Site Allocations Development Plan Document: Proposed Submission Version (Regulation 19)

Evidence Paper: Flood Risk

2021 –
Updated 2024

Lambeth

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1. INTRODUCTION

Site Allocations Development Plan Document

1.1 Lambeth Council has prepared a Site Allocations Development Plan Document (SADPD). The SADPD will form part of the statutory development plan for Lambeth, alongside the the London Plan 2021, the Local Plan and South Bank and Waterloo Neighbourhood Plan 2019. It will form part of the suite of policy documents that help deliver sustainable growth, investment and opportunity in Lambeth, along with the revised CIL Charging Schedule and supplementary planning documents. It will also support implementation of wider Council strategies including the Borough Plan, Economic Resilience Strategy, Transport Strategy, Kerbside Strategy and Climate Action Plan.

1.2 The SADPD will add site-specific policies to those already in the Lambeth Local Plan 2021. The principal objective of the SADPD is to unlock investment on these sites through the mechanism of site-specific planning policy.

1.3 The SADPD Proposed Submission Version (SADPD PSV) includes site allocation policies for thirteen sites, distributed across the borough (see Map 1). All have potential to deliver housing alongside commercial uses, apart from two that relate to hospital campuses. Of these thirteen sites, three have existing allocations in the Local Plan 2021 (Royal Street (Site 1), Gabriel's/Princes Wharf (Site 9) and Norwood Road (Site 18)). These existing allocations will be superseded on adoption of the SADPD. The other existing allocations within the Local Plan 2021 will be unaffected by the SA DPD and will remain as they are. The numbering of the proposed allocations in the Draft SA DPD is designed to work alongside the numbering of the existing allocations in the Local Plan 2021.

1.4 This document will assess sites requiring a sequential and exceptions test but also deal with sites which have surface water management issues. This will ensure development is directed away from areas of highest flood risk and ensure site(s)can be made safe without increasing flood risk elsewhere and, where possible, reduce flood risk overall.

Map 1: Proposed Site Allocations

Reference	Name
SA01	Royal Street SE1
SA02	St Thomas' Hospital SE1
SA03	35-37 and Car Park Leigham Court Road SW16
SA07	6-12 Kennington Lane and Wooden Spoon House, 5 Dugard Way SE11
SA08	110 Stamford Street SE1
SA09	Gabriel's Wharf and Princes Wharf, Upper Ground SE1
SA17	330-336 Brixton Road SW9
SA18	300-346 Norwood Road SE27
SA20	Tesco, 13 Acre Lane SW2
SA21	51-57 Effra Road SW2
SA22	1 & 3-11 Wellfit Street, 7-9 Hinton Road & Units 1-4 Hardess Street SE24
SA23	Land at corner of Coldharbour Lane and Herne Hill Road SE24
SA24	King's College Hospital, Denmark Hill SE5

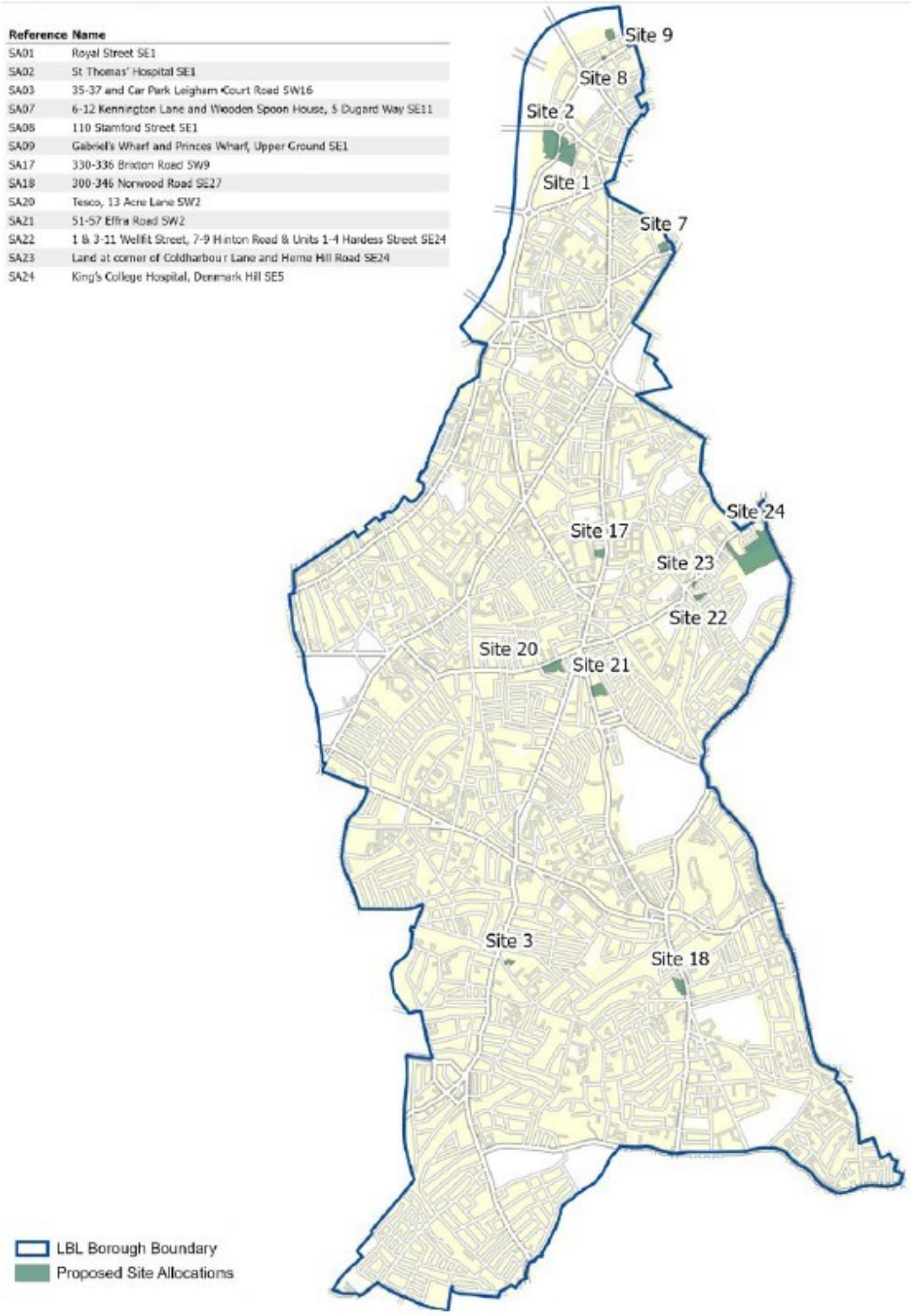


Table 1: Proposed site allocations

Proposed Site	Proposed development	Site Area (ha)
Site 1:Royal Street, SE1	Development to support the delivery of the Waterloo SC1 cluster and include no fewer than 129 self-contained residential units, to replace the existing quantum of homes on the site. In addition, the site could accommodate: • Office floorspace, including approximately 30 per cent that is lab-enabled to contribute to the growth of the SC1 cluster linked to hospitals and universities; the quantum of new office floorspace should be equivalent to or greater than the existing quantum of office floorspace on the site • Flexible spaces at ground floor level to activate frontages, providing a range of unit sizes and types • Cultural facilities and community spaces to contribute to the evolution of the South Bank and Waterloo cultural cluster	2.32 ha
Site 2: St Thomas' Hospital, SE1	Hospital and ancillary uses. Reprovision of Florence Nightingale Museum on site or at an appropriate alternative location	2.74 ha
Site 3: 35-37 and Car Park Leigham Court Road SW16	• Approximately 25 to 30 self-contained residential units • Ground floor commercial floorspace within Class E within the town centre boundary	0.22 ha
Proposed Site 7: 6-12 Kennington Lane and Wooden Spoon House, 5 Dugward Way SE11	Where the NHS facility at Wooden Spoon House is re-provided elsewhere there is potential for other uses including • At least 2,200 sqm GIA of light industrial floorspace to achieve no • net loss of industrial capacity (based on 65 per cent of the area of the existing builders' yard). • • Approximately 115 to 125 self-	0.66 ha

Proposed Site	Proposed development	Site Area (ha)
	contained residential units. • • A replacement community use of equivalent or better functionality to the existing space within the Christ the Redeemer building	
Proposed Site 8:110 Stamford Street, SE1	Community/office floorspace at ground floor providing an active frontage to Stamford Stret and approx 30 residential above	0.11 ha
Proposed Site 9:Gabriel's Wharf and Princes Wharf, Upper Ground SE1	Ground floor active frontage and cultural uses. Uses on the northern, western and eastern perimeter of the site should include a range of small and medium sized units suitable for independent businesses and cultural uses On upper levels offices and/or workspace, and self-contained residential units are appropriate. This may include an element of extra care housing where need is demonstrated	0.53 ha
Proposed Site 17: – 330-336 Brixton Road, SW9	• Reprovision of the existing quantum of office floorspace. • Reprovision of the existing community use to equivalent or better functionality, unless the existing clinical facility is reprovided elsewhere as part of an agreed strategy for provision of that service. • At least 1,289 sqm GIA light industrial workspace (to achieve no net loss of existing industrial floorspace capacity). • Approximately 60 to 70 self-contained residential units, with the quantum depending on the relative proportions of other uses on the site.	0.52 ha
SA18 – 300 -346 Norwood Road SE27	• 150–170 self-contained residential units (gross) • 3,000–4,000 sqm GIA of commercial/community floorspace, to include at least 1,123 sqm GIA light	0.97 ha

