



Local Plan Partial Review – Publication Policies
Policy Formulation Report – February 2017
Flooding and Drainage



THE ROYAL BOROUGH OF
KENSINGTON
AND CHELSEA

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1. INTRODUCTION

1.1 LOCAL PLAN PARTIAL REVIEW

- 1.1.1 The Council is undertaking a Partial Review of its existing Local Plan to ensure it is up-to-date and fit-for-purpose.
- 1.1.2 The Local Plan Partial Review covers the topics which have not already been subject to recent reviews since the existing Local Plan was adopted by the Council in 2010 (then known as the Core Strategy). As part of this, the topic of **flooding and drainage** needs reviewing.
- 1.1.3 This Policy Formulation Report has been written to explain the reasoning behind the **flooding and drainage** Publication Policies consultation document to a level of detail which cannot be included in that document itself.

1.2 FLOODING AND DRAINAGE

- 1.2.1 This topic of the Local Plan Partial Review relates primarily to the existing Local Plan Policy CE2 Flooding of Chapter 36 Respecting Environmental Limits.
- 1.2.2 The issues which the Council considers the Local Plan Partial Review needs to address are:
- **Issue 1:** Flood Risk
 - **Issue 2:** Surface Water run-off and SuDS
 - **Issue 3:** Water Infrastructure Projects

2. FLOODING AND DRAINAGE

2.1 INTRODUCTION

2.1.1 The Strategic Flood Risk Assessment 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.

2.1.2 It is important to note the interaction of rainfall and 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.

2.1.3 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.

2.2 LEGISLATION, POLICY AND GUIDANCE CONTEXT

NATIONAL

2.2.1 Since the Council last reviewed the flooding Local Plan policy as part of the Core Strategy (2010) there have been numerous changes in the legislative and policy framework at national, regional and local levels which are explained in the following paragraphs.

COUNCIL DUTIES AS A LEAD LOCAL FLOOD AUTHORITY

2.2.2 The Flood and Water Management Act 2010 and the Flood Risk Regulations 2009 placed new duties on Councils. As a Lead Local Flood Authority (LLFA), the Council has a responsibility for leading the co-ordination of local flood risk management within the Borough. This includes ensuring that flood risks from local

sources, including surface water runoff, groundwater and ordinary watercourses and their interactions, are identified and managed. The Council has a duty, under Section 9 of the Flood and Water Management Act 2010, to put in place a Local Flood Risk Management Strategy (LFRMS) to manage all sources of flood risks consistent with a risk management approach. The Council adopted the LFRMS in July 2015. The review of the current flooding policy needs to consider the Council's responsibilities as an LLFA and the objectives of the LFRMS.

PROVISION OF SUSTAINABLE DRAINAGE SYSTEMS (SUDS) AND THE LLFA STATUTORY CONSULTEE ROLE

- 2.2.3 On the 18th December 2014, the Government published a written statement to Parliament explaining changes to the planning system which took effect on the 6th April 2015. The written statement represents Government planning policy with similar weight to the National Planning Policy Framework (NPPF) and so is capable of being a significant material consideration in determining planning applications.
- 2.2.4 The statement explains that local planning policies and decisions on planning applications relating to major development (developments of 10 homes or more and to major commercial development) should ensure that sustainable drainage systems (SuDS) for the management of run-off are put in place, unless demonstrated to be inappropriate.
- 2.2.5 Local planning authorities should consult the LLFA on the management of surface water; satisfy themselves that the proposed minimum standards of operation are appropriate and ensure through the use of planning conditions or planning obligations that there are clear arrangements in place for ongoing maintenance over the lifetime of the development. The SuDS should be designed to ensure that the maintenance and operation requirements are economically proportionate. The LLFA became a statutory consultee on planning applications in April 2015.

HOUSING AND PLANNING ACT 2016 AND THE NATIONAL FLOOD RESILIENCE REVIEW 2016

- 2.2.6 The Housing and Planning Act 2016 explains that the Secretary of State must carry out a review of planning legislation, government planning policy and local planning policies concerning sustainable drainage in relation to the development of land in England (section 171). This is reinforced in the National Flood Resilience Review as it commits the Department for Communities and Local Government, the Department for Environment, Food and Rural Affairs, the Environment Agency and key stakeholders to carry out the review. This will make a constructive contribution to the work of the Adaptation Sub-Committee of the Committee on Climate Change and inform their 2017 progress update on the National Adaptation Plan.

NATIONAL PLANNING POLICY FRAMEWORK (NPPF)

- 2.2.7 The NPPF explains that Councils should adopt proactive strategies to mitigate and adapt to climate change, taking full account of flood risk, coastal change and water supply and demand considerations (paragraph 94). It also states that sustainable development should not increase flood risk elsewhere and gives priority of the use of sustainable drainage systems (paragraph 103).

NPPG: FLOOD RISK AND COASTAL CHANGE

- 2.2.8 The National Planning Practice Guidance (NPPG) on Flood Risk and Coastal Change has been updated (March 2015) to include information about involving the LLFA (chapter 16) and the importance of SuDS (chapter 21). Table 2 of the guidance shows the classification of land uses in relation to flood risk vulnerability as essential infrastructure, highly vulnerable, more vulnerable, less vulnerable and water compatible development. Table 3 explains the relation between land uses vulnerability and their compatibility with flood zones. This could be taken into consideration when addressing flood risk in the Council's designated Critical Drainage Areas.

ENGLISH INSHORE AND OFFSHORE WATERS PLAN

- 2.2.9 The English Inshore and Offshore Waters Plan explains how marine plans apply to the marine sector and highlights policies that apply to the area. The Marine Management Organisation's guidance explains marine planning, compares land-use and marine planning and aims to inform plans and strategies in understanding the important links across the land and sea.

THE CIRIA SUDS MANUAL

- 2.2.10 The Construction Industry Research and Information Association (CIRIA) SuDS Manual gives detailed advice regarding SuDS, the need for SuDS and provision in different environments and the process to follow to ensure successful implementation. Chapter 10, Designing for urban areas is particularly relevant for this Borough.

REGIONAL

THE LONDON PLAN

- 2.2.11 Policy 5.13 of the London Plan states that:

Development should utilise sustainable urban drainage systems (SUDS) unless there are practical reasons for not doing so, and should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible in line with the following drainage hierarchy:

1. Store rainwater for later use
2. Use infiltration techniques, such as porous surfaces in non-clay areas
3. Attenuate rainwater in ponds or open water features for gradual release
4. Attenuate rainwater by storing in tanks or sealed water features for gradual release
5. Discharge rainwater direct to a watercourse
6. Discharge rainwater to a surface water sewer/drain
7. Discharge rainwater to the combined sewer

Drainage should be designed and implemented in ways that deliver other policy objectives of the Plan including water use efficiency and quality, biodiversity, amenity and recreation.

- 2.2.12 Other London Plan policies relevant to flood risk and drainage are: Policy 5.10 Urban greening, Policy 5.11 Green roofs and development site environs, Policy 5.12 Flood risk management, Policy 5.13 Sustainable drainage, Policy 5.14 Water quality and wastewater, and infrastructure, and Policy 5.15 Water use and supplies.

