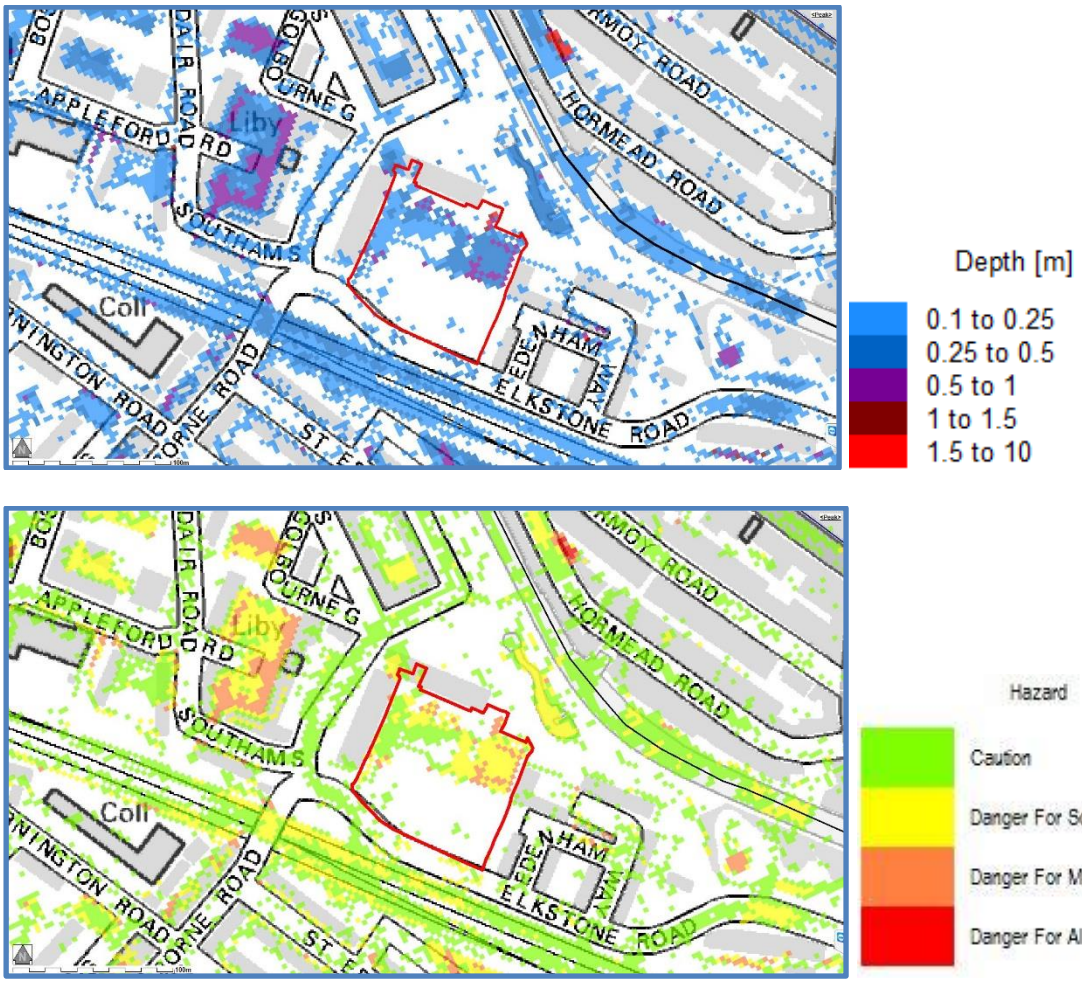


Figure 6: Surface Water flood depth (top) and flood hazard (below) of the Land Adjacent to Trellick Tower strategic site.

3.4.2 Surface water modelling ponding on the site during the 1 in 100 year rainfall event with an allowance for climate change (30%) is predicted in the northern half of the site. These areas of ponding occur in the lower elevations on the site. Surface water flooding on the site is associated with a moderate (danger for some) and significant (danger for most) hazard rating. The SFRA figures 14 and 16 show that the site falls within an area which is likely to have low susceptibility to groundwater flooding and no permeable deposits. Other sources of flood risk such as flooding from artificial structures (canal) are not anticipated but should be reviewed if relevant.

3.4.3 The land use most vulnerable to flood risk is the residential dwellings which are considered as ‘more vulnerable’ under the flood risk vulnerability classification. The site falls within Flood Zone 1 (low risk of flooding) and it is outside a Critical Drainage Area. Therefore, the proposed development is compatible with the flood zone and the Sequential Test is deemed to be passed. The Exception Test is not required, therefore the development is in an appropriate location under the NPPF flood risk policy. Although the site is not in a Critical Drainage Area, it is in close proximity to the North Kensington Critical Drainage Area and surface water run-off from the site could find a way to feed the Critical Drainage Area. It is therefore very important that surface water run-off is controlled and minimised as much as possible. Post-development greenfield run-off rates should be aimed at by developers. As the site is under 1ha, a Flood Risk Assessment is not required to support any future planning application. However, the site should assess the new climate change allowances and requirements, especially for surface water flooding.

3.5 CA4 EARL'S COURT EXHIBITION CENTRE

SITE ALLOCATION AND CONSIDERATIONS

3.5.1 This strategic site is within the Royal Borough's Earl's Court and West Kensington Opportunity Area and also falls within the Earl's Court Place. A Joint Opportunity Area Supplementary Planning Document has been produced and the site has outline planning permission. Within the Royal Borough planning permission has been granted for a mixed use development which includes:

- up to 930 residential units including affordable housing;
- on-site renewable energy sources;
- up to 10,132m^2 Class B1;
- 3,414m^2 retail;
- 7,381m^2 hotel; and,
- 6,067m^2 of education, culture, community and leisure floorspace.

3.5.2 The permission has been implemented and will take some 15 years to complete. The Council's vision for this place is: "By 2028 the former exhibition centre will be transformed into a vibrant new urban village, which reflects the crescents and squares nearby and links to a strengthened Earl's Court District centre and wider development sites in the London Borough of Hammersmith and Fulham. A new cultural offer, drawing upon the legacy of the Exhibition Centre will add to the activity and interest of the area and attract visitors from across the capital. Steps will have been taken to humanise the area's streetscape with improvements to Cromwell Road, Warwick Road and Earl's Court Road, and an investigation of the Earl's Court one-way system will have taken place with a view to its unlocking. New residential-led mixed use development along Warwick Road will further reinforce the new urban quarter. A linear park will provide a pedestrian route through the western Warwick Road sites linking to the Lost River Park on the Earl's Court development to the South. The park will also improve east west connections across the existing barrier of the railway line. The area will continue to offer a wide range of residential accommodation and will include community infrastructure to support local life".