Proposed Site	Proposed development	Site Area (ha)
	industrial workspace (to achieve no net loss of existing industrial floorspace capacity)	
SA20 – Tesco, Acre Lane, Brixton	Replacement supermarket and 180 –210 self-contained residential units.	1.25 ha
SA21 – 51- 57 Effra Road SW2	• Approximately 85 to 95 self-contained residential units (gross) • Flexible, light industrial workspace is appropriate at the northern end of the site	1.07 ha
SA22 – 1&3 Wellfit Street, 7-9 Hinton Road & Units 1-4 Hardess Street, SE24	• At least 1,400 sqm GIA light industrial workspace (based on no net loss of industrial capacity calculated at 65 per cent of the area of the current industrial use) • Approximately 50–70 self-contained residential units.	0.33 ha
SA23 Coldharbour Lane/Herne Hill Road, SE24	• Replacement community use of equivalent or better functionality, providing an active frontage at ground floor level. • Alternatively, flexible town centre uses within Class E, that provide active frontages at ground floor level. • Approximately 30–40 self-contained residential units on upper floors, with potential for more depending on the mix and quantum of other community or town centre uses provided. The site is not • suitable for residential units at ground floor level. • Flexible and creative workspace uses along Junction Yard adjacent to the railway arches. Town centre uses are not appropriate in this part of the site as it is outside the town centre.	0.10 ha

Proposed Site	Proposed development	Site Area (ha)
SA24 Kings College Hospital, Denmark Hill, SE24	Hospital and ancillary uses, medical services. Change of use from business and storage use to hospital and associated uses within King's Business Park (KIBA) will be supported to enable reconfiguration and optimisation of the hospital estate for clinical service provision and associated research and development activity.	7.45 ha

What is this report?

1.5 This document forms the evidence base relating to flood risk for the proposed site allocations, which includes the sequential test and exceptions testing for site allocations located within flood zone 3 and the identification and assessment of surface water management issues for other site allocations.

1.6 This document assesses the proposed allocated sites against all sources of flood risk, including surface water management issues. The outputs of this assessment will feed into the indicative site layout, development principles and appropriate resilient and resistant means for proposed allocations aimed at reducing these risks.

1.7 This report provides the evidence base to demonstrate that the Sequential Testing methodology has been applied in accordance with the requirements of the National Planning Policy Framework (NPPF) in allocating development sites within Lambeth. The evidence base also deals with the proposed allocated sites with surface water management issues.

1.8 In accordance with the guidance set out in the NPPF and using the Lambeth Strategic Flood Risk Assessment (SFRA) and Surface Water Management Plan (SWMP), the Sequential Test has been applied to 5 sites (SA9: Gabriel's Wharf and Prince' Wharf; SA8: Stamford Street; SA1: Royal Street; SA2: St Thomas' Hospital; and SA7: 6-12 Kennington Lane and Wooden Spoon House) identified in the SADPD PSV.

Data Collection

1.9 The Environment Agency's Flood Map for Planning (2020) and the Councils Strategic Flood Risk Assessment (SFRA) (March 2013) was used which is considered to be a reliable source of data for this investigation. The Councils SFRA (March 2013) provides an overview of the different types including tidal flooding, fluvial flooding, surface water, sewer flooding, groundwater flooding and artificial flood sources and locations of flood risk across Lambeth.

1.10 In accordance with the NPPF and national planning policy guidance (NPPG) the Lead Local Flood Authority (LLFA) has been fully engaged and consulted with to ensure site-specific policies developed through this process are compatible with the Local Flood Risk Management strategy.

1.11 The LLFA has provided local level surface water flood risk mapping that has been developed from an Integrated Catchment Model (ICM) which is used in Council's 2021 Surface Water Management Plan (SWMP). As of January 2024, the ICM results are in the process of being adopted by the Environment Agency for their national Risk of Flood from Surface Water (ROFSW) mapping. The ROFSW mapping will be used for planning purposes due to its Environment Agency appraisal and ease of accessibility. The ICM, in conjunction with other flood mapping data has been used to assess the risk from all sources for the Sequential and Exceptional Tests. Flood data should be used to define flood risk to development sites enabling those with the lowest flood risk to be identified for development in preference to those with greater flood risk.

1.12 The Environment Agency provided tidal breach maps for the potential sites within Flood Zone 3 to further advise on the design response to the flood risk identified. This will set out the buildings use relative to the Environment Agency's Vulnerability Classification, ground floor finish floor levels and the threshold level to any basements. The outputs of this will also feed into the detailed design of the relevant 5 sites in areas of flood risk.

1.13 In April 2021 the council sought advice from Environment Agency (EA) at the early stage of the preparation of this evidence base document to gain EA's input into the production and to identify and further issues relating to flood risk management within the borough to be addressed within the Draft (Regulation 18) SADPD. The EA were also consulted at the Regulation 18 consultation.

2. POLICY AND LEGISLATIVE CONTEXT AND SPATIAL STRATEGY OF LAMBETH

Policy and legislative context

2.1 This section sets out an overview of national, regional and local planning policy context relevant to flood risk.

National

National Planning Policy Framework (December 2023)

2.2 The NPPF requires Plans to take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures (paragraph 158). It confirms new development should be planned for in ways that:

a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and

b) can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

2.3 With respect to planning and flood risk, paragraph 165 states inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.

2.4 It confirms strategic policies should be informed by a strategic flood risk assessment and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management

authorities, such as lead local flood authorities and internal drainage boards (paragraph 166).

Sequential Test

2.5 NPPF Paragraph 167 confirms all plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property. It confirms they should do this, and manage any residual risk, by:

a) applying the sequential test and then, if necessary, the exception test as set out below;
b) safeguarding land from development that is required, or likely to be required, for current or future flood management;
c) using opportunities provided by new development and improvements in green and other infrastructure to reduce the causes and impacts of flooding, (making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management); and
d) where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development, including housing, to more sustainable locations

2.6 NPPF paragraph 162 states that the aim of the sequential test is to steer new development to areas with the lowest risk of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test. The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding.

Exception test

2.7 If it is not possible for development to be located in areas with a lower risk of flooding (taking into account wider sustainable development objectives), paragraph 169 confirms the exception test may have to be applied. The need for the exception test

will depend on the potential vulnerability of the site and of the development proposed, in line with the Flood Risk Vulnerability Classification set out in the NPPF.

2.8 The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. To pass the exception test it should be demonstrated that:

(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and

(b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

2.9 Paragraph 171 confirms both elements of the exception test should be satisfied for development to be allocated or permitted.

2.10 For the SADPD this means that any proposed allocations that fall within Flood Risk Zone 2 or 3 should undergo a Flood Risk Sequential Test to determine whether it is possible to identify alternative sites that are at a lower risk of flooding that are available to meet the development needs of the borough. And then where it is not possible by applying the exception test. These will need to draw on the conclusions from the published Strategic Flood Risk Assessments and the most up to date Environment Agency flood risk mapping.

2.11 For sites that partially lie in flood zones defined as ‘high probability flooding’ it can be possible to direct development to specific parts of the site that are at lower risk. The NPPF outlines that within each flood zone, new development should be directed first to sites at the lowest probability of flooding and the flood vulnerability of the intended use matched to the flood risk of the site e.g., higher vulnerability uses located on parts of the site at lowest probability of flooding.

2.12 In some situations, it may be necessary to situate some form of development on land identified to be at risk of flooding. The Sequential and Exception Tests aim to limit damage resulting from flooding to land, people and property.

2.13 In accordance with the guidance set out in the NPPF and using the Lambeth Strategic Flood Risk Assessment (SFRA) and Surface Water Management Plan (SWMP), the Sequential Test has been applied to 5 sites identified in the SADPD PSV.

National Planning Practice Guidance (NPPG) on Flood risk and coastal change

Sequential Test

2.14 The National Planning Practice Guidance (NPPG) accompanying the NPPF sets out the government's policy on Flood risk and coastal change[1].

2.15 The guidance confirms the aim of the Sequential Test is to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding. Avoiding flood risk through the sequential test is the most effective way of addressing flood risk because it places the least reliance on measures like flood defences, flood warnings and property level resilience features. Even where a flood risk assessment shows the development can be made safe throughout its lifetime without increasing risk elsewhere, the sequential test still needs to be satisfied.

2.16 Application of the sequential approach in the plan-making and decision-making process will help to ensure that development is steered to the lowest risk areas, where it is compatible with sustainable development objectives to do so, and developers do not waste resources promoting proposals which would fail to satisfy the test. Other forms of flooding need to be treated consistently with river and tidal flooding in mapping probability and assessing vulnerability, so that the sequential approach can be applied across all areas of flood risk. (Paragraph: 023 Reference ID: 7-023-20220825).