SUSTAINABLE DESIGN AND CONSTRUCTION SUPPLEMENTARY PLANNING GUIDANCE (SPG)

- 2.2.13 The Mayor of London's Sustainable Design and Construction SPG (April 2014) aims to maximise the opportunities to achieve greenfield run-off rates in development proposals.

THAMES ESTUARY 2100 PLAN

- 2.2.14 The Thames Estuary 2100 Plan sets out recommendations for flood risk management for London and the Thames estuary through to the end of the century and beyond.

THAMES RIVER BASIN MANAGEMENT PLAN

- 2.2.15 The Thames River Basin Management Plan provides a framework for protecting and enhancing the benefits provided by the water environment. To achieve this, and because water and land resources are closely linked, it also informs decisions on land-use planning.

LOCAL

THAMES ESTUARY 2100 LOCAL COUNCIL BRIEFING DOCUMENT – ROYAL BOROUGH OF KENSINGTON AND CHELSEA

- 2.2.16 This briefing document explains the Thames Estuary 2100 Plan requirements for tidal flood risk management in the Borough and provides information on how flood risk management can be integrated with other objectives to deliver a well-planned riverside.

EXISTING LOCAL PLAN POLICY

- 2.2.17 The existing Local Plan policy relating to flooding and drainage is set out below:

Policy CE2 Flooding

The Council will require development to adapt to fluvial flooding and mitigate the effects of, and adapt to, surface water and sewer flooding. To deliver this the Council will:

- a. resist vulnerable development, including self-contained basement dwellings, in Flood Risk Zone 3 as defined in the Strategic Flood Risk Assessment;
- b. require a site-specific Flood Risk Assessment, including an 'Exception Test' for all development in Flood Risk Zone 2 and 3 as defined in the Strategic Flood Risk Assessment, for sites in areas with critical drainage problems and for all sites greater than one hectare;

- c. where required undertake the 'Sequential Test' for planning applications within Flood Risk Zones 2 and 3, and for sites in areas with critical drainage problems;
- d. require development at risk from flooding in Flood Risk Zones 2 and 3, in areas with critical drainage problems, or sites greater than 1ha¹ to incorporate suitable flood defence or flood mitigation measures in accordance with the recommendations of the site-specific Flood Risk Assessment;
- e. require sustainable urban drainage (SUDs), or other measures, to reduce both the volume and the speed of water run-off to the drainage system ensuring that surface water run-off is managed as close to its source as possible in line with the hierarchy in the London Plan. In particular, major development must make a significant reduction in the current volume and speed of water run-off to the drainage system;
- f. resist impermeable surfaces in front gardens;
- g. require development adjacent to the Thames to be set back from the Thames flood defence to enable the sustainable and cost effective upgrade of flood defences over the next 50 to 100 years;
- h. require works associated with the construction of the Thames Tideway Tunnel to:
 - i. preserve or enhance the character or appearance of the Cheyne, Royal Hospital and Thames Conservation areas;
 - ii. preserve listed buildings and their settings, and Parks and Gardens of Special Historic Interest (i.e. the Royal Hospital grounds);
 - iii. not adversely impact on amenity;
 - iv. not compromise the future of Cremorne Wharf which is a Safeguarded Wharf.

2.2.18 Policy CL7 of the Local Plan states that the Council will require all basement development to:

- i. include a sustainable drainage system (SuDS), to be retained thereafter;
- j. include a minimum of one metre of soil above any part of the basement beneath a garden;
- n. be protected from sewer flooding through the installation of a suitable pumped device.

2.2.19 Policy CL7 is not up for review as part of the Local Plan Partial Review as it was recently adopted in 2015.

SUMMARY

Date	Document	Organisation
Apr 2010	The Flood and Water Management Act 2010 Makes provision about water and the management of risks in connection with flooding and coastal erosion	HM Government

¹ ha = hectare. 1ha = 10,000m²

Date	Document	Organisation
Dec 2009	The Flood Risk Regulations 2009 Places duties on the Environment Agency and Councils to prepare flood risk assessments, flood risk maps and flood risk management plans	HM Government
Dec 2014	Written statement to parliament: Sustainable drainage systems The provision of SuDS in major developments and the statutory role of the LLFA	DCLG
May 2016	Housing and Planning Act 2016 Refers to the review of Sustainable Drainage legislation and policy in relation to developments.	HM Government
Sep 2016	National Flood Resilience Review Commits to the review of Sustainable Drainage legislation and policy explained in the Housing and Planning Act 2016.	HM Government
Mar 2014	National Planning Policy Framework (NPPF) Paragraphs 94 (flood risk) and 103 (SuDS)	DCLG
Mar 2015	National Planning Practice Guidance (NPPG): Flood Risk and Coastal Change LLFA (chapter 16) and SuDS (chapter 21)	DCLG
Nov 2015	The CIRIA SuDS Manual Particularly chapter 10, Designing for urban areas	CIRIA
Nov 2012	Thames Estuary 2100 Plan Sets out recommendations for flood risk management for London and the Thames estuary through to the end of the century and beyond	Environment Agency
Apr 2015	TE2100 Local Council Briefing Document – Royal Borough of Kensington and Chelsea April 2015	Environment Agency
Feb 2016	Thames River Basin Management Plan Provides a framework for protecting and enhancing the benefits provided by the water environment	Environment Agency
Jun 2014	The English Inshore and Offshore Waters Plan Includes policies for the different sectors	Marine Management Organisation
Jun 2014	East Inshore and East Offshore marine plan areas Highlights policies that apply to a chosen area to inform strategies and plans	Marine Management Organisation

Date	Document	Organisation
Mar 2016	The London Plan Policy 5.10 Urban greening Policy 5.11 Green roofs and development site environs Policy 5.12 Flood risk management Policy 5.13 Sustainable drainage Policy 5.14 Water quality and wastewater, and infrastructure Policy 5.15 Water use and supplies	Mayor of London
Apr 2014	Sustainable Design and Construction SPG Aims to maximise the opportunities to achieve greenfield run-off rates in developments	Mayor of London