3.5.3 The site is 7.43 hectares and the land use allocation is:

a. a minimum of 900 homes within the Royal Borough;
b. a minimum of 10,000m^2 of office floor space;
c. retail and other uses within the class of the Use Classes Order 1987 (as amended) to serve the day-to-day needs of the new development;
d. a significant cultural facility to retain Earl's Court's long standing brand as an important cultural destination, located on the area of the Opportunity Area nearest to public transport accessibility;
e. other non-residential uses required to deliver a sustainable and balanced mixed-use development, such as hotel and leisure uses;
f. social and community uses;

g. on-site waste management facilities to handle waste arising from the new uses of the site (including recycling facilities and/or anaerobic digestion), which may be provided within LBHF but must benefit development in the Royal Borough;
h. on-site renewable energy sources to serve the site with the potential to contribute to the heat and energy demand of the wider community as part of a district heat and energy network.
Additional new public open space, education facilities and improved pedestrian links are included in the Infrastructure and Planning Contributions.

FLOOD RISK ANALYSIS AND SEQUENTIAL TEST

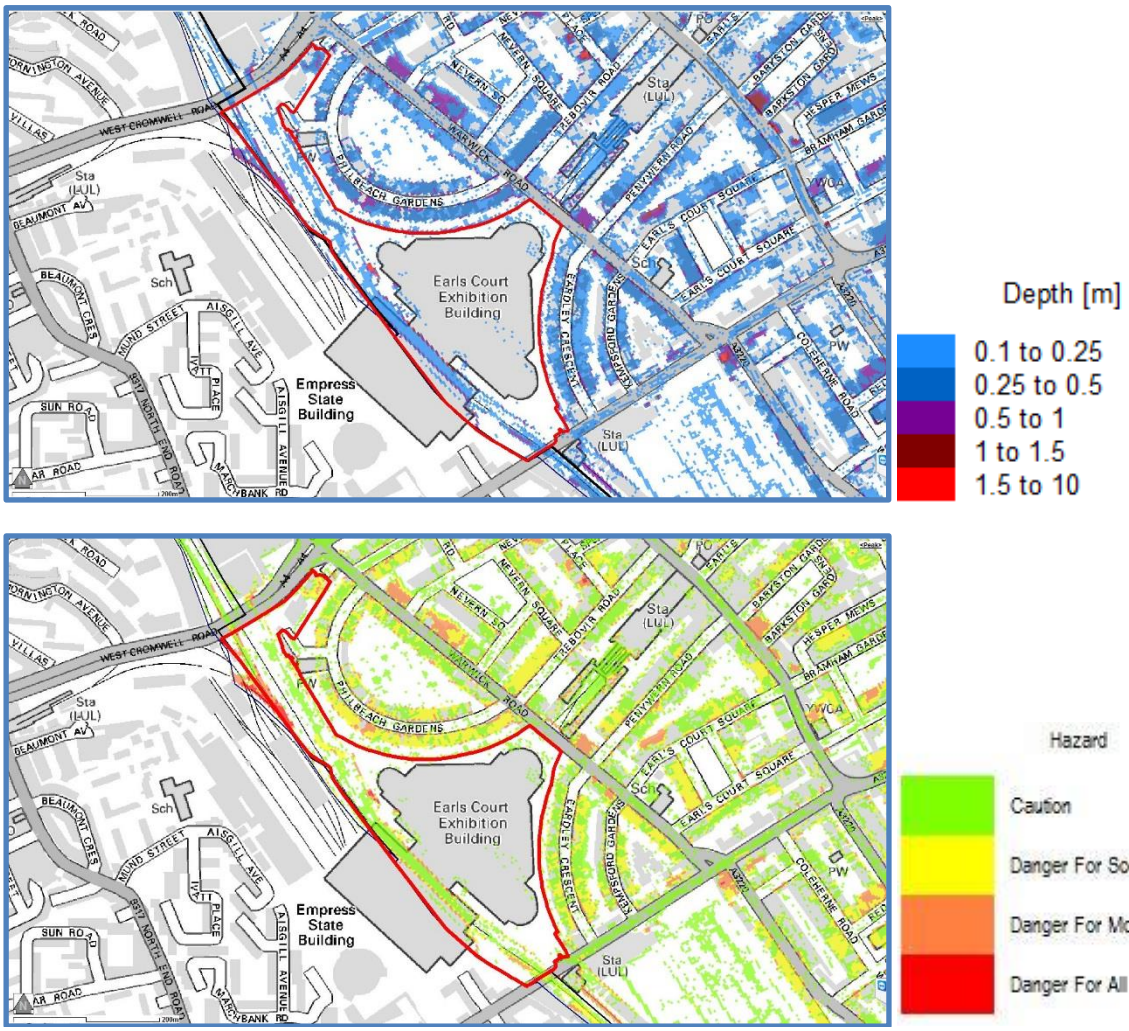


Figure 7: Surface Water flood depth (top) and flood hazard (below) of the Earl's Court Exhibition Centre strategic site.

3.5.4 In this case, predicted surface water, from the 1 in 100 year plus climate change (30%) scenario, can be seen in various parts of the site, mostly towards the western boundary, close to the railway line. Ponding does not seem very deep in most areas and the flood hazard is mostly moderate with danger for some. The SFRA figures 14 and 16 show that the site falls within an area which is likely to have very high susceptibility to groundwater flooding and permeable deposits. These flood risk issues should have been addressed in the flood risk assessment accompanying the planning application.