2.17 The Sequential Test ensures that a sequential, risk-based approach is followed to steer new development to areas with the lowest risk of flooding, taking all sources of flood risk and climate change into account. Where it is not possible to locate development in low-risk areas, the Sequential Test should go on to compare reasonably available sites:

- Within medium risk areas; and
- Then, only where there are no reasonably available sites in low and medium

[1] National Planning Practice Guidance on Flood risk and coastal change: https://www.gov.uk/guidance/flood-risk-and-coastal-change

risk areas, within high-risk areas.

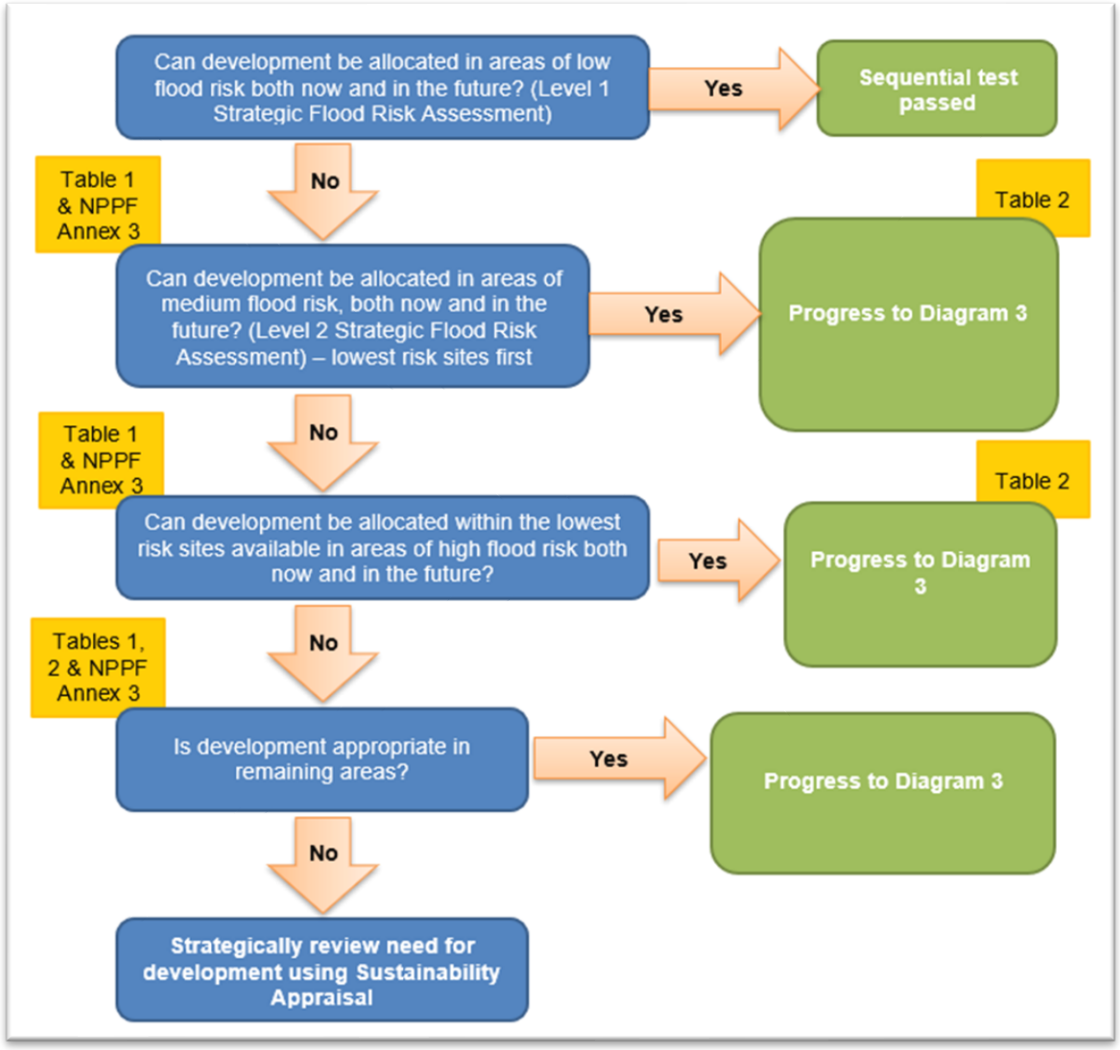
2.18 It confirms that initially, the presence of existing flood risk management infrastructure should be ignored, as the long-term funding, maintenance and renewal of this infrastructure is uncertain. Climate change will also impact upon the level of protection infrastructure will offer throughout the lifetime of development. The Sequential Test should then consider the spatial variation of risk within medium and then high flood risk areas to identify the lowest risk sites in these areas, ignoring the presence of flood risk management infrastructure. It may then be appropriate to consider the role of flood risk management infrastructure in the variation of risk within high and medium flood risk areas. In doing so, information such as flood depth, velocity, hazard and speed-of-onset in the event of flood risk management infrastructure exceedance and/or failure, should be considered as appropriate. Information on the probability of flood defence failure is unsuitable for planning purposes given the substantial uncertainties involved in such long-term predictions (Paragraph: 024 Reference ID: 7-024-20220825)

2.19 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. 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 sustainability appraisal 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 (NPPG Paragraph: 022 Reference ID: 7-022-20140306).

2.20 In the preparation of strategic policies, the Sequential Test needs to be applied to the whole local planning authority area to increase the possibilities of accommodating development, which is not exposed to flood risk, both now and in the future.

2.21 The application of the Sequential Test for plan preparation is set out below in Diagram 2.

Diagram 2: Application of the Sequential Test for plan preparation



Source: NPPG: Paragraph 026 Reference ID: 7-026-20220825

2.22 Reference to Tables 1 and 2, in this figure refers to tables in the NPPF PPG which provide definitions of Flood Zones, and the Flood risk vulnerability and flood zone 'incompatibility'. Diagram 3 is set out below.

Exception test

2.23 The Exception Test, as set out in paragraph 164 of the NPPF, requires two additional elements to be satisfied (as set out in paragraph 164 of the National Planning Policy Framework) before allowing development to be allocated or permitted in situations

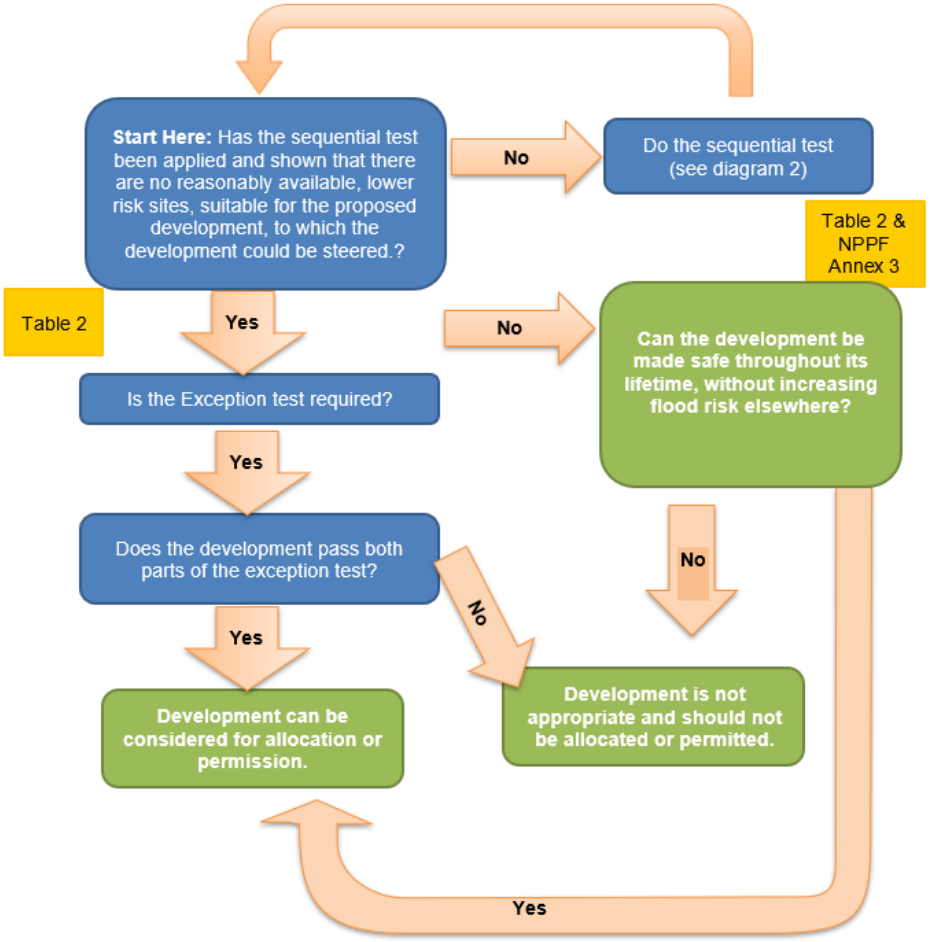
where suitable sites at lower risk of flooding are not available following application of the sequential test. It should be demonstrated that:

- development that has to be in a flood risk area will provide wider sustainability benefits to the community that outweigh flood risk; and
- the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

2.24 The NPPG confirms the Exception Test is not a tool to justify development in flood risk areas when the Sequential Test has already shown that there are reasonably available, lower risk sites, appropriate for the proposed development. It would only be appropriate to move onto the Exception Test in these cases where, accounting for wider sustainable development objectives, application of relevant local and national policies would provide a clear reason for refusing development in any alternative locations identified. Table 2 sets out the circumstances when the Exception Test will be required (Paragraph: 031 Reference ID: 7-031-20220825).