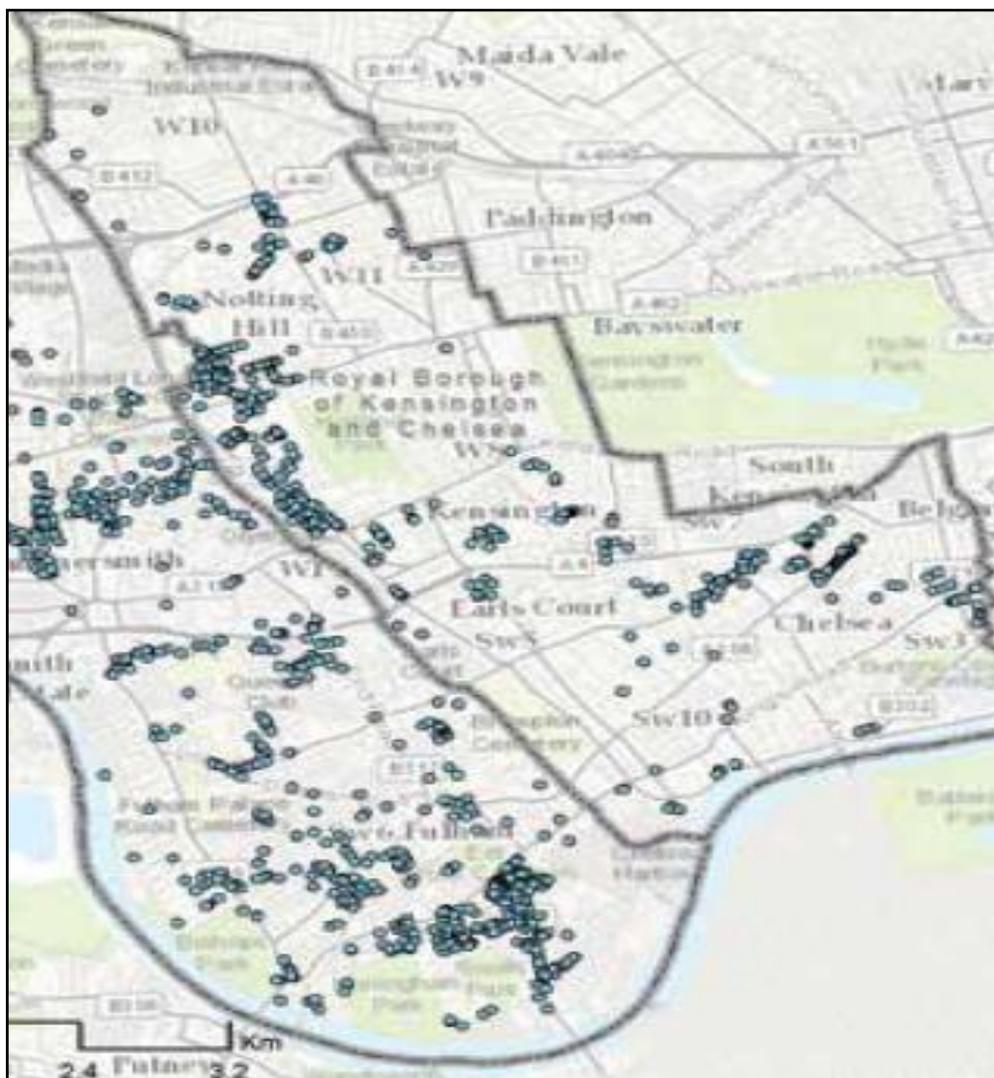


Figure 2.1: Map of properties where sewer flooding reported to Thames Water since 2007 (Source: Counters Creek Storm Relief Sewer Consultation – Phase 1; Thames Water, 2014²)

² [www.thameswater.co.uk/counterscreek/Custom consultation document.pdf](http://www.thameswater.co.uk/counterscreek/Custom%20consultation%20document.pdf)

2.3 EVIDENCE BASE

- 2.3.1 The evidence base documents give information on flood risk in the Borough and also update information since 2010 and explain how the Council and other partners are addressing flood risk.
- 2.3.2 Information goes from site specific (Sequential Test) to Borough wide (Strategic Flood Risk Assessment, Surface Water Management Plan, Air Quality and Climate Change Action Plan). Critical Drainage Areas (CDAs)³ have been identified in the Borough (as per paragraph 36.6.19 of the existing Local Plan). They are North Kensington CDA Holland Park CDA, Kensington CDA and Sloane Square CDA. This means that development proposals in these areas need to be supported by Flood Risk Assessments.
- 2.3.3 The evidence base also includes work done within different Council departments and external bodies (Local Flood Risk Management Strategy) and what to do in emergency situations (Multiagency flood plan and Thames breach flood plan). There is also information regarding a very specific type of development, basement development, which is particularly vulnerable to flooding (Residential Basement Study Report).
- 2.3.4 The Annual Monitoring Report 2016⁴ explains in sections 3 and 11 that there is an increasing recognition that a range of measures need to be taken, some as part of the development management process, but many of a larger scale through partnership working.

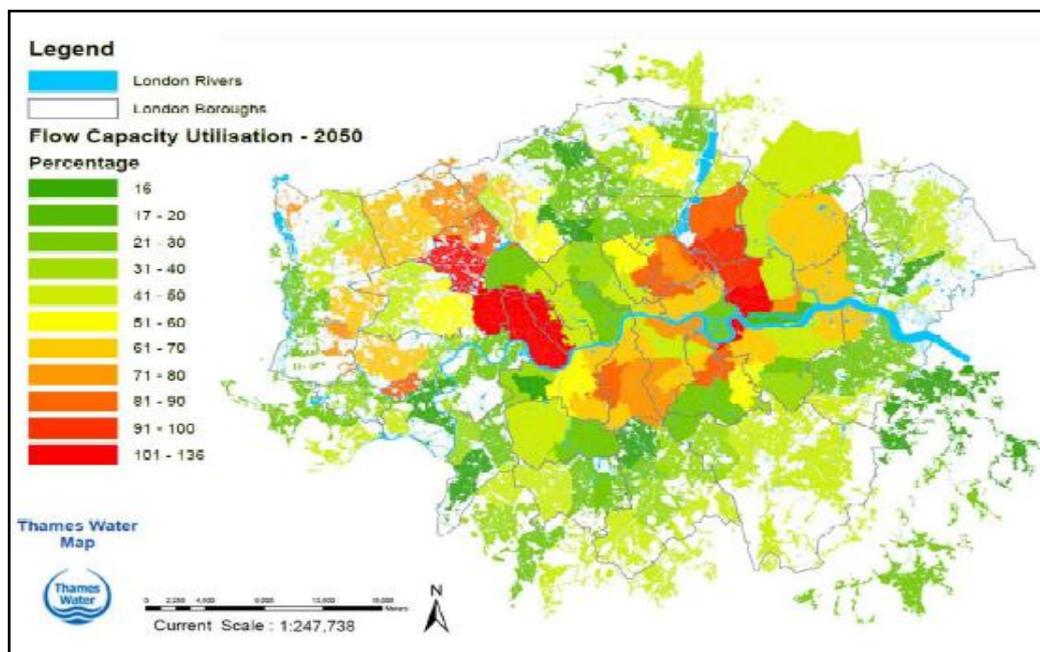


Figure 2.2: Modelled drainage and sewerage capacity to manage future population growth and climate change for the 2050s. Source: Thames Water.