3.5.5 The site falls mainly within Flood Zone 1 (low risk of flooding) and it is outside a Critical Drainage Area. However, a small percentage of the site falls within Flood Zone 2 and 3 (north, west and south edges). The Sequential Test is therefore not deemed to have been passed. The relevant questions explained in section 2.2 (site analysis/methodology) need to be answered:

3.5.6 **Can the development be allocated in Flood Zone 1?** The only site which is at lower flood risk and has the size and the capacity to accommodate the allocated land use is the CA1 Kensal Canalside Opportunity Area. However, CA1 has a higher percentage of its area potentially affected by surface water flooding. Furthermore, the development proposed in Kensal is key to the opportunity area. Therefore, the development proposed for this strategic site cannot be accommodated in a site at lower flood risk.

3.5.7 **Can the development be allocated in Flood Zone 2? (lowest risk sites first) or within the lowest risk sites in Flood Zone 3?** No, there is no strategic site large enough in any other flood risk zones.

3.5.8 **Is the development appropriate in the remaining areas?** No, there are no other sites in the remaining areas allocated for this size of development. The Borough is highly built. Sites of this size do not normally come forward easily.

3.5.9 **Strategically review the need for the development using the IIA report.** This strategic site has the capacity to provide over 900 new dwellings, 10,000sq.m of office floor space, retail, social and community, cultural, leisure, and educational facilities. The site is key for the Earl's Court and West Kensington Opportunity Area which straddles the Royal Borough and the London Borough of Hammersmith and Fulham.

3.5.10 The IIA explains that the strategic sites in the central part of the Borough (which includes Earl's Court Exhibition Centre) will also provide socio-economic benefits. Regeneration benefits will be particularly important at the Earl's Court Exhibition Centre and Warwick Road Sites. In terms of housing, it is acknowledged that as these sites are located in the most expensive part of the Borough, they should be able to provide a high amount of affordable homes. This demonstrates the need for this development in this area.

EXCEPTION TEST

3.5.11 The two parts to the Test require proposed development to show that it will provide wider sustainability benefits to the community that outweigh flood risk, and that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The Exception Test should have been undertaken at planning application stage.

3.5.12 Part one of the test has been satisfied with the information provided in paragraph 3.7.6 and 3.7.10 as it is clear that this site will provide wider sustainability benefits that outweigh flood risk.

3.5.13 At planning application stage the Borough's planning authority should consider whether the use of planning conditions and/or planning obligations could make it do so otherwise the Exception Test will not be satisfied and planning permission should be refused.

3.5.14 In order to satisfy part 2 of the test, the developer must provide evidence to show that the proposed development would be safe and that any residual flood risk can be overcome to the satisfaction of the local planning authority, taking account of any advice from the Environment Agency. A Flood Risk Assessment is required to support the planning application. This assessment should take into account the new climate change allowances and requirements, especially for surface water flooding. The flood risk assessment should also demonstrate that the site will be safe and that people will not be exposed to hazardous flooding from any source. The following should be covered by the flood risk assessment:

- the design of any flood defence infrastructure;
- access and egress;
- operation and maintenance;
- design of development to manage and reduce flood risk wherever possible;
- resident awareness;
- flood warning and evacuation procedures; and
- any funding arrangements necessary for implementing the measures.

3.6 CA5 WARWICK ROAD SITES

SITE ALLOCATION AND CONSIDERATIONS

3.6.1 This strategic site falls within the Earl's Court Place and it will help to realise the Council's vision for this place. Physically separated from Earl's Court by the Cromwell Road these sites lie on the western boundary of the borough bordering the London Borough of Hammersmith and Fulham, adjacent to the West London line.

3.6.2 Originally, five sites in Warwick Road were allocated for a total of 1,550 residential units, including former Charles House to the north fronting onto Kensington High Street which has now been developed. Planning permission has been given for 1,178 homes to date. The site allocations also included the provision of a primary school (now complete), on site public open space, community sports hall, a swimming pool and funding for a number of streetscape improvements to Warwick Road and West Cromwell Road.

3.6.3 Both that were originally occupied by the Territorial Army (the Empress Telephone Exchange and Homebase) have got planning permission and the latter two are already under development.

3.6.4 The sites occupy 3.3 hectares and the land use allocation is:
a. a minimum of 1,219 total combined residential units across all four sites:
i) 281 residential units on the Former Territorial Army site
ii) 158 residential units on the Former Empress Telephone Exchange
iii) a minimum of 330 residential units on the former Homebase site
iv) a minimum of 450 residential units on the 100/100A West Cromwell Road site
b. On the northern three sites on-site public open space, including outdoor play space;
c on the 100/100A West Cromwell Road site leisure, social and community uses (Class D1), provision of car parking and open amenity space.
Social and community facilities, health facilities and pedestrian and cycle improvements have been identified in the Infrastructure and Planning Contributions.

FLOOD RISK ANALYSIS AND SEQUENTIAL TEST

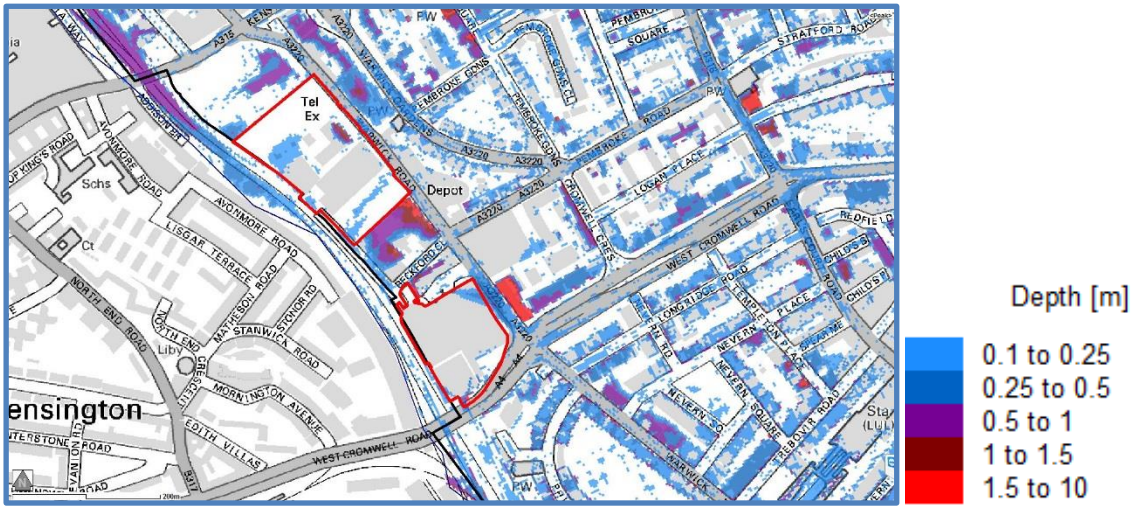


Figure 8: Surface Water flood depth (top) and flood hazard (below) of the Warwick Road Sites strategic site.