2.25 How the Exception Test is applied in preparing plan policies is summarised below in Diagram 3.

Diagram 3: Application of the Exception Test for plan preparation



Source: NPPG: Paragraph 033 Reference ID: 7-033-20220825

Sustainability Appraisal of proposed sites

2.26 As part of the SADPD PSV process, the council is undertaking the Sustainability Appraisal (SustA) incorporating Sustainability Appraisal (SA), Strategic Environmental Assessment (SEA), Equality Impact Assessment (EqIA) and Health Impact Assessment (HIA) assessment into a single framework. SusA is an objectives-led process. This means that the potential impacts of the SADPD PSV are tested against a series of objectives for sustainable development (e.g. an objective might be *to use resources efficiently*).

2.27 The SustA scoping report identifies that flood risk management is one of Lambeth key issues while 'water resources and flood risk management' is one of the SustA objectives. The SustA framework on SADPD PSV comprises a set of SustA

objectives (18 objectives) and criteria against which each site and policy of the SADPD PSV can be assessed. This Flood risk evidence base has assessed the allocated site developments benefits, where required, against the SustA objectives to demonstrate whether the Exception Test has been satisfied.

2.28 None of the site allocations represented a use incompatible with the flood risk level as defined in the NPPF, however for sites entirely within flood zone 3 they would be subject to the exception test depending on whether the more vulnerable uses such as new dwellings are within flood zone 3.

Regional

The London Plan 2021 (March 2021)

2.29 The London Plan (see policy SI12 – Flood risk management) states that:

A Current and expected flood risk from all sources across London should be managed in a sustainable and cost-effective way in collaboration with the Environment Agency, the Lead Local Flood Authorities, developers and infrastructure providers.

B Development Plans should use the Mayor's Regional Flood Risk Appraisal and their Strategic Flood Risk Assessment as well as Local Flood Risk Management Strategies, where necessary, to identify areas where particular and cumulative flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. Boroughs should co-operate and jointly address cross-boundary flood risk issues including with authorities outside London.

C Development proposals should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses.

D Developments Plans and development proposals should contribute to the delivery of the measures set out in Thames Estuary 2100 Plan.The Mayor will work with the Environment Agency and relevant local planning authorities, including authorities outside London, to safeguard an appropriate location for a new Thames Barrier.

E Development proposals for utility services should be designed to remain operational under flood conditions and buildings should be designed for quick recovery following a flood.

F Development proposals adjacent to flood defences will be required to protect the integrity of flood defences and allow access for future maintenance and upgrading. Unless exceptional circumstances are demonstrated for not doing so, development proposals should be set back from flood defences to allow for any foreseeable future maintenance and upgrades in a sustainable and cost -effective way.

G Natural flood management methods should be employed in development proposals due to their multiple benefits including increasing flood storage and creating recreational areas and habitat.

2.30 In addition, the London Plan (see policy SI13 – Sustainable drainage) encourages development proposals to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. Drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation.

2.31 The sites within the SHLAA study were assessed whether they are in flood risk areas. To ensure the deliverability of these sites, the Sequential Test and design development principles have been applied taking into account housing need and site suitability regarding flood risk.

Local planning context

Lambeth Local Plan 2021

2.32 The Lambeth Local Plan was adopted in September 2021 and forms part of the Development Plan for Lambeth alongside the London Plan 2021 and any made Neighbourhood Plan (currently just one: South Bank and Waterloo Neighbourhood Plan 2019).

2.33 The Lambeth Local Plan is a key part of the Council's policy framework, contributing to implementation of Borough Plan objectives for sustainable growth and opportunity. It is part of the statutory development plan for the borough, setting the vision, spatial strategy and policies for growth and investment whilst supporting the principles of sustainable development. This includes to: increase housing supply; deliver more affordable housing; support growth in jobs and business; secure affordable workspace; provide employment and training opportunities for local people;

regenerate and encourage investment in the borough's opportunity areas and town centres; deliver supporting infrastructure; achieve the highest quality in design and conservation of the built environment; protect and enhance residential amenity; and help secure Lambeth's low carbon future to mitigate climate change whilst adapting to its effects.

2.34 The Lambeth Local Plan emphasises that Lambeth is the fifth most densely populated local authority in England[2]. As a result, there is very limited additional land available for new development and there is a high degree of competition for this land to meet different needs.

Flood risk policy

2.35 Lambeth Local Plan Policy EN5 (Flood Risk) states that:

a) The council will seek to minimise the impact of flooding in the borough through:

i) applying a sequential, risk-based approach to the location of development to avoid, where possible, flood risk to people and property and manage any residual risk, taking account of the impacts of climate change over the lifetime of the development;

ii) steering development towards areas of lowest flood risk, both across Lambeth and within the development site boundary, through the application of the Sequential Test in accordance with the NPPF, taking the vulnerability of the proposed uses into account, as set out in the Lambeth Strategic Flood Risk Assessment (SFRA);

iii) ensuring development does not increase flood risk and where possible reduces flood risk from all sources of flooding;

iv) permitting appropriate development in Flood Zones 1, 2, 3a and 3b subject to meeting the criteria set out in Annex 5; and

v) taking account of the flood risk management measures identified by the Thames Estuary 2100 Plan.

b) All development in Flood Zones 2, 3a and 3b defined in the SFRA, or identified as at risk of flooding from other sources, should contribute positively to actively reducing flood risk through avoidance, reduction, management and mitigation.

c) A Flood Risk Assessment (FRA) will be required for major development proposals within Flood Zone 1, all development within Flood Zones 2, 3a and 3b, or where the

[2]State of Borough 2016

development may be subject to other sources of flooding. The FRA should be proportionate with the degree of flood risk posed to and by the proposed development; consider the impact of climate change on flood risk to and from the development using the latest government guidance; and take account of the advice and recommendations set out in the SFRA, Surface Water Management Plan (SWMP) and Local Flood Risk Management Strategy (LFRMS).

d) FRAs must consider the risks of both on and off-site flooding to and from the development for all sources of flooding including fluvial, tidal, surface water run-off, groundwater, ordinary watercourse, sewer (separate or combined) and reservoir.

e) For all developments, it must be demonstrated that the development will be safe (for its lifetime), and where required, it will reduce fluvial, tidal, surface water run-off and groundwater flood risk and manage residual risks through appropriate flood risk measures, including the use of sustainable drainage systems (SuDS) in accordance with Local Plan policy EN6. Measures to mitigate flooding from sewers should be discussed with Thames Water Utilities Ltd. and be included in development proposals for which this is a risk.

f) The use of basement space for bedrooms and non-residential uses where flooding could threaten the safety of people will not be permitted in areas susceptible to flooding (including but not limited to areas within current modelled breach flood extent and surface water modelling). The use of basement space for all other residential and non-residential uses must adopt resilient design techniques and be flood resilient. Basement proposals should not increase flood risk elsewhere.

g) For developments adjacent to the River Thames and River Graveney, maintenance, remediation and improvements to the flood defence walls will be required where necessary. Developments adjacent to defences and culverts should demonstrate that their development will not undermine the structural integrity or detrimentally impact upon its intended operation and future maintenance.

2.36 Policy EN6 (Sustainable drainage systems and water management) states that development proposals should:

i) maximise opportunities for restoring river channels, flood flow pathways and floodplains to their natural state and managing surface water run-off above ground and as close to the source as possible to reduce flood risks downstream; and implement sustainable water management through water sensitive urban design

(WSUD);

ii) provide compensatory storage to ensure that there is no loss in flood storage capacity where flood storage is removed, as set out in the Strategic Flood Risk Assessment (SFRA);

iii) ensure that the layout and design does not have a detrimental impact on floodwater flow routes across the site;

iv) demonstrate that there will be a net decrease in both the volume and rate of run-off leaving the site by incorporating sustainable drainage systems (SuDS) in line with the London Plan drainage hierarchy and non-statutory Technical Standards for Sustainable Drainage Systems. Details submitted to the council to demonstrate compliance with this policy should follow the design principles within the SuDS Manual and guidance identified within the council's SFRA or Local Flood Risk Management Strategy (LFRMS) to maximise amenity and biodiversity benefits and improve the quality of water discharges.

v) seek to improve the water environment in line with the requirements of the European Water Framework Directive 2000 and its associated legislation, and the Thames River Basin Management Plan;

vi) minimise water consumption and the pressure on the combined sewer network, through incorporating water efficiency measures including rainwater harvesting, grey-water recycling and other innovative technologies where practical; and

vii) demonstrate that the local water supply and public sewerage networks have adequate capacity both on and off-site to serve the development for its lifetime or can be provided; where there is a capacity constraint the council will, where appropriate, apply phasing conditions to any approval to ensure that any necessary infrastructure upgrades are delivered ahead of the occupation of the relevant phase of development.