³ www.rbkc.gov.uk/planning-and-building-control/planning-policy/flooding/critical-drainage-areas

⁴ www.rbkc.gov.uk/sites/default/files/atoms/files/Monitoring%20Report%202016.pdf

SUMMARY

Date	Document	Organisation
Mar 2014	Strategic Flood Risk Assessment Gives an overall assessment of flood risk in the Borough	RBKC
Mar 2014	Surface Water Management Plan Focuses on surface water and identifies and gives information on Critical Drainage Areas	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 A high level screening exercise with information on local flood risk from past and future flooding events	RBKC
Feb 2013	Multiagency flood plan Outlines the multi-agency response to a severe surface water flooding incident	RBKC
Feb 2013	Thames breach flood plan Provides a co-ordinated multi-agency response framework to mitigate the impact of a large scale Thames breach / overtopping flooding incident	RBKC
Dec 2012	Residential Basement Study Report Describes what needs to be considered as part of the planning process when basements are proposed	RBKC
Oct 2015	Air Quality and Climate Change Action Plan 2016 - 2021 Sets out the Council's objectives for the period 2008 to 2015. It advocates a range of measures for cutting emissions and reducing our energy bills	RBKC
Dec 2016	Monitoring Report 2016 Explains that a range of measures need to be taken as part of the development management process and at a larger scale.	RBKC
Feb 2017	Flood Risk Sequential Test	RBKC

INFRASTRUCTURE PROJECTS

THAMES TIDEWAY TUNNEL

- 2.3.5 The Thames Tideway Tunnel⁵ is referred to in Publication Policy CE2k of the Local Plan. The Thames Tideway Tunnel was granted a Development Consent Order in September 2014 by the relevant Secretaries of State. The Thames Tideway Tunnel will be built by a company called Bazalgette Tunnel Limited – the ‘infrastructure provider’ – and applications to discharge requirements (similar to conditions) will be submitted to the Council for approval throughout the construction phase (which is likely to last until 2022).



Figure 2.3: Visualisation of the Thames Tideway Tunnel site in Chelsea Embankment (Source: RBKC Local Impact Report, 2013⁶)

COUNTERS CREEK STORM RELIEF SEWER

- 2.3.6 Thames Water consulted on a project to increase the capacity of the Counters Creek sewer system⁷. Thames Water’s proposal includes four elements:
- A new storm relief sewer to increase the sewer capacity;
 - Sustainable drainage systems to reduce surface water run-off entering the sewers (a pilot study is proposed for Arundel Gardens);
 - Anti-flooding (‘FLIP’) devices to stop the sewers surcharging into lower properties; and,
 - Local sewer improvements.
- 2.3.7 The new storm relief sewer must go through several rounds of public consultation to ascertain the suitability of the proposed sites and to engage and inform residents. Once the public consultations on site options are finalised, Thames Water is expected to submit planning applications in 2017 to the affected Boroughs (RBKC and LBHF). If consent is granted, Thames Water aims to start construction in 2017 and finalise the scheme in 2020.

⁵ www.rbkc.gov.uk/planning-and-building-control/planning-policy/flooding/thames-tideway-tunnel-project

⁶ www.rbkc.gov.uk/warmdocs/RBKC%20Local%20Impact%20Report.pdf

⁷ www.rbkc.gov.uk/planning-and-building-control/planning-policy/flooding/counters-creek-project

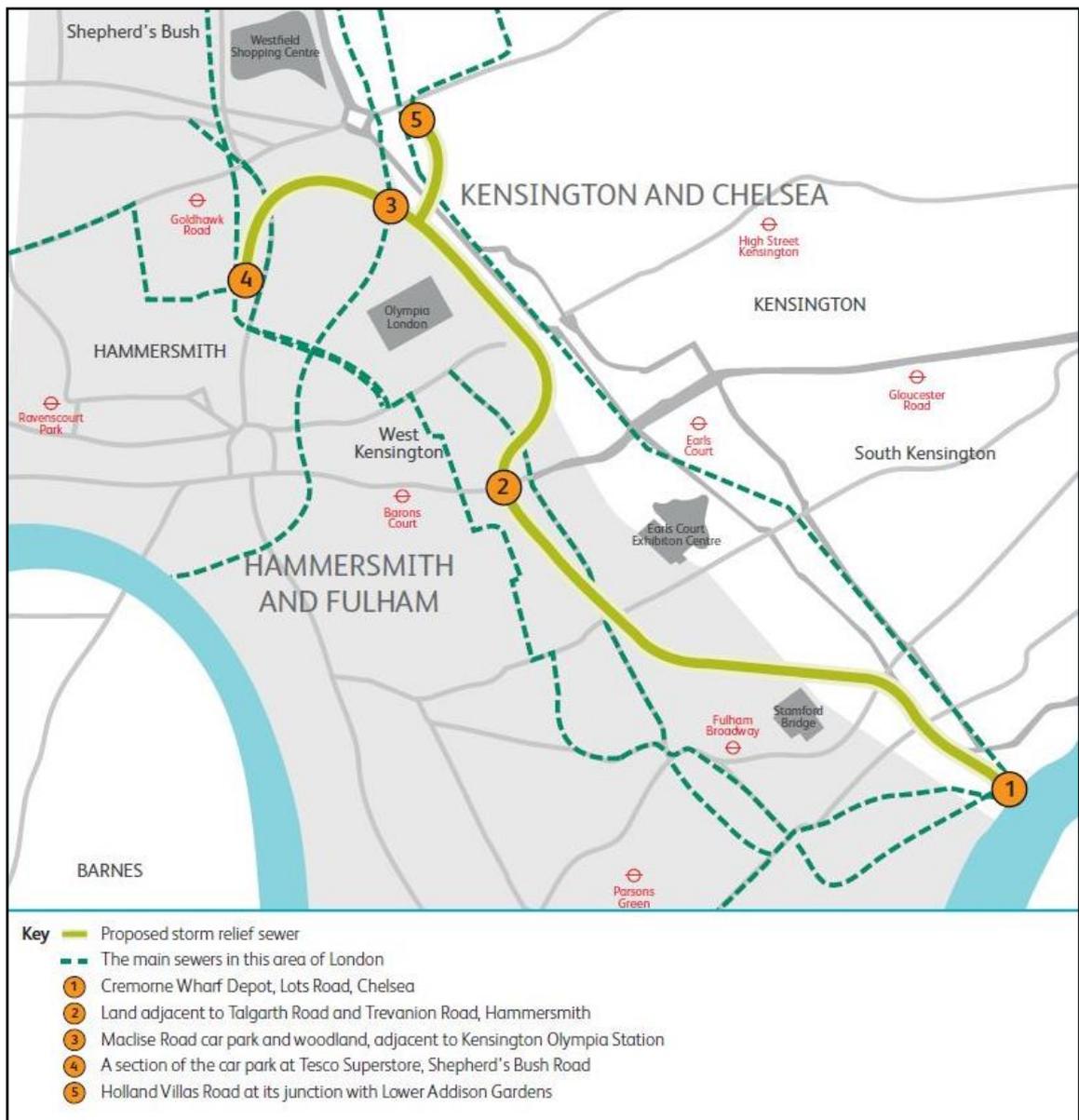


Figure 2.4: The proposed Counters Creek Storm Relief Sewer – colour lines represent sewers and green circles represent potential construction sites (Source: Consultation – Phase 2; Thames Water, 2016)

2.4 OPTIONS, CONSULTATION AND INTEGRATED IMPACT ASSESSMENT (IIA)

2.4.1 Alternative options were consulted on as part of the Issues and Options (December 2015) and Draft Policies (October 2016) consultation documents. The Consultation Schedules and Consultation Summaries for these are set out in the Consultation Statement published alongside the Publication Policies (January 2017) consultation document. The options considered through the consultations and as part of the Integrated Impact Assessment (IIA) are summarised below.:

2.4.2 The Council has considered the options particularly in light of the ‘tests of soundness’ which are set out in the NPPF:

- **Positively prepared** – the plan should be prepared based on a strategy which seeks to meet objectively assessed development and infrastructure requirements, including unmet requirements from neighbouring authorities where it is reasonable to do so and consistent with achieving sustainable development;
- **Justified** – the plan should be the most appropriate strategy, when considered against the reasonable alternatives, based on proportionate evidence;
- **Effective** – the plan should be deliverable over its period and based on effective joint working on cross-boundary strategic priorities; and
- **Consistent with national policy** – the plan should enable the delivery of sustainable development in accordance with the policies in the Framework.
(paragraph 182)

ISSUE 1: FLOOD RISK

ISSUE 1A: HIGHLY VULNERABLE USES IN CRITICAL DRAINAGE AREAS

2.4.3 The options and alternatives considered are:

Option	Status	Reason
1 To maintain the status quo and do not use the existing guidance and vulnerability classification to restrict highly vulnerable uses (self-contained basements) in Critical Drainage Areas.	Reasonable alternative	It is important to take into consideration that Critical Drainage Areas have been designated by the Council and have been considered as local flood risk areas in which Flood Risk Assessments are required. Therefore, it does not make sense not to use existing guidance for Flood Risk Zones as it does not reflect the existing evidence base.
2 Use the existing guidance and vulnerability classification to restrict highly vulnerable uses (self-contained basements) in Critical Drainage Areas.	Preferred option for Publication Policies	This policy will be consistent with national guidance and will reflect the status given to Critical Drainage Areas by the Council to reflect potential risk of flooding.

ISSUE 1B: SPECIFIC MEASURES TO ADDRESS FLOOD RISK IN CRITICAL DRAINAGE AREAS

2.4.4 The options and alternatives considered are:

Option	Status	Reason
1 To require specific measures when appropriate to address flood risk in Critical Drainage Areas and link with the Local Flood Risk Management Strategy Action Plan.	Preferred option for Publication Policies	This preferred option will reflect the new evidence base developed and may achieve other improvements to the local area.
2 To maintain the status quo and do not require specific measures to address flood risk in Critical Drainage Areas.	Reasonable alternative	Maintaining the status quo will not reflect the new evidence base that has been developed.
3 To only link with the Local Flood Risk Management Strategy Action Plan in Critical Drainage Areas to support applicants in delivering relevant projects.	Preferred option for Publication Policies	Linking it only with the Local Flood Risk Management Strategy may not lead to site-specific measures, however, this could be added to the final policy wording to help address cumulative impact and lead to a more sustainable plan.
4 Require site specific measures to account for site conditions in terms of suffering from flooding or contributing to it.	Preferred option for Publication Policies	This alternative could also be included as part of the preferred option to reflect local evidence. It could be explained in the reasoning justification.
5 To consider cumulative impacts for drainage akin to how Construction Traffic Management Plans consider Cumulative impacts.	Not a reasonable alternative	Cumulative impacts are addressed by the Strategic Flood Risk Assessment. They are also very complex to consider and measure and will require a large amount of resources without assurance that it will be accurate. It would fail the test if soundness as is not justified (based on proportionate evidence) and not effective (practical to implement). If specific measures required are linked to the Local Flood Risk Management Strategy Action Plan this could potentially address cumulative impacts.

ISSUE 1C: FLOOD RISK PROTECTION AND PREVENTION MEASURES OUTSIDE CRITICAL DRAINAGE AREAS

2.4.5 The options and alternatives considered are:

Option	Status	Reason
1 To ask for standard flood risk measures in specific areas (Critical Drainage Areas) if not covered by Building Regulations.	Preferred option for Publication Policies	This is the preferred option which will reflect the new evidence base developed for Critical Drainage Areas. Building Regulations (approved documents C and H) refer to resistance to moisture, foul and rainwater drainage and SuDS. They relate to materials used but do not take into consideration different flood depths. Therefore, they are useful but each case should be treated individually. Other guidance documents ⁸ will be helpful as they include information about types of floods, frequency, duration and flood performance of buildings ⁹ .
2 To maintain the status quo and do not ask for standard flood risk measures in specific areas.	Reasonable alternative	Maintaining the status quo will not reflect the new evidence base that has been developed in terms of flood risk events and Critical Drainage Areas.
3 To prioritise the impact of development in Critical Drainage Areas.	Preferred option for Publication Policies	This option will reflect the new evidence base that has been developed and ensure an effective implementation as evidence base is available.
4 To determine the detail of the standard measures by Flood Risk Assessments.	Preferred option for Publication Policies	This option will make the policy more deliverable as Flood Risk Assessments are required in Critical Drainage Areas.

⁸ Improving the flood performance of new buildings – Flood resilience construction CLG, DEFRA and the Environment Agency 2007.

⁹ [British Standards also have information regarding flood risk: BS 85500 Flood Resistance and Resilience Construction, guide to improving the flood performance in buildings.](#)

ISSUE 1D: PROTECTION AND MAINTENANCE OF FLOOD RISK MEASURES

2.4.6 The options and alternatives considered are:

Option	Status	Reason
1 To require maintenance information for flood risk measures for the lifetime of the development.	Preferred option for Publication Policies	Applicants should ensure that the development is safe for its lifetime. The submission of information will ensure that the maintenance of flood risk measures is well planned from the beginning rather than an afterthought. This is in line with National Planning Practice Guidance (NPPG) which requires demonstrating that development is safe for its lifetime.
2 To maintain the status quo and do not require maintenance information for flood risk measures for the lifetime of the development.	Reasonable alternative	Applicants should ensure that the development is safe for its lifetime. However, the submission of information will ensure that the maintenance of flood risk measures is well planned from the beginning.
3 To keep the options under review and only introduce them if further surface water events occur.	Not a reasonable alternative	This option is not reasonable as it is important that flood risk measures are in place and maintained before the next flooding event occurs.

ISSUE 1E: PROTECTION AND MAINTENANCE OF FLOOD DEFENCE AND FLOOD RISK ASSETS

2.4.7 The options and alternatives considered are:

Option	Status	Reason
1 To include a policy for the protection and maintenance of flood defence and flood risk assets.	Preferred option for Publication Policies	Applicants should ensure that the development is safe for its lifetime. The submission of information will ensure that the maintenance of flood risk measures is well planned from the beginning rather than an afterthought. This is in line with National Planning Practice Guidance (NPPG) which requires demonstrating that development is safe for its lifetime.

Option	Status	Reason
2	Reasonable alternative	Applicants should ensure that the development is safe for its lifetime. However, the submission of information will ensure that the maintenance of flood risk measures is well planned from the beginning.
3	Not a reasonable alternative	This option is not reasonable as it is important that flood risk measures are in place and maintained before the next flooding event occurs.

ISSUE 1F: ACCESS, EGRESS AND EMERGENCY ACCESS.

2.4.8 The options and alternatives considered are:

Option	Status	Reason
1	Preferred option for Publication Policies	This is the preferred option, Applicants should ensure that the development is safe for its lifetime. The submission of information will ensure that the maintenance of flood risk measures is well planned from the beginning rather than an afterthought. This is in line with National Planning Practice Guidance (NPPG) which requires demonstrating that development is safe for its lifetime.
2	Reasonable alternative	Applicants should ensure that the development is safe for its lifetime. However, the submission of information will ensure that access, egress and emergency exits are taken into consideration from the beginning.
3	Not a reasonable alternative	This option is not reasonable as it is important that flood risk measures are in place and maintained before the next flooding event occurs.