3.6.5 In this case, surface water ponding during the 1 in 100 year rainfall event plus climate change could be found in the northern site and a small area of the southern site. A small area in the northern site has a higher flood depth (0.5 to 1m) and significant flood hazard rating with danger for most. Robust flood risk mitigation and prevention measures should address flood risk in this area to ensure all uses are protected. The most vulnerable uses should be located away from those areas. The SFRA figures 14 and 16 show that the strategic site falls within an area which is likely to have very high susceptibility to groundwater flooding and permeable deposits. Further assessments will be needed at planning application stage.

3.6.6 The land uses most vulnerable to flood risk are the residential dwellings and the education facility which are considered as 'more vulnerable' under the flood risk vulnerability classification. The site falls within Flood Zone 1 (low risk of flooding) and it is outside a Critical Drainage Area. Therefore, the proposed development is compatible with the flood zone and the Sequential Test is deemed to be passed. The Exception Test is not required; therefore the development is in an appropriate location under the NPPF flood risk policy. As the site is bigger than 1ha, a Flood Risk Assessment should be submitted to support any future planning application. This assessment should take into account the new climate change allowances and requirements, especially for surface water flooding.

3.7 CA6 LOTS ROAD POWER STATION

SITE ALLOCATION AND CONSIDERATIONS

3.7.1 The Lots Road Power Station site falls within the Lots Road/World's End Place. The Council's vision for this Place is that by 2028, improvements to the built and natural environment will have transformed the area. The Lots Road Power Station development will have provided new housing, a new neighbourhood centre, offices, social and community facilities and mooring facilities. The Employment Zone will continue to function as a centre for innovation focusing particularly on art, architecture, antiques and interior design. Better pedestrian links from Lots Road to the World's End shops and to Imperial Wharf in the London Borough of Hammersmith and Fulham will have overcome the isolation of Lots Road and World's End. Connectivity to the riverside will have been enhanced by completing this section of the Thames Path and extending the use of the Cremorne railway bridge for pedestrians and cyclists

3.7.2 The Lots Road Power Station site occupies 1.77 hectares. Permission was granted in 2006 (and it is being implemented) for:

a. Flexible uses incorporating shops (A1), professional services (A2) or food and drink (A3): 1,029m^2;
b. Flexible uses incorporating shops (A1), professional services (A2), business (B1) or assembly and leisure (D2): 364m^2;
c. Business (B1): 3,499m^2;
d. Flexible uses incorporating non-residential uses (D1) or assembly and leisure (D2): 1,653m^2;
e. Housing: 420 dwellings, including 166 affordable units;
f. Open space;
g. Contribution towards parking facilities, bus stops, riverbus services, and travel plans;
h. Improvements to Chelsea Harbour Pier;
i. Road junction improvements;
j. Cycle and pedestrian improvements;
k. Streetscape improvements;
l. Community facilities;
m. Contribution towards improvements to Westfield Park;
n. Affordable housing provision;
o. Works and maintenance of Chelsea Creek;
p. Adherence to design quality standards.