Lambeth Strategic Flood Risk Assessment (2013)

2.37 The SFRA aims to provide a full Strategic Flood Risk Assessment for the London Borough of Lambeth to inform policies regarding realistic approaches to managing flood risk in accordance with the NPPF and supporting guidance. This provides the local planning authority with tools throughout the LLP and SFRA process sufficient to inform decisions regarding development sites. The SFRA recommends various

policies pertaining to the London Borough of Lambeth and associated flood risks. Through completion of these recommendations the Borough will be able to transparently manage flood risk and ensure risk to their development sites and communities, now and in the future are mitigated.

2.38 Flood zone maps are included within the borough's Strategic Flood Risk Assessment (SFRA) 2013 and Addendum 2018. These maps divide the borough into zones on the basis of the probability of flooding occurring from tidal and fluvial sources, ignoring the presence of any flood defences / alleviation measures. The flood zone maps are based upon data produced by the Environment Agency. This flood zone map is shown in Figure 1 below.

2.39 The SFRA has been completed in two stages. Level 1 SFRA – Study Area Flood Source & Data Review to enable application of the Sequential Test.

- To provide an assessment of the impact of all potential sources of flooding in accordance with NPPF, including an assessment of any future impacts associated with climate change and sea level rise;
- Enable planning policies to be identified specific to local flooding issues;
- Provide information required to apply the Sequential Test for identification of land suitable for development in line with the principles of the NPPF;
- To provide baseline data to inform the Sustainability Appraisal of the Development Plan Documents (DPDs) with regard to catchment-wide flooding issues which affect the Study Area;
- Provide sufficient information to allow the London Borough of Lambeth to assess the flood risk for specific development proposal sites, thereby setting out the requirements for site specific Flood Risk Assessments (FRAs);
- Provide recommendations of suitable mitigation measures including the objectives of Sustainable Drainage Systems (SuDS);
- Enable the London Borough of Lambeth to use the SFRA as a basis for decision making at the planning application stage;
- Where necessary, provide technical assessments to demonstrate that development located in flood risk areas are appropriate and in line with the requirements of the exception test;
- Present sufficient information to inform the London Borough of Lambeth of the acceptability of flood risk in relation to emergency planning capability;
- To inform on specific flood risk issues and suitability for development of Waterloo

and Vauxhall as outlined in the London Plan and Waterloo and Vauxhall Opportunity Area Framework documents and the Current Lambeth Local Plan. This will provide sufficient information to allow the application of the Exception Test. The Level 1 Report also identified that the entire Waterloo Opportunity Area and a large proportion of the Vauxhall Opportunity Area is located in Flood Zone 3a, being an area benefiting from tidal flood defences.

2.40 Level 2 SFRA – refines information on the probability of flooding in the Waterloo and Vauxhall Opportunity Areas including development Site Assessments for Exception Testing.

- An appraisal of the current condition of flood defence infrastructure and of likely future policy with regard to its maintenance and upgrade;
- An appraisal of the probability and consequences of failure of flood risk management infrastructure, including an appropriate allowance for climate change;
- Mapping to illustrate the distribution of flood risk across flood zones to enable a sequential approach to site allocation within flood zones;
- Identify policies and practices required to ensure development satisfies the Exception Test;
- Guidance on the preparation of FRAs for sites of varying risk across the flood zone.

2.41 Areas identified in the SFRA as at highest risk of fluvial and tidal flooding in Lambeth are Waterloo, Vauxhall and adjacent to the River Graveney.

Lambeth Strategic Flood Risk Assessment Addendum 2018

2.42 Lambeth benefits from a significant number of flood defences, which include the Thames Barrier and flood defence embankments upstream of the Barrier. These defences provide a high standard of protection from fluvial and tidal flooding as detailed in the Lambeth SFRA 2013; however, areas behind these defences are at risk of flooding from fluvial and tidal sources should the defences breach or become overtopped. Lambeth's SFRA 2013 included the Environment Agency's Thames Tidal Breach Model that was released in 2012 to assess this risk. This model was

limited to the number of breach locations, with only four breach locations located in LB Lambeth (a total of six that impact the borough).

2.43 In 2017 the Environment Agency produced an updated version of the Thames Tidal Breach Model and analysed the impact of a breach along the entire length of the River Thames defence line; this supersedes the 2012 model and outputs. As a result, LB Lambeth has produced this Addendum for the Lambeth SFRA to account for changes in the Thames Tidal Breach Scenario modelling update.

Lambeth Local Flood Risk Management Strategy 2014 – 2020 (October 2018 revision)

2.44 The council has produced a Lambeth Local Flood Risk Management Strategy (LFRMS) which identifies Lambeth's objectives and measures for managing local flood risk, including surface water run-off and groundwater, and includes specific requirements with regards to management of flood risk to and from development in both the short and longer term. The Strategy also forms the Flood Risk Management plan for the London Borough of Lambeth.

2.45 The Lambeth LFRMS outlines:

- assessment of flood risk (including surface water, groundwater, fluvial and sewer flood risk)
- Risk Management Authorities and their functions
- objectives for managing local flood risk
- proposed measures to deliver the objectives
- timescales to implement measures
- how the measures will be paid for, identifying costs and benefits
- how the Strategy contributes to achievement of Environmental Objectives
- how and when the Strategy will be reviewed.

Lambeth Preliminary Flood Risk Assessment 2011

2.46 The Preliminary Flood Risk Assessment (PFRA) provides a high level summary of significant flood risk, based on available and readily derivable information, describing both the probability and harmful consequences of past and future flooding. The scope of the PFRA is to consider flooding from the following sources; surface run-off,

groundwater, sewers and ordinary watercourses and any interaction these have with main rivers and the sea.

2.47 This PFRA has been based on existing and readily available information and brings together information from a number of available sources such as the Environment Agency's national information (for example Flood Map for Surface Water) and existing local products such as Strategic Flood Risk Assessments (SFRAs) and Surface Water Management Plans (SWMPs).

Lambeth Surface Water Management Plan 2011

2.48 The Surface Water Management Plans (SWMP) outlines the preferred strategy to reduce the risk of surface water flooding to the London Borough of Lambeth. It considers flooding from surface water, sewers, drains, groundwater and run-off from land, small watercourses and ditches that occurs as a result of heavy rainfall. The SWMP builds upon previous work undertaken at part of the Drain London Tier 1 package of works and has been undertaken following a four phase approach; Phase 1 – Preparation; Phase 2 – Risk Assessment; Phase 3 – Options; and Phase 4 – Implementation and Review.

2.49 A new SWMP that utilises an Integrated Catchment Model that covers the entire watershed of Lambeth has been published. This model provides the most accurate analysis of the risk of flooding form surface water in Lambeth. This SWMP has redefined the Critical Drainage Areas (CDAs) as the watershed for areas of particular High-Hazard. This is to help deploy a more strategic approach to managing surface water flood risk that uses Sustainable Drainage System to manage the storm water at source rather than close to the flood receptor.

Spatial strategy of Lambeth

2.50 The area of land within flood zones 2 and 3 covers a large area in the north of the borough, around the tidal River Thames. Other areas include the land around the Graveney and Norbury Brook in the south. There are approximately 24,400 properties in areas at risk of flooding from tidal and river sources in Lambeth; around 16% of all properties in the borough.

2.51 The north of the borough contains the Waterloo and Vauxhall Opportunity Areas where significant residential and economic development is proposed. The strategic nature of the London Plan Opportunity Areas mean that the available land is required for delivery of new development to meet the growth needs of the wider area and contribute significantly to meeting the growth needs of London as a whole.

2.52 Figure 2 illustrates the mapping of areas at risk of flooding across Lambeth which indicates that the extents of Flood Zones 2 and 3 are very similar. Due to the housing targets contained in the Local Plan and the spatial distribution of development it is not possible to focus all development to the south of the borough. As stated in the Local Plan there is great competition for land on which to develop, therefore severely limiting spatial options for development within flood risk zone 1 would not meet the borough's identified development needs.

2.53 Therefore, the sites within these areas cannot be redirected to Flood Zone 1. Sites within flood zones 1, 2 or 3, are generally required to be considered for development to meet the overall housing targets and other economic development aspirations for the borough.

2.54 The SADPD PSV contains 13 site allocations comprising 5 sites ((SA9: Gabriel's Wharf and Prince' Wharf; SA8: Stamford Street; SA1: Royal Street; SA2: St Thomas' Hospital; and SA7: 6-12 Kennington Lane and Wooden Spoon House) within Flood Zone 3 which require sequential and exceptions tests and 4 sites (SA21: 51-57 Effra Road SW2; SA22:1&3 Wellfit Street, 7-9 Hinton Road & Units 1-4 Hardess Street; SA23: Coldharbour Lane/Herne Hill Road; and SA24: Kings College Hospital) which have surface water management issues.