Option	Status	Reason
4 Add to the policy the fact that buildings should remain safe for occupants in case of flooding.	Preferred option for Publication Policies	This option will make the policy more complete and justified.

ISSUE 1G: FLOOD DEPTH THRESHOLD TO REQUIRE FLOOD PROTECTION AND RESILIENCE MEASURES

2.4.9 The options and alternatives considered are:

Option	Status	Reason
1 To use a depth of 0.5m threshold to require flood protection and resilience measures borough-wide.	Reasonable alternative	This option may become too onerous to implement and to enforce borough-wide as Flood Risk Assessments may not be required and applicants may not be able to address and implement the policy effectively.
2 To maintain the status quo and do not use a depth of 0.5m threshold to require flood protection and resilience measures.	Reasonable alternative	This option will not reflect the new evidence base developed for Critical Drainage Areas.
3 To use a depth of 0.5m threshold to require flood protection and resilience measures only to flood risk areas (for which a Flood Risk Assessment is required).	Preferred option for Publication Policies	This is the preferred option. Applicants should ensure that the development is safe for its lifetime. This is in line with National Planning Practice Guidance (NPPG) which requires demonstrating that development is safe for its lifetime. Using a threshold will focus the policy to ensure implementation.
4 To refer specifically to the 1 in 100 year storm event if the policy is to be included.	Preferred option for Publication Policies	Applicants should ensure that the development is safe for its lifetime. This is in line with National Planning Practice Guidance (NPPG) which requires demonstrating that development is safe for its lifetime. Using a specific flooding event will focus the policy to ensure implementation. This will also

Option	Status	Reason
		reflect the updated evidence base.
5	Reasonable alternative	This option may become too onerous to implement and to enforce borough-wide.
6	Reasonable alternative	Both threshold and the reference to a specific storm event will focus the policy whereas this option may not lead to proper implementation and the provision of sustainable development. British Standards, however, will provide useful guidance to design the specific measures.

ISSUE 1H: SURFACE WATER RUN-OFF FROM UPSTREAM DEVELOPMENT

2.4.10 The options and alternatives considered are:

Option	Status	Reason
1	Reasonable alternative	This may not be very feasible for applicants to implement unless in cross-boundary developments. Also, it may not be feasible for the Council to control. However, its importance could be explained in the reasoning justification.
2	Preferred option for Publication Policies	A policy will be unnecessary as there is already a dialogue with neighbouring authorities through Drain London. However, information could be included within the reasoned justification.

ISSUE 2: SURFACE WATER RUN-OFF AND SUDS

ISSUE 2A: SURFACE WATER RUN-OFF, IMPERMEABLE SURFACES AND SUSTAINABLE SUDS

2.4.11 The options and alternatives considered are:

Option	Status	Reason
1 To implement a more restrictive policy regarding the reduction of surface water run-off to greenfield run-off rates through the reduction of surface water run-off, the reduction of impermeable surfaces and the implementation of the most sustainable SuDS.	Preferred option for Publication Policies	This is the preferred option. It will ensure implementation by taking into consideration specific site constraints which may otherwise make the policy too onerous in some cases. It will provide flexibility by giving different options to provide the reduction in surface water run-off.
2 To implement a more restrictive policy regarding the reduction of surface water run-off to achieve a 25% reduction in line with the London Sustainable Drainage Action Plan.	Reasonable alternative	The GLA's response explains that the current London policy will achieve at least 50% reduction on the existing situation. This target of 25% may not be ambitious enough and reflect local circumstances.
3 Not to allow for any surface water run-off coming out from the site.	Reasonable alternative	This option is potentially too onerous to implement specially in smaller sites.
4 To implement a policy which allows for flexibility to account for site-specific conditions and to trade a smaller reduction of surface water run-off with more sustainable SuDS.	Preferred option for Publication Policies	This option could be added to the policy to ensure implementation by adding flexibility which will make the policy more effective.
5 To use an Article 4 direction to prevent non-permeable surfaces in back gardens.	Not a reasonable alternative	This option will mean some degree of work and will take over a year to be fully implemented. For it to be effective, a whole Borough Article 4 direction might be desirable but it may not be considered favourably by the Government. Also, the current policy which resists impermeable surfaces in

Option	Status	Reason	
		front gardens could be modified to resist impermeable surfaces in gardens and landscaped areas. An Article 4 direction is not done through Local Plan policy but through a separate process under separate legislation.. Furthermore, the proposed wording of the publication policy and the reasoning justification does not prevent the Council from implementing an article 4 direction in the future.	
6	To follow the London Plan and consider more restricted rates in Critical Drainage Areas if supported by evidence.	Reasonable alternative	The existing evidence base shows that the Critical Drainage Areas are fed by the surrounding areas so in order to be effective, the reduction in surface water run-off should be borough-wide.
7	To make a differentiation between minor and major development: majors to achieve greenfield run-off and minors to facilitate surface water attenuation in line with the technical guidance (CIRIA SuDS manual).	Preferred option for Publication Policies	This option could be added to the policy to add flexibility and ensure implementation and to account for site constraints and size.
8	To maintain the status quo and use the current policies (Local Plan and London Plan).	Reasonable alternative	Maintaining the status quo will not reflect the new evidence base that has been developed.

ISSUE 2B: SWIMMING POOLS AND GROUNDWATER

2.4.12 The options and alternatives considered are:

Option		Status	Reason
1	Policy to factor in all the potential flow discharged into the sewer system (including swimming pools, groundwater discharge and any other sources).	Preferred option for Publication Policies	This option will address the current issues and potential cumulative impact which will lead to a more sustainable development.
2	To maintain the status quo and do not factor in all the potential flow discharged into the sewer system and account only for surface water run-off.	Reasonable alternative	This option will not reflect growing evidence base that these flows are being discharged to the sewer. It is likely that these flows are increased in the future as more basements are implemented.
3	To require a flow control system and a management protocol to store and slow the flow and reduce the peak.	Reasonable alternative	This could be an option applicants may choose to implement but it will be too restrictive and may lead to less sustainable SuDS proposed.
4	To monitor SuDS and surface water run-off reduction measures to reduce flooding.	Reasonable alternative	This option will not address the issue and will not lead to sustainable development.

ISSUE 2C: MAINTENANCE OF SUDS

2.4.13 The options and alternatives considered are:

Option		Status	Reason
1	Refer to SuDS maintenance in the policy.	Preferred option for Publication Policies	The current policy will be updated to reflect the need to maintain the SuDS. This will lead to a more sustainable development and may reduce the need for conditions at a later stage in the process.
2	To create a specific policy on SuDS maintenance.	Reasonable alternative	There is currently an existing policy about SuDS so it makes sense that the policy is modified to require maintenance.
3	To maintain the status quo and do not refer to SuDS maintenance.	Reasonable alternative	Since April 2015, SuDS for major applications have been required systematically. Experience has shown that SuDS are normally an afterthought and maintenance information is routinely not included in the application. The status quo will not lead to a more sustainable development.