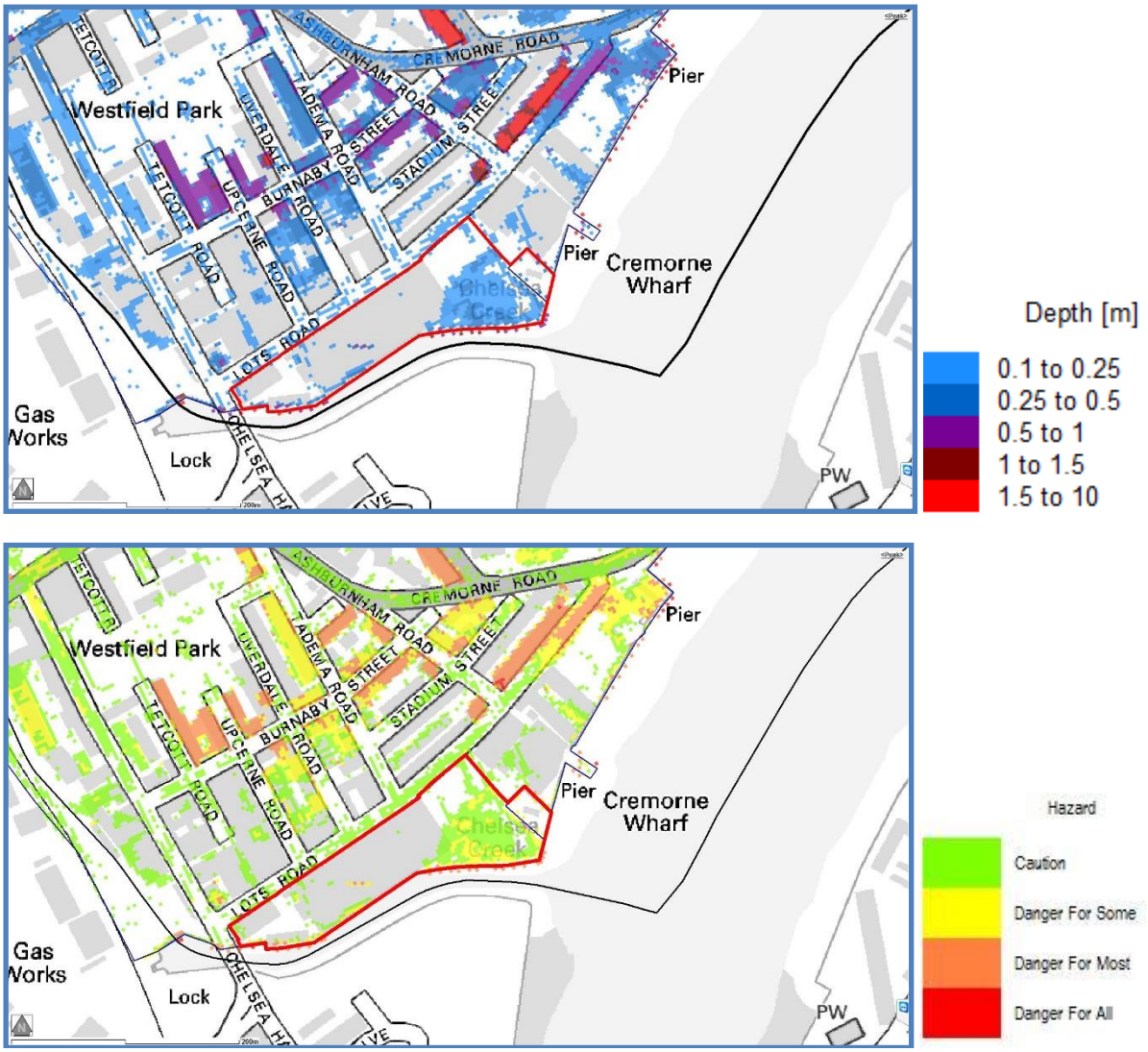


Figure 9: Surface Water flood depth (top) and flood hazard (below) of the Site at Lots Road Power Station strategic site.

3.7.3 Surface water can be seen mostly on the south east of the site, close to the River Thames. Ponding does not seem very deep and the flood hazard is moderate with danger for some. The SFRA figure 14 shows that the site falls within an area which is likely to have very high susceptibility to groundwater. However, figure 16 shows that only a small part of the site may have permeable deposits. These flood risk issues should have been addressed in the flood risk assessment accompanying the planning application.

3.7.4 The site falls in Flood Zone 3 (high risk of flooding) but it is outside a Critical Drainage Area. The Sequential Test is therefore not deemed to have been passed. The relevant questions explained in section 2.2 (site analysis/methodology) need to be answered:

3.7.5 **Can the development be allocated in Flood Zone 1?** There are no sites with a similar size located in areas at lower flood risk. The site allocation CA5 Warwick Road Sites is bigger in size and it is located at a lower flood risk although there are small areas which could potentially suffer from surface water flooding. The amount of

residential units proposed for this site is considerably higher. It will also provide much needed social and community facilities and open space. The scale of development feasible in Warwick Road Sites seems to be bigger than that for this site. Therefore, the development proposed for this strategic site cannot be accommodated in a site at lower flood risk.

3.7.6 **Can the development be allocated in Flood Zone 2? (lowest risk sites first) or within the lowest risk sites in Flood Zone 3?** No, there is no other strategic sites of a similar size in any other flood risk zones.

3.7.7 **Is the development appropriate in the remaining areas?** No, the development is not appropriate in any other similar sites in the remaining areas. The Borough is highly built. Sites of this size do not normally come forward easily.

3.7.8 **Strategically review the need for the development using the IIA report.** As explained in paragraph 3.7.5 this strategic site has a smaller size than Warwick Road Sites which will provide more much needed residential units and other facilities. Therefore, this development could not be accommodated in another site.

3.7.9 The IIA explains that the most southern sites: Chelsea Farmers' Market. Site at Lots Road and Lots Road Power Station, will offer substantive socio-economic benefits, access to services and facilities and housing. This demonstrates the need for this development in this area.

EXCEPTION TEST

3.7.10 The two parts to the Test require proposed development to show that it will provide wider sustainability benefits to the community that outweigh flood risk, and that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The Exception Test should have been undertaken at planning application stage.

3.7.11 Part one of the test has been satisfied with the information provided in paragraphs 3.7.5, 3.7.8 and 3.7.9 as it is clear that this site will provide wider sustainability benefits that outweigh flood risk.

3.7.12 At planning application stage the Borough's planning authority should consider whether the use of planning conditions and/or planning obligations could make it do so otherwise the Exception Test will not be satisfied and planning permission should be refused.

3.7.13 In order to satisfy part 2 of the test, the developer must provide evidence to show that the proposed development would be safe and that any residual flood risk can be overcome to the satisfaction of the local planning authority, taking account of any advice from the Environment Agency. As the site is over 1ha and in Flood Zone 3, a Flood Risk Assessment is required to support any future planning application. This assessment should take into account the new climate change allowances and requirements, especially for surface water flooding. The flood risk assessment should also demonstrate that the site will be safe and that people will not be exposed to hazardous flooding from any source. Due to the site's proximity to the river, the flood risk assessment should have also considered the consequences of a breach and/or

an overtopping of the defences as detailed in the SFRA. The following should be covered by the flood risk assessment:

- the design of any flood defence infrastructure;
- access and egress;
- operation and maintenance;
- design of development to manage and reduce flood risk wherever possible;
- resident awareness;
- flood warning and evacuation procedures; and
- any funding arrangements necessary for implementing the measures.

3.8 CA7 SITE AT LOTS ROAD

SITE ALLOCATION AND CONSIDERATIONS

3.8.1 The Site at Lots Road strategic site falls within the Lots Road/World's End Place so it will help to realise the Council's vision for the place. The Site at Lots Road occupies 0.5 hectares. The site is owned by the Council and the Council's ownership extends beyond the borough boundary into the London Borough of Hammersmith and Fulham. The larger part and existing buildings are within the Royal Borough of Kensington and Chelsea. The land use allocation is:

a. a minimum of 55 affordable extra care units (C2);
b. minimum of 4,000m^2 of commercial floorspace (A1 and B1);.