2.55 Maps of surface water flood risk for 13 proposed allocated sites are shown in Appendix 2.

Figure 1: Map illustrating the Environment Agency's designated Flood Zones across Lambeth (Source: Lambeth Strategic Flood Risk Assessment (SFRA) (March 2013))

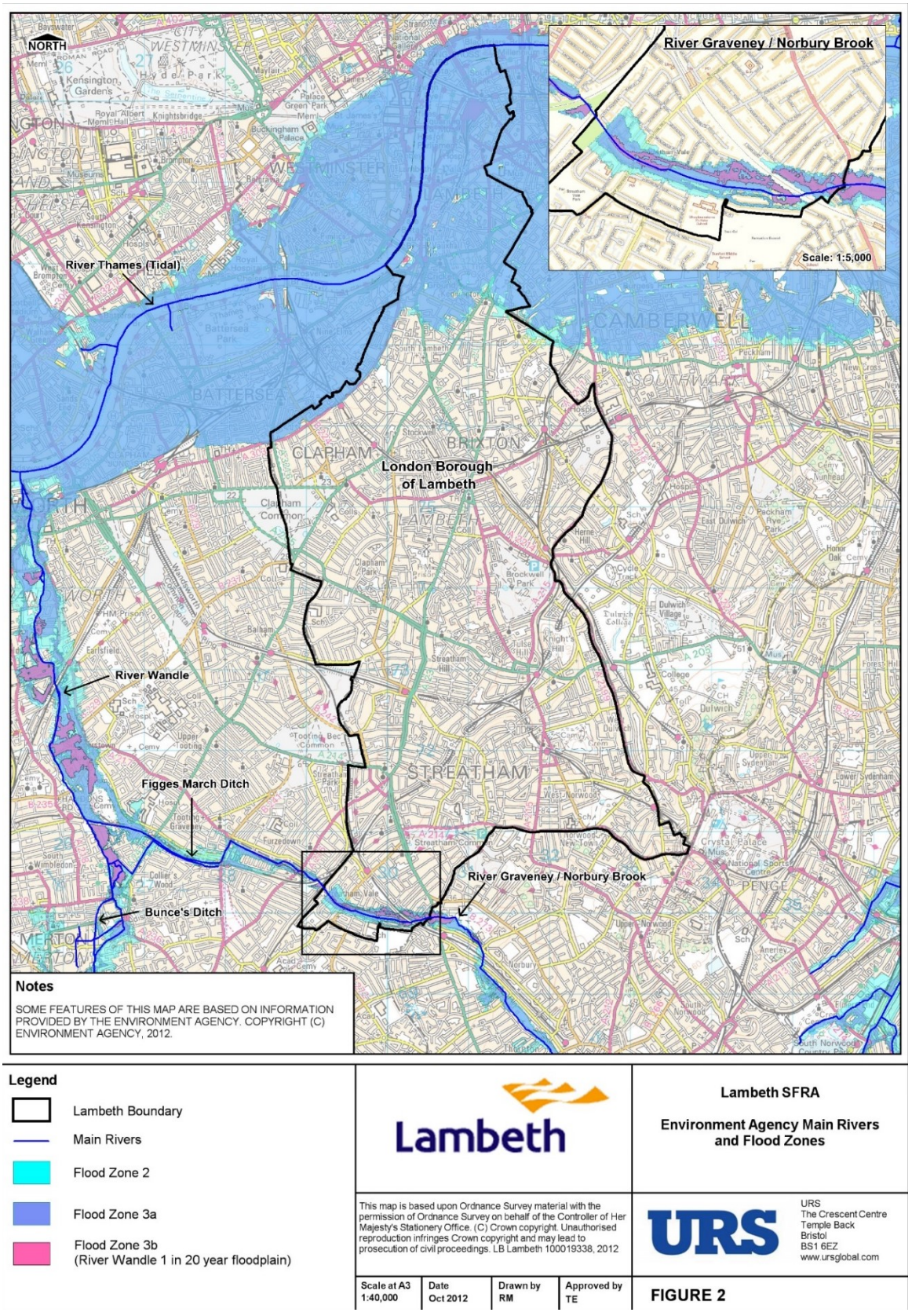


Figure 2: Risk of flooding from surface water extent in Lambeth (Source: Environment Agency's Long Term Flood Risk Mapping (2020))

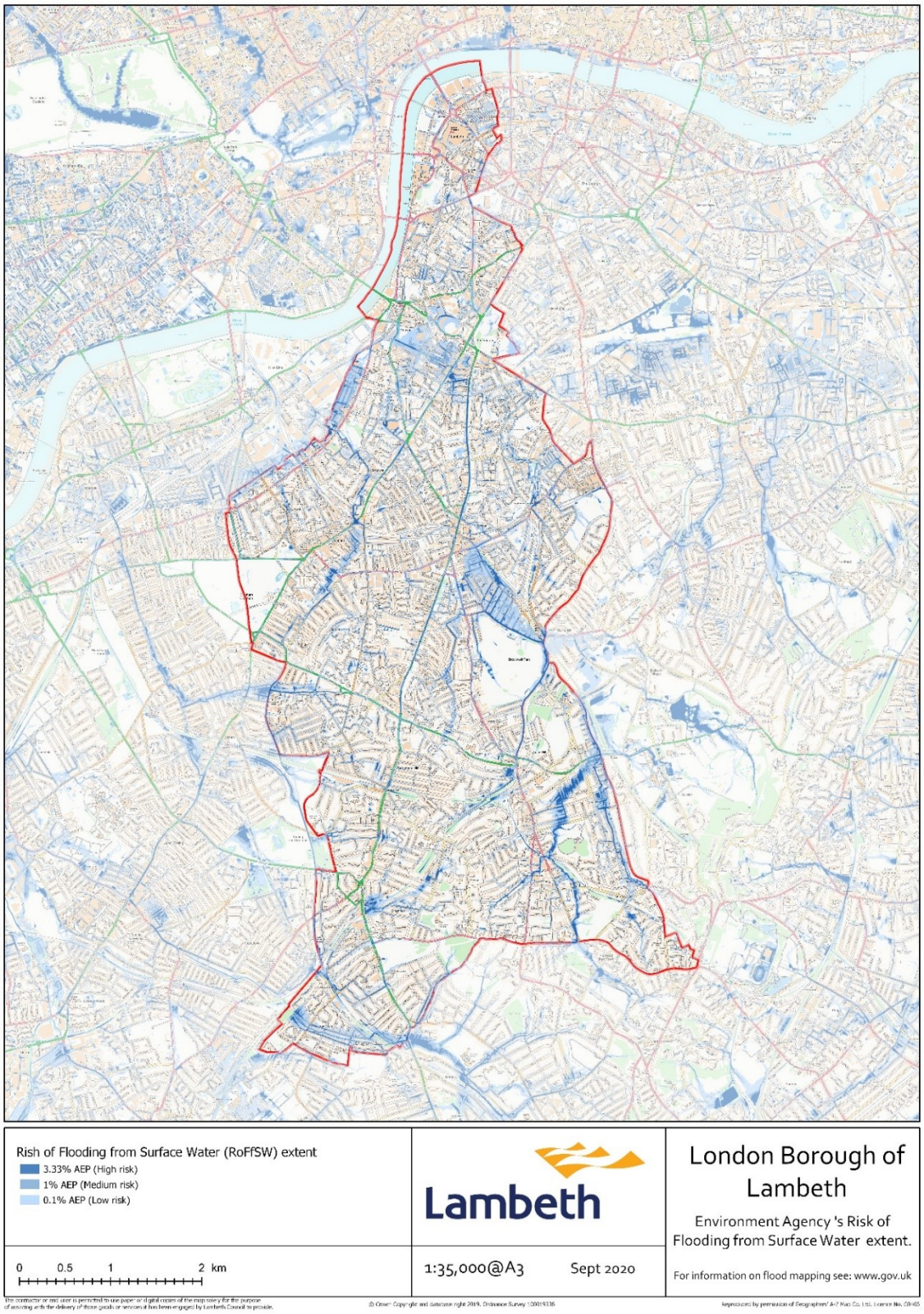


Figure 3: Thames Water DG5 Register Cumulative Sewer Flooding Incidents (Source: Lambeth Strategic Flood Risk Assessment (SFRA) (March 2013))