ISSUE 2D: SUDS STANDARDS

2.4.14 The options and alternatives considered are:

Option	Status	Reason
1 To use the DEFRA SuDS non-statutory standards.	Preferred option for Publication Policies	This option will make the implementation of the SuDS policy by giving clear guidance.
2 To adopt the Council's own standards.	Reasonable alternative	This option will lead to a lot of work and resources and the need for creating our own standards is not clear. The evidence base needed to deviate from national standards is not available at the moment. However, if future guidance is developed it should also be considered.
3 To maintain the status quo and do not have any specific standards.	Reasonable alternative	Experience has shown that SuDS are normally an afterthought. The status quo will not lead to a more sustainable development.

ISSUE 2E: INFORMATION SUBMITTED IN RELATION TO SUDS

2.4.15 The options and alternatives considered are:

Option	Status	Reason
1 To specify what information regarding SuDS should be provided at a planning application stage.	Preferred option for Publication Policies	This option will support the implementation of the SuDS policy by giving clear guidance to applicants.
2 To maintain the status quo and do not specify which information regarding SuDS should be provided at planning application.	Reasonable alternative	Experience has shown that SuDS are normally an afterthought. The status quo will not ensure adequate implementation of SuDS and lead to a more sustainable development.

ISSUE 2F: RETROFITTING SUDS

2.4.16 The options and alternatives considered are:

Option		Status	Reason
1	To support the retrofitting of buildings with SuDS when planning permission is required even if there are not direct drainage implications.	Preferred option for Publication Policies	This policy could lead to a more sustainable development by positively supporting a more sustainable option if applicants are minded to provide SuDS. This will maximise green infrastructure and protect against climate change.
2	Not to introduce a policy supporting the retrofitting of buildings with SuDS when planning permission is required even if there are not direct drainage implications.	Reasonable alternative	This option will not reflect the need for green infrastructure that the evidence shows.

ISSUE 2G: PERMEABLE VS IMPERMEABLE SURFACES IN GARDENS / LANDSCAPED AREAS

2.4.17 The options and alternatives considered are:

Option	Status	Reason
<p>1 To require permeable surfaces instead of impermeable when hard surfaces are proposed in any garden/landscaped areas –as opposed to only in front gardens- (link with surface water run-off policy).</p>	<p>Preferred option for Publication Policies</p>	<p>This is the preferred option. This policy could lead to a more sustainable development and should not be too onerous to implement as it will mean that applicants think about permeability at the outset.</p>
<p>2 To be flexible to allow for site specific issues (size, ground conditions or other constraints) and allow surface water run-off to be directed to SuDS.</p>	<p>Reasonable option</p>	<p>Flexibility will be added in the implementation of SuDS. However, permeable surfaces can be located in all circumstances regardless of whether the soil is clay or not if the permeable surfaces are well designed. The second part of this option refers to the SuDS policy and how they are designed to ensure surface water run-off is directed to them.</p>
<p>3 To maintain the status quo and not require permeable surfaces instead of impermeable when hard surfaces are proposed in any garden/landscaped areas.</p>	<p>Reasonable alternative</p>	<p>This option will not reflect the need for increasing permeability that the evidence shows.</p>

ISSUE 2H: SUDS IN MAJOR AND MINOR DEVELOPMENT

2.4.18 The options and alternatives considered are:

Option	Status	Reason
<p>1 To include a separate SuDS policy for majors and minors and to require the use of the Council SuDS tool.</p>	<p>Reasonable alternative</p>	<p>This policy will make SuDS easier to implement and lead to a more sustainable development. However, requiring the use of the Council's SuDS tool may reduce flexibility. Furthermore, as it currently stands, the Council's SuDS tool cannot account for all circumstances.</p>
<p>2 To include a separate SuDS policy for major and minors to recognise their constraints and do not require the use of the Council SuDS tool.</p>	<p>Preferred option for Publication Policies</p>	<p>This policy should be linked to the reduction of surface water run-off to ensure SuDS are provided accounting for local circumstances. This will create certainty and give flexibility to applicants to implement.</p>
<p>3 To maintain the status quo and do not include a separate SuDS policy for majors and minors and do not require the use of the Council SuDS tool.</p>	<p>Reasonable alternative</p>	<p>This option will maintain the status quo and will not reflect the need for SuDS that the evidence shows.</p>

ISSUE 3: WATER INFRASTRUCTURE PROJECTS AND OTHER ISSUES

ISSUE 3A: POLICY FOR WATER INFRASTRUCTURE PROJECTS

2.4.19 The options and alternatives considered are:

Option	Status	Reason
1 To introduce a general policy on flooding and drainage infrastructure provision, upgrade works and other works in the public realm and highways against which any future proposals could be determined.	Preferred option for Publication Policies	There is currently an existing policy about the Thames Tideway Tunnel. This could be amended instead to reflect the London Plan Policy 5.14 which requires boroughs to identify wastewater infrastructure requirements and to support in principle the Thames Tideway Sewer Tunnels. This will ensure compliance.
2 To use the current policies to assess this type of works.	Reasonable alternative	This option is reasonable but will not reflect the fact that the Thames Tideway Tunnel has been granted development consent and the need for further sewerage infrastructure in the Borough.
3 To include a statement rather than a policy.	Reasonable alternative	A statement will not have as much weight and will not achieve what the preferred option would.

ISSUE 3B: WATER CONSUMPTION POLICY

2.4.20 The options and alternatives considered are:

Option	Status	Reason
1 To include a specific policy on water consumption.	Reasonable alternative	This is already covered by Building Regulations and the London Plan so there is no need to repeat existing policy.
2 To use existing regulation to address water consumption.	Preferred option for Publication Policies	This is already covered by Building Regulations and the London Plan so there is no need to repeat existing policy.

ISSUE 3C: THAMES ESTUARY 2100 PLAN

2.4.21 The options and alternatives considered are:

Option		Status	Reason
1	Policies to include greater emphasis on the Thames Estuary 2100 Plan.	Preferred option for Publication Policies	Thames 2100 Plan is an evidence base document produced by the Environment Agency. Its findings and recommendations should be addressed in the policies and reasoning justification.
2	Policies not to include greater emphasis on the Thames Estuary 2100 Plan.	Not a reasonable alternative	Thames 2100 Plan is an evidence base document produced by the Environment Agency. It should therefore be considered in the policies to ensure compliance with regional and national policy.

2.5 PUBLICATION POLICY

PUBLICATION POLICY

2.5.1 Following consideration of the above options, consultation and reasonable alternatives, the existing Local Plan policy is proposed to be amended as follows (red = Draft Policies and blue = Publication Policies):

2.5.2

Policy CE2 Flooding

The Council will require development to ~~adapt to fluvial flooding and mitigate the effects of, and adapt to, surface water and sewer flooding.~~ address and reduce flood risk and its impacts.