FLOOD RISK ANALYSIS AND SEQUENTIAL TEST

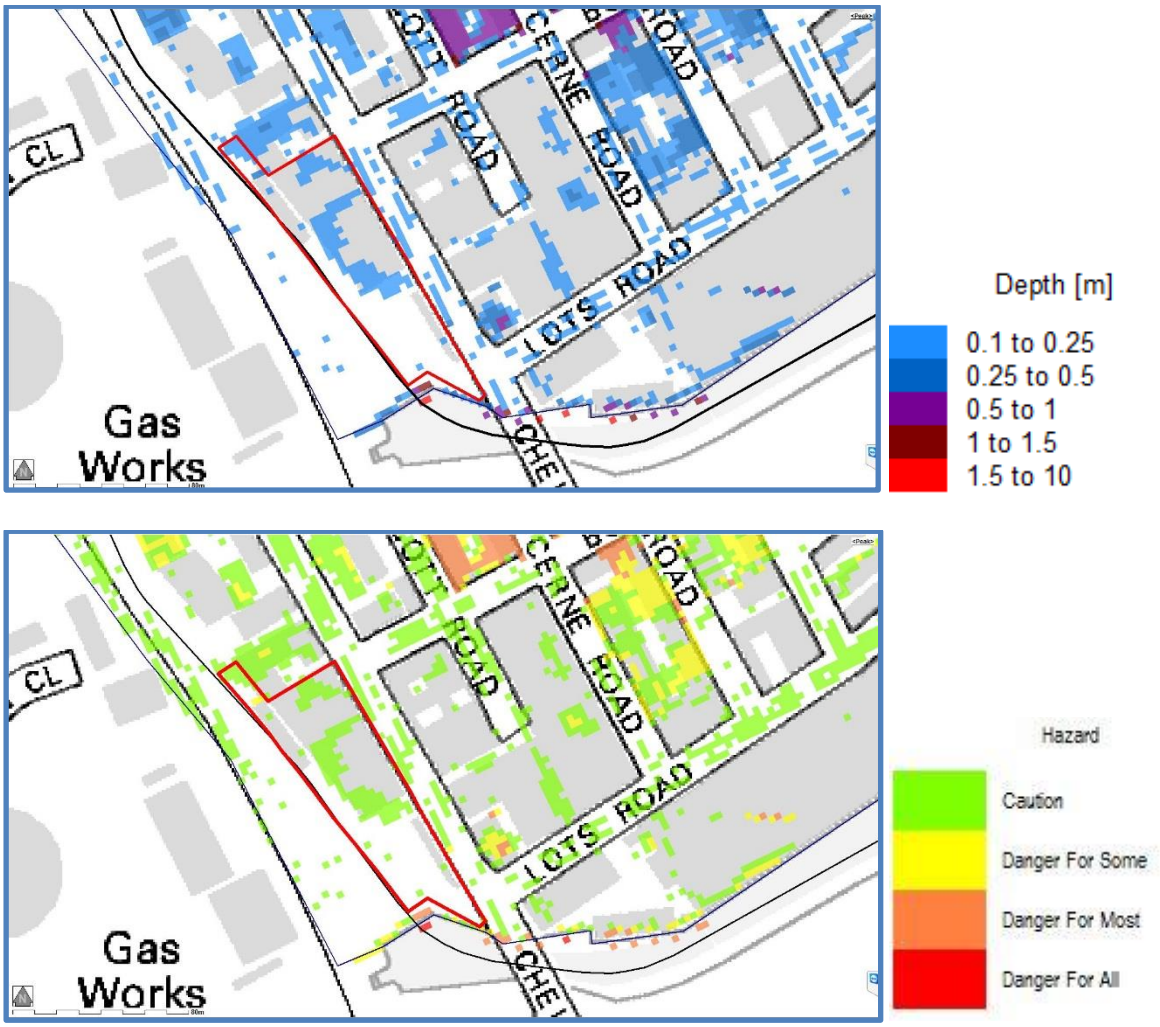


Figure 10: Surface Water flood depth (top) and flood hazard (below) of the Site at Lots Road strategic site.

3.8.2 Surface water ponding during a predicted 1 in 100 year event plus climate change (30%) can be seen in a small proportion of the site. Ponding seems quite shallow (up to 0.25m) and the flood hazard is low. The SFRA figure 14 shows that the site falls within an area which is likely to have very high susceptibility to groundwater. However, figure 16 shows that the site may not have permeable deposits. These flood risk issues should be investigated at planning application stage.

3.8.3 The site falls in Flood Zone 3 (high risk of flooding) but it is outside a Critical Drainage Area. The Sequential Test is therefore not deemed to have been passed. The relevant questions explained in section 2.2 (site analysis/methodology) need to be answered:

3.8.4 **Can the development be allocated in Flood Zone 1?** The only site which is at lower flood risk and has a similar size is the CA3 Land Adjacent to Trellick Tower. The development proposed in Land Adjacent to Trellick Tower will provide a minimum of 60 residential units, which is a similar number to that proposed in this site. Additional social and community uses, improvements to the public realm and open spaces are also proposed for the Land Adjacent to Trellick Tower. However, the Site at Lots Road will also provide a very large amount of commercial floorspace which will not be provided otherwise and which is key for the area. Therefore, the development proposed for this strategic site cannot be accommodated in a site at lower flood risk.

3.8.5 **Can the development be allocated in Flood Zone 2? (lowest risk sites first) or within the lowest risk sites in Flood Zone 3?** No, there is no other strategic sites of a similar size in any other flood risk zones.

3.8.6 **Is the development appropriate in the remaining areas?** No, the development is not appropriate in any other similar sites in the remaining areas. The Borough is highly built. Sites of this size do not normally come forward easily.

3.8.7 **Strategically review the need for the development using the IIA report.** As explained in paragraph 3.8.4 this strategic site has a similar size to Land Adjacent to Trellick Tower and, although it will provide a similar number of residential units, it will also provide other uses much needed in the north of the Borough. Furthermore, Site at Lots Road will deliver commercial floorspace which is very important for this area.

3.8.8 The IIA explains that the most southern sites including the Site at Lots Road will offer substantive socio-economic benefits, access to services and facilities and housing. On the other hand, the strategic sites in the central part of the Borough provide similar socio-economic benefits and regeneration benefits which will be particularly important at the Earl's Court Exhibition Centre and Warwick Road Sites. Also, in terms of housing, it is acknowledged that as these sites are located in the most expensive part of the Borough, they should be able to provide a high amount of affordable homes.

EXCEPTION TEST

3.8.9 The two parts to the Test require proposed development to show that it will provide wider sustainability benefits to the community that outweigh flood risk, and that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The Exception Test should be undertaken at planning application stage.

3.8.10 Part one of the test has been satisfied with the information provided in paragraph 3.8.4, 3.8.7 and 3.8.8 as it is clear that this site will provide wider sustainability benefits that outweigh flood risk.

3.8.11 At planning application stage the Borough's planning authority should consider whether the use of planning conditions and/or planning obligations could make it do so otherwise the Exception Test will not be satisfied and planning permission should be refused.