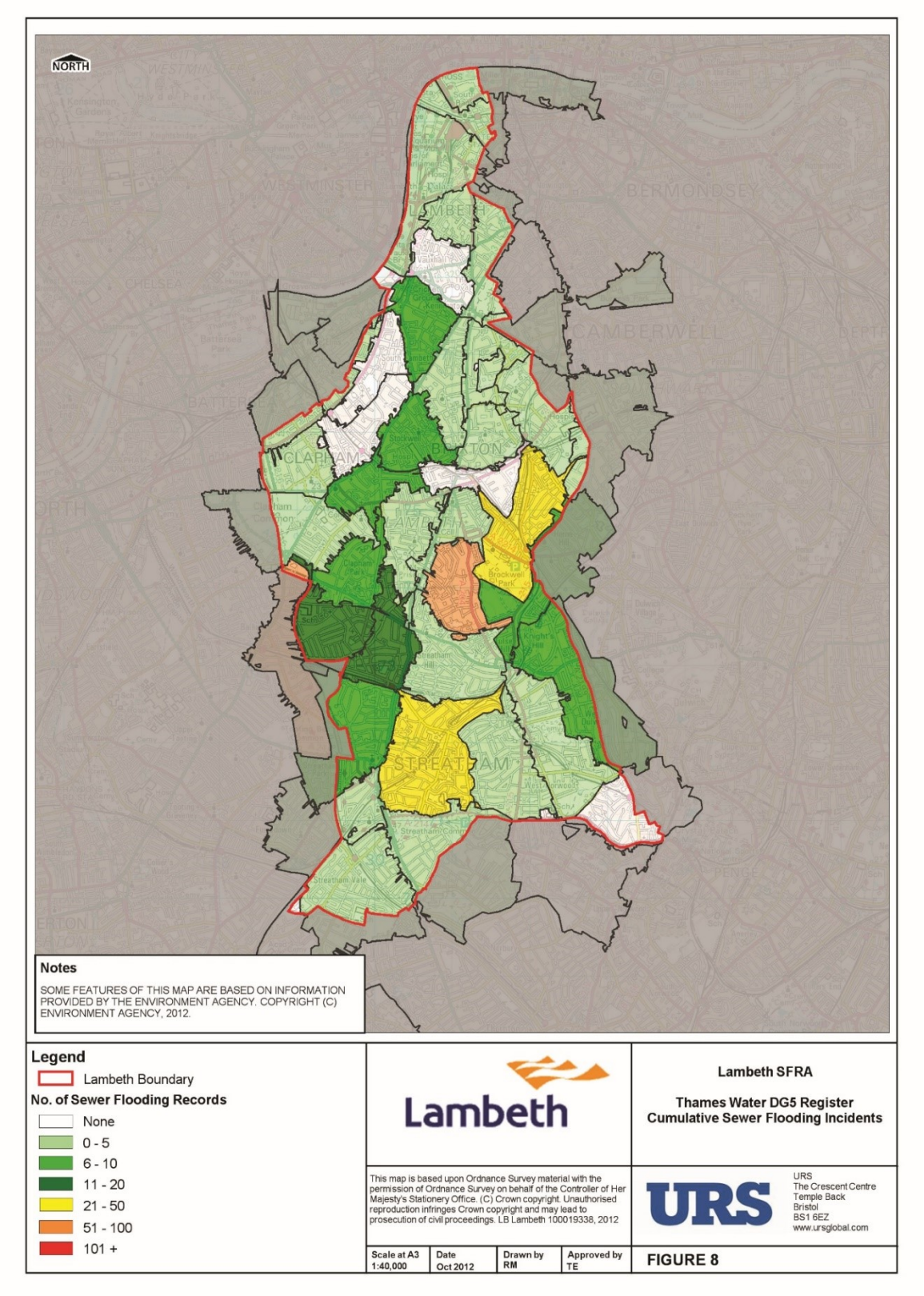


Figure 4: Areas Susceptible to Groundwater Flooding and Groundwater Flooding Incidents 2000 to 2010 (Source: Lambeth Strategic Flood Risk Assessment (SFRA) (March 2013))

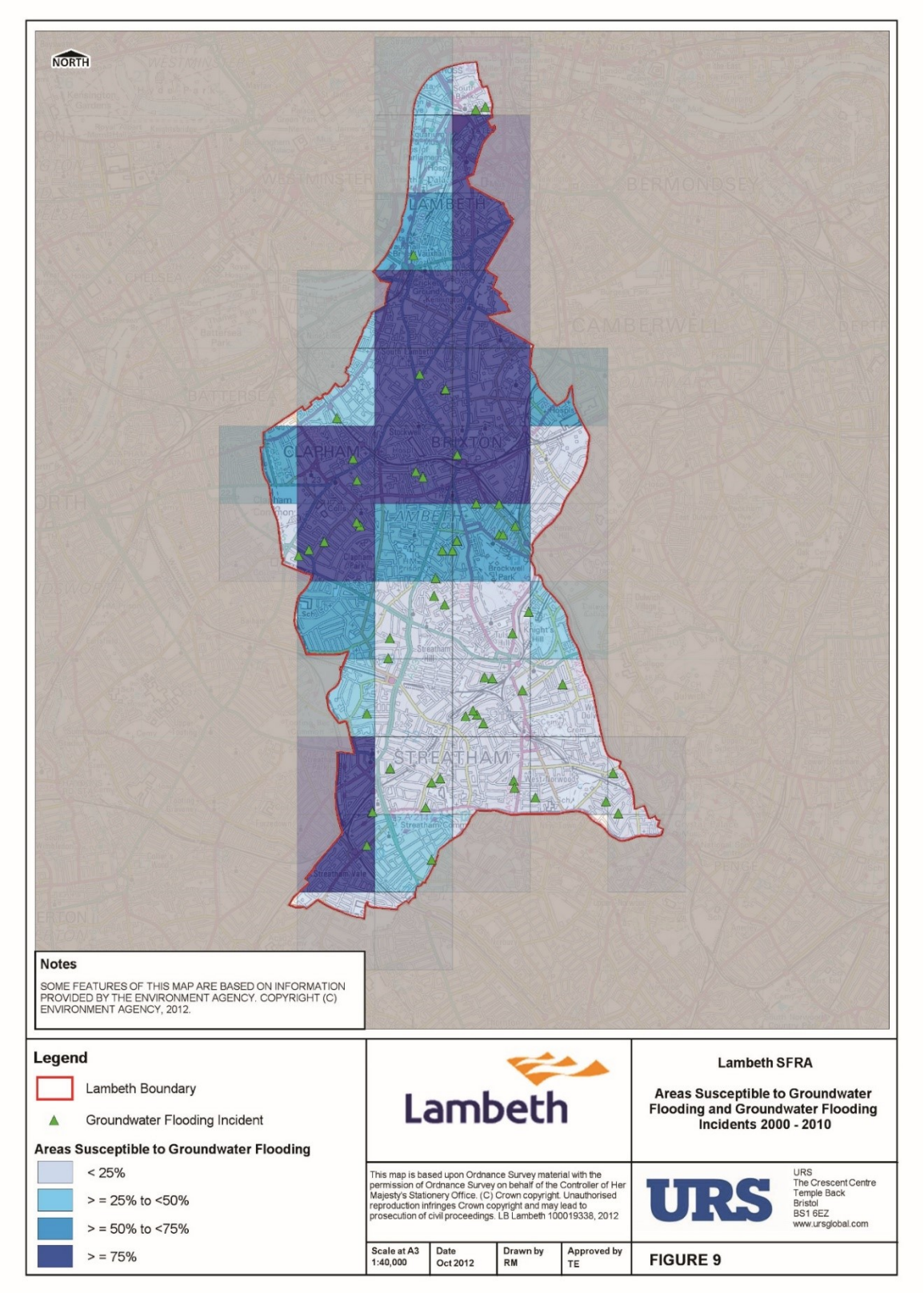
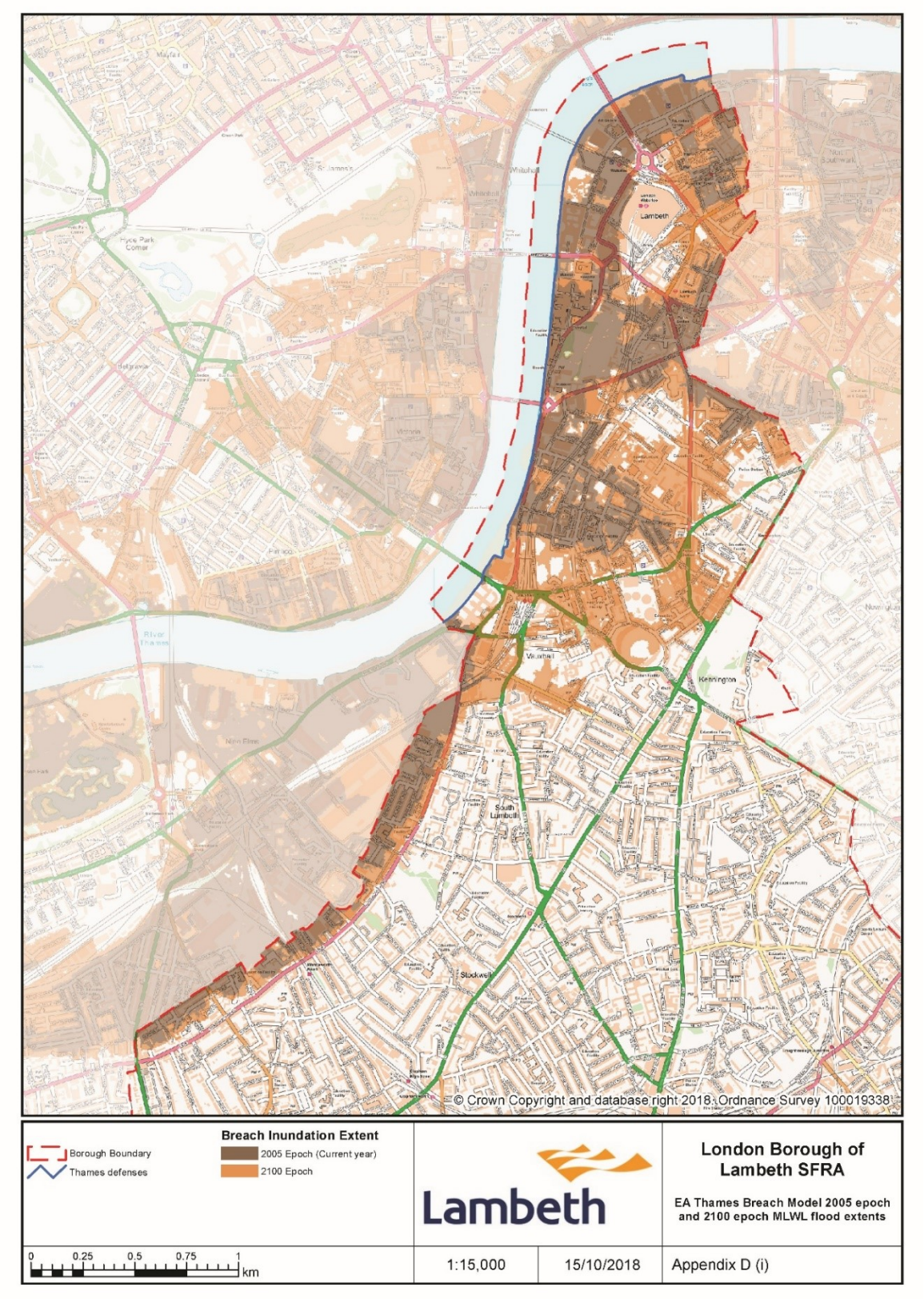