To deliver this the Council will:

Flood Risk

- a. resist vulnerable development, including self-contained basement dwellings, in Flood Risk Zone 3 and Critical Drainage Areas as defined in the Strategic Flood Risk Assessment and the Surface Water Management Plan;
- b. require a site-specific Flood Risk Assessment, including an 'Exception Test' for all development in Flood Risk Zone 2 and 3 as defined in the Strategic Flood Risk Assessment, for sites in Critical Drainage Areas ~~areas with critical drainage problems~~ and for all sites greater than one hectare;
- c. where required undertake the 'Sequential Test' for planning applications within Flood Risk Zones 2 and 3, and for sites in Critical Drainage Areas ~~areas with critical drainage problems~~;
- d. require development at risk from flooding in Flood Risk Zones 2 and 3, in Critical Drainage Areas ~~areas with critical drainage problems~~, or sites greater than 1ha to incorporate suitable flood ~~defence or flood mitigation risk~~ measures to account for site conditions in accordance with Building Regulations, existing guidance and the recommendations of the site-specific Flood Risk Assessment, the Strategic Flood Risk Assessment and the Local Flood Risk Management Strategy. These measures should:
 - i. address all flood depths flooding for the 1 in 100 year storm event plus climate change with flood depths of 0.5m and above to ensure the development will remain safe during a flood event throughout its lifetime;
 - ii. take into account access, egress and emergency exit routes;
 - iii. ensure buildings remain safe for occupants in case of flooding;
 - iv. consider the measures and actions included in the Local Flood Risk Management Strategy Action Plan
- e. require that flood risk measures and flood risk assets are protected and maintained to remain operational and provide adequate protection for the lifetime of development;
- f. require development adjacent to the Thames to be set back from the Thames flood defence to enable the sustainable and cost effective upgrade of flood defences and to implement any other recommendations of the Thames Estuary 2100 plan (TE2100).

Surface Water Run-off and Sustainable Drainage Systems (SuDS)

- ~~e. g. require major development to aim to achieve greenfield run-off rates and minor development to achieve a reduction of 50% of existing rates, ensuring that surface water run-off is managed as close to its source as possible, through:
 - ~~i. the reduction of impermeable increase in permeable surfaces;~~
 - ~~ii. recognising opportunities for SuDS to provide other environmental benefits;~~
 - ~~iii. factoring all flows into the sewer system (including swimming pools discharges, groundwater or other flows) in the calculations of greenfield run-off rates.~~~~
- ~~— require sustainable urban drainage (SUDs SuDS), or other measures, to reduce both the volume and the speed of water run-off to the drainage system ensuring that surface water run-off is managed as close to its source as possible in line with the hierarchy in the London Plan. In particular, major development must make a significant reduction in the current volume and speed of water run-off to the drainage system;~~
- ~~f. h. require SuDS to have regard to DEFRA non-statutory SuDS standards and local guidance and to ensure SuDS are adequately designed, built and maintained for the lifetime of development;~~
- ~~i. resist impermeable surfaces in front gardens and landscaped areas where planning permission is required;~~
- ~~j. encourage the retrofitting of SuDS in buildings even if the development will not have drainage implications;~~
- ~~g. require development adjacent to the Thames to be set back from the Thames flood defence to enable the sustainable and cost effective upgrade of flood defences over the next 50 to 100 years;~~

Water Infrastructure Projects

- ~~h.k. support the Thames Tideway Tunnel in principle. require works associated with the construction of the Thames Tideway Tunnel to:
 - ~~i. preserve or enhance the character or appearance of the Cheyne, Royal Hospital and Thames Conservation areas;~~
 - ~~ii. preserve listed buildings and their settings, and Parks and Gardens of Special Historic Interest (i.e. the Royal Hospital grounds);~~
 - ~~iii. not adversely impact on amenity;~~
 - ~~iv. not compromise the future of Cremorne Wharf which is a Safeguarded Wharf.~~~~
- ~~l. support the provision of water and sewage infrastructure which will lead to a substantial and long-term reduction of local flooding, providing the need outweighs any adverse effects during construction and operation and appropriate mitigation measures are in place.~~

KEY DIAGRAM AND PROPOSALS MAP

2.5.3 The following changes are required to be made to the Key Diagram and Proposals Map:

- **Include Critical Drainage Areas**
- **Include Thames Tideway Tunnel safeguarded route**
- **Include Safeguarded zone to clarify the locations where there is a need for setting back the development adjacent to the Thames flood defences as required by the Thames Estuary 2100 Plan.**

2.6 DUTY TO COOPERATE AND STRATEGIC ISSUES

2.6.1 The legal obligation of the ‘duty to cooperate’ requires the Council to “engage constructively, actively and on an ongoing basis” and have “regard to activities” (i.e. strategies, plans, policies) of other bodies in the preparation of Local Plans “so far as relating to a strategic matter”. This includes “considering whether to consult on and prepare... agreements or joint approaches”¹⁰.

2.6.2 A “strategic matter” relates to “sustainable development or use of land that has or would have a significant impact on at least two planning areas, including (in particular)... in connection with infrastructure that is strategic”¹¹. Strategic matters are further defined in paragraph 156 of the NPPF¹² and paragraph 013 of the NPPG on the duty to cooperate¹³.

2.6.3 The below table shows the actions the Council has taken with regard to the duty and the relevant prescribed bodies.

Prescribed body/ies / LPAs ¹⁴	Action(s)	Date(s)
All	The Council has had regard to all relevant strategies, plans and policies of the relevant prescribed bodies in preparing the policies – as set out in Legislation, Policy and Guidance sections of Policy Formulation Reports (PFRs)	Ongoing
All	Local Plan Partial Review Issues and Options consultation – see Consultation Schedule	Dec 2015 – Feb 2016

¹⁰ Section 33A of the Planning and Compulsory Purchase Act 2004, as inserted by Section 110 of the Localism Act 2010

¹¹ Section 33A(4) of the Planning and Compulsory Purchase Act 2004, as inserted by Section 110 of the Localism Act 2010

¹² <http://planningguidance.communities.gov.uk/blog/policy/>

¹³ <http://planningguidance.communities.gov.uk/blog/guidance/duty-to-cooperate/>

¹⁴ Regulation 4 of The Town and Country Planning (Local Planning) (England) Regulations 2012

Prescribed body/ies / LPAs ¹⁴	Action(s)	Date(s)
All	Local Plan Partial Review Draft Policies Regulation 18 consultation – see Consultation Schedule	Oct – Dec 2016
LBHF, Camden, City of London, Westminster, Islington	Central London North Flood Risk Partnership meetings to discuss the implementation of the Lead Local Flood Authority duties and planning policy on flood risk	Quarterly
Drain London (GLA and London boroughs)	Meetings to discuss the implementation of the Lead Local Flood Authority duties and planning policy on flood risk	Quarterly
GLA	Response to the London Sustainable Drainage Action Plan	Dec 2015
Marine Management Organisation	Response to the MMO consultation on the South East Marine Plan Areas	May 2015
Environment Agency	Response to the Environment Agency regarding Thames Estuary 2100 Plan	Oct 2016
TfL	SuDS in London: a design guide	Sep 2016
LBHF	RBKC response to LBHF Regulation 18 Draft Local Plan	Jan 2015
LBHF	RBKC response to LBHF Regulation 18 Proposed Submission Local Plan	Oct 2016
LB Brent	RBKC response to DM Policies Proposed Submission	Oct 2015
OPDC	RBKC response to the OPDC Integrated Water Management Strategy	Jan 2016
OPDC	RBKC response to Regulation 18 Draft Local Plan	Mar 2016



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