3.8.12 In order to satisfy part 2 of the test, the developer must provide evidence to show that the proposed development would be safe and that any residual flood risk can be overcome to the satisfaction of the local planning authority, taking account of any advice from the Environment Agency. As the site is over 1ha and falls within Flood Zone 3, a Flood Risk Assessment is required to support any future planning application. This assessment should take into account the new climate change allowances and requirements, especially for surface water flooding. The flood risk assessment should also demonstrate that the site will be safe and that people will not be exposed to hazardous flooding from any source. Due to the site's proximity to the river, the flood risk assessment should also consider the consequences of a breach and/or an overtopping of the defences as detailed in the SFRA. The following should be covered by the flood risk assessment:

- the design of any flood defence infrastructure. The FRA must demonstrate that the lifetime of the flood defence is commensurate with the lifetime of the development. Any remedial works identified within the FRA must be carried out prior to any occupation of the site.
- Access and egress;
- operation and maintenance;
- design of development to manage and reduce flood risk wherever possible;
- resident awareness;
- flood warning and evacuation procedures; and
- any funding arrangements necessary for implementing the measures.

3.9 CA8 HARRINGTON ROAD

SITE ALLOCATION AND CONSIDERATIONS

3.9.1 The Harrington Road strategic site falls within the South Kensington Place. The Council's vision for this place is that it will remain a premier public cultural destination – the home of science, arts and inspiration, and a district town centre, recognising that on occasions reconciling these two roles can be challenging but a balance will have been struck. All the great institutions have, or are developing, alternative sites and the Council will act to ensure they continue to regard South Kensington as their natural 'home' in order to protect and enhance this extraordinary cluster of institutions.

3.9.2 The site is 0.21 hectares and the land use allocation is for a minimum of 50 residential units.

FLOOD RISK ANALYSIS AND SEQUENTIAL TEST

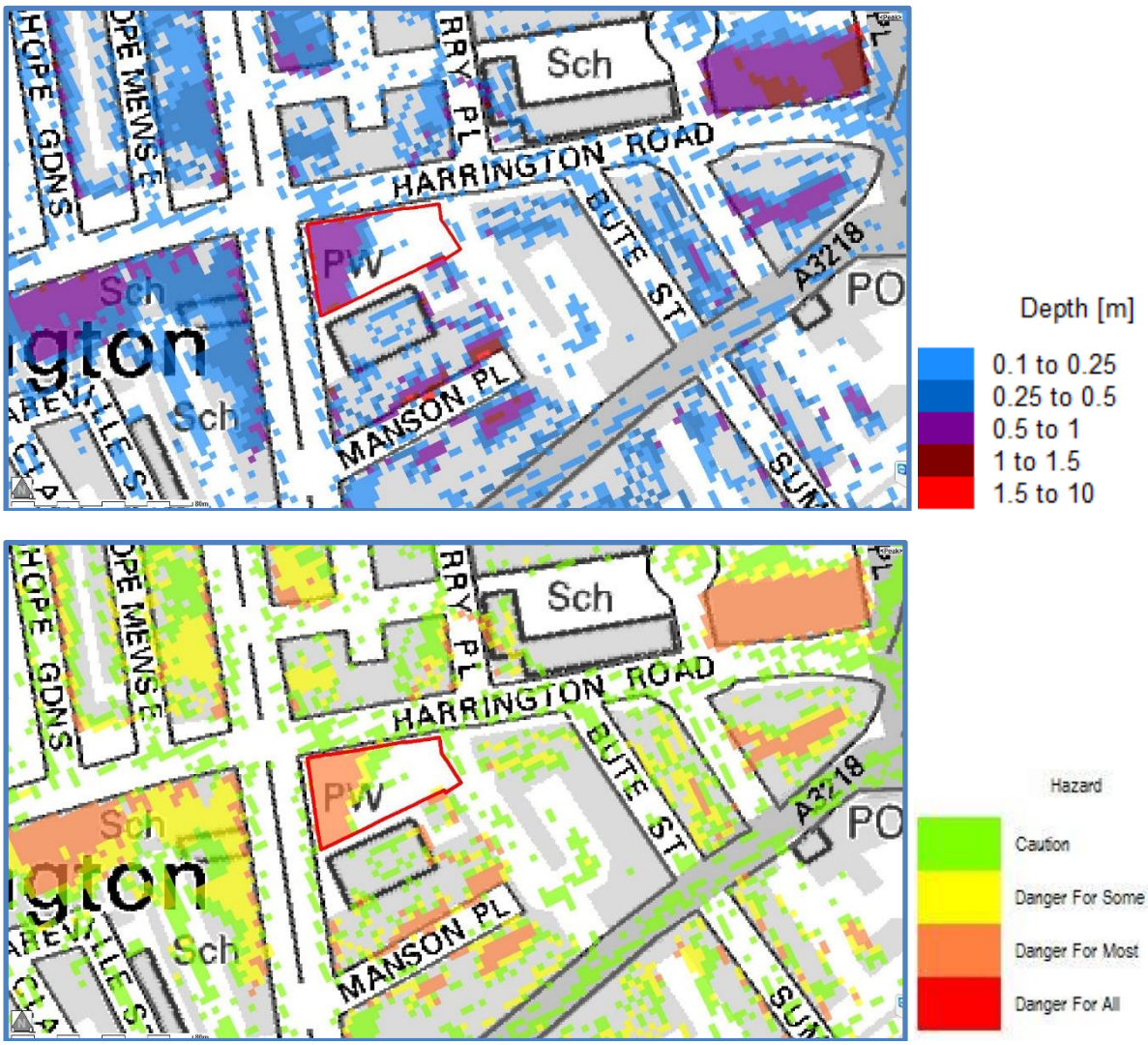


Figure 11 Surface Water flood depth (top) and flood hazard (below) of the Harrington Road strategic site.

3.9.3 For the 1 in 100 year rainfall event plus climate change (30%) surface water ponding on the site could be found in over a third of the site, concentrated on the western side. The ponding in this area can reach up to 1m of depth and it has significant flood hazard rating associated, with danger for most. The most vulnerable uses should be located away from those areas if possible. Robust flood risk mitigation and prevention measures should address flood risk in this area to ensure that all uses are protected. The SFRA groundwater figures 14 and 16 show that the site falls within an area which is likely to have a very highly susceptibility to groundwater flooding and permeable deposits. Further assessments will be needed at planning application stage.