Figure 5: EA Thames Breach Model 2005 epoch and 2100 epoch MLWL flood extents (Source: 2017 Environment Agency Thames Tidal Breach Modelling: SFRA Addendum (2018))



3. GENERAL PROCESS POLICY AND LEGISLATIVE

Approach to the SADPD Proposed Submission Version

3.1 The approach of the SADPD PSV is fully embracing the approach set out within the NPPF that the assessment work should primarily be expected to take place at the plan-making stage. There will be a greater level of detail available for each proposed site allocation than is normally the case for site allocations. Therefore, the SADPD PSV has potential to go beyond the scope of normal site allocations process, but not to the detail of the planning application process.

3.2 The Flood risk evidence base document carries on this approach to the extent possible in a strategic planning document. Therefore, the information will likely go beyond what is required for the development of planning policies for sites within flood risk (i.e. a sequential assessment and exceptions test) to provide detail on how the site should respond in relation to its design and management.

3.3 It should be noted that given that the site allocation policy will not go into the detail of a planning application the information is not as detailed as what would be contained within a Site-Specific Flood Risk Assessment (FRA). It is therefore not anticipated that the assessment would negate the need for a FRA at application stage to demonstrate whether the development will be safe and not increase flood risk elsewhere. However, the NPPG guidance has been utilised to develop a proforma of what could be provided to assist each relevant site allocation. The allocation policies make clear that a site-specific flood risk assessment will be required at planning application stage for any development proposal on site (in line with the NPPF).

Approach to the assessing flood risk

3.4 This section explains the general process and approach the council is taking to the Flood risk evidence base document of the SADPD PSV and how this sits with the various legal duties.

3.5 The methodology undertaken to apply the Sequential Test follows the approach in the NPPF as set out in Diagram 2 of the NPPG illustrated above.

3.6 The vulnerability classification is noted for each site in Sequential test table in accordance with Annex 3: Flood risk vulnerability classification which classifies the flood risk vulnerability of land uses into five categories, as follows:

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 infrastructure for electricity supply including generation, storage and distribution systems; including electricity generating power stations, grid and primary substations storage; and water treatment works that need to remain operational in times of flood.
- Wind turbines.
- Solar farms.

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.
- Car parks.

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 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.

3.7 The allocations assessed in this report fall into two of the five vulnerability classes. Buildings used for dwelling houses are classified as 'More Vulnerable'. The mixed-use allocations will be put into the same category as the most vulnerable use class even though shops, restaurants, office space, and similar non-residential developments alone are classified as 'Less Vulnerable'. Table 3 of the Planning Practice Guidance[3] combines the information in Tables 1 and 2 of the guidance to provide flood risk vulnerability and flood zone 'compatibility' matrix as shown in Table below.

Table 2: Flood risk vulnerability and flood zone 'incompatibility'

Flood Zone	**Flood Risk Vulnerability Classification**				
	Essential infrastructure	**Highly vulnerable**	**More vulnerable**	**Less vulnerable**	**Water compatible**
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a+	Exception Test required +	X	Exception Test required	✓	✓
Zone 3b*	Exception Test required *	X	X	X	✓*

[3] Table 3 of the National Planning Practice Guidance: https://www.gov.uk/guidance/flood-risk-and-coastal-change#Table-3-Flood-risk-vulnerability

✓ Exception test is not required **X** Development should not be permitted

2.1 Notes to Notes to table 2:

- This table does not show the application of the Sequential Test which should be applied first to guide development to the lowest flood risk areas; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea;
- The Sequential and Exception Tests do not need to be applied to those developments set out in National Planning Policy Framework footnote 56. The Sequential and Exception Tests should be applied to 'major' and 'non major' development;
- 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 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.

(NPPG Paragraph: 079 Reference ID: 7-079-20220825).

3.8 For the SADPD PSV this means that any proposed allocations that fall within Flood Risk Zone 3a+ and "more vulnerable" an Exception Test. More vulnerable development is not acceptation in Flood Zone 3b*.

3.9 The Sequential Test has been applied to five proposed allocated sites (SA9: Gabriel's Wharf and Prince' Wharf; SA8: Stamford Street; SA1: Royal Street; SA2: St Thomas' Hospital; and SA7: 6-12 Kennington Lane and Wooden Spoon House), included in Appendix 1. The assessment ensures that each site is looked at comprehensively on its own merits and recorded in a consistent way.

The outputs of the exceptions in Appendix 1 test also provide a brief to the site allocation with respect to design for resilience and resistance to flood risk, and management. In turn, this will also directly feed into the detailed design process to provide guidance and development principles on the following:

- Measures required to designing buildings to avoid flooding by, eg raising floor levels;
- Flood risk management infrastructure;
- Design and flood resilient and resistant construction;
- Flood resilience and flood resistance measures; and
- Green infrastructure, SuDs etc

3.10 For example, the allocated site SA8 – Stamford Street identified that general risk of flooding to the site is considered low except for the residual risk from a Thames tidal breach. A breach flood is expected to be sudden and rapid, with basements and ground floor levels being most susceptible. The design of the development should ensure that the development remains safe over its lifetime through ensuring adequate access into and out of the site, including under flood conditions, and being resilient and resistant to flood risk. The following design solutions/development principles have been suggested:

- Ground floor levels and below will be restricted to Less Vulnerable use types only and will require multiple access and egress points, in addition to a sufficient Evacuation Plan submitted as part of a site-specific Flood Risk Assessment.
- Sustainable Drainage Systems will be required as per the requirements on the NPPF and Local Plan. The development should reduce the rate of surface water runoff on this site to the greenfield equivalent. The use of blue or green roofs are ideal to achieve this at this location.
- Approximate greenfield runoff rate: QBAR = 0.67l/s.

Approach to the assessing surface water management

3.11 The LLFA provided advice and guidance, including results from an Integrated Catchment Model and possible site-specific surface water management issues, to inform site allocations. The LLFA has identified 4 proposed site allocations (Site 21: Effra Road; SA 22: 1&3 Wellfit Street, 7-9 Hinton Road & Units 1-4 Hardess Street; SA23: Coldharbour/Herne Hill Road; and SA24: Kings College Hospital) with possible

surface water flood risk. Maps of surface water flood risk for 13 proposed allocated sites are shown in Appendix 2.

3.12 The flood risk evidence base document will also feed into the detailed design process to provide guidance and development principles for site having surface water management issues. The following design solutions/development principles for these sites have been suggested:

- Proposed residential units, where relevant, at ground level may have to be located outside the area at risk, or raised to limit ingress of water.
- Areas identified at risk of flooding may locate residential units above the ground floor levels (i.e above the anticipated flood depth), however safe access and egress must be established.
- Sustainable Drainage Systems will be required as per the requirements on the NPPF. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs and blue/green infrastructure in open spaces to achieve this and should be considered.

4. BROAD SITE CATEGORIES

4.1 The report screened 13 proposed site allocations against nationally and locally available flood risk maps, including: tidal, fluvial, surface water and groundwater data. Information on the proposed development use, flood risk zone, 2005 Breach, 2100 Breach, surface water flood risk, greenfield run off rate (l/s) is contained within the Tables 4 and 5 below. Table 4 includes the sites that require a Sequential and Exceptions test while Table 5 comprises sites that do not require such tests. Sites have been identified to apply the test where it has not been possible to locate more vulnerable sites to areas of lower flood risk.

4.2 Some sites are located within more than one flood zone. Where this occurs, the commentary column shows which flood zone covers the majority of the site. This information is shown in the accompanying table to this report.

Table 2: Sites proposed for allocation which require a Sequential and Exceptions test: Summary