3.9.4 The land use most vulnerable to flood risk are the residential dwellings which is considered as 'more vulnerable' under the flood risk vulnerability classification. The site falls within Flood Zone 1 (low risk of flooding) and it is outside a Critical Drainage Area. Therefore, the proposed development is compatible with the flood zone and the Sequential Test is deemed to be passed. The Exception Test is not required; therefore, the development is in an appropriate location under the NPPF flood risk policy. However, it should be noted that the site is in in the boundary with the Kensington Critical Drainage Area and surface water run-off from the site could find a way to feed the Critical Drainage Area. It is therefore very important that surface water run-off is controlled and minimised as much as possible. Post-development greenfield run-off rates should be aimed at by developers. As the site is smaller than 1ha, a Flood Risk Assessment is not required to support any future planning application. However, the site should assess the new climate change allowances and requirements, especially for surface water flooding.

3.10 CA9 CHELSEA FARMER'S MARKET

SITE ALLOCATION AND CONSIDERATIONS

3.10.1 The Chelsea Farmer's Market strategic site falls within the Sloane Square/King's Road Place. The Council's vision for the site is the following: "The rich iconic brand and history of King's Road will have been consolidated to ensure it remains one of London's most vibrant shopping streets, containing a lively and diverse mix of shops, restaurants, and world-class cultural attractions. It will continue to be a place where one can shop in both independent boutiques and chain stores; a place to enjoy, to promenade, a place which meets the day-to-day needs of local people; and a place to experience some of the best theatre, concert, museum and gallery events that London has to offer. Work will have commenced on a new Crossrail 2 station that will provide Chelsea with extra underground capacity that will be required in this part of the network, help to maintain the vitality and viability of the area's businesses, reduce traffic congestion along the King's Road and improve air quality".

3.10.2 The site is 0.5 hectares and the land use allocation is:

a. a minimum of 50 residential units;
b. retail units at ground level facing 151 Sydney Street.
c. Creation of a new public square facing 151 Sydney Street and linking to Dovehouse Green.

FLOOD RISK ANALYSIS AND SEQUENTIAL TEST

Figure 12 Surface Water flood depth (top) and flood hazard (below) of the Chelsea Farmer's Market strategic site.

3.10.3 Surface water ponding on the site during the 1 in 100 year rainfall event plus climate change (30%) could occur in the north east and west of the site. The deepest ponding area is in the north east where water can reach up to 1.5m depth. Surface water flooding on the site is associated with moderate (ranger for some) and significant (danger for most) hazard rating. The percentage of the site at risk of flooding is relatively small and the least vulnerable uses should be located when possible outside the high risk areas. Robust flood risk mitigation and prevention measures should address flood risk to ensure all uses are protected. The Strategic Flood Risk Assessment groundwater figures 14 and 16 show that the site falls within an area which is likely to have very high susceptibility to groundwater flooding and permeable deposits. Further assessments will be needed at planning application stage.

3.10.4 The land use most vulnerable to flood risk is residential considered as 'more vulnerable' under the flood risk vulnerability classification. The site falls within Flood Zone 1 (low risk of flooding) and it is outside a Critical Drainage Area. Therefore, the proposed development is compatible with the flood zone and the Sequential Test is deemed to be passed. The Exception Test is not required; therefore, the development is in an appropriate location under the NPPF flood risk policy. However, it should be noted that the site is in close proximity to the Sloane Square Critical Drainage Area and surface water run-off from the site could find a way to feed the Critical Drainage Area. It is therefore very important that surface water run-off is controlled and minimised as much as possible. Post-development greenfield run-off rates should be aimed at by developers. As the site is smaller than 1ha, a Flood Risk Assessment is not required to support any future planning application. However, the site should assess the new climate change allowances and requirements, especially for surface water flooding.

4 CONCLUSION

4.0.1 This report shows how the 9 strategic sites allocated in the Local Plan Partial Review have been sequentially tested to ensure that flood risk is assessed and development is safe and steered towards areas at lower risk of flooding.

4.0.2 Most of the sites are located in Flood Zone 1 (low risk of flooding from the rivers and the sea) and they are outside Critical Drainage Areas (higher risk of surface and sewer water flooding). Three of the sites (CA4 Earl's Court, CA6 Lots Road Power Station and CA7 Site at Lots Road) are located at areas of higher risk, either at risk from the rivers and the sea or in Critical Drainage Areas.

4.0.3 For these three strategic sites the Sequential Test is was not deemed to have been passed. The relevant questions explained in section 2.2 (methodology) were answered:

- Can the development be allocated in Flood Zone 1?
- Can the development be allocated in Flood Zone 2? (lowest risk sites first) or within the lowest risk sites in Flood Zone 3?
- Is the development appropriate in the remaining areas?
- Strategically review the need for the development using the IIA report.

4.0.4 The need for this development in these sites was demonstrated through the review of the Integrated Impact Assessment. The need to satisfy both parts of the Exception Test was also explained and assessed for each of these sites.

4.0.5 It was concluded that these sites could not be located in areas at lower flood risk due to the sites' capacity and the need of development in those areas. It was demonstrated that the wider environmental, economic, and social benefits to the community provided by these sites in their current locations outweigh flood risk. When a planning application is put forward for these sites, a Flood Risk Assessment and an Exception Test should support the application to show that development will be safe for its lifetime, without increasing flood risk elsewhere and where possible it will reduce flood risk overall.

5 GLOSSARY

mAOD: meters above ordnance datum

DCLG: Department for Communities and Local Government

EA: Environment Agency

GLA: Greater London Authority

IIA: Integrated Impact Assessment (which includes the Sustainability Appraisal)

LBHF: London Borough of Hammersmith and Fulham

MMO: Marine Management Organisation

NPPF: National Planning Policy Framework

NPPG: National Planning Practice Guidance

RBKC: Royal Borough of Kensington and Chelsea

RFRA: Regional Flood Risk Appraisal

SPD: Supplementary Planning Document

SuDS: Sustainable Drainage Systems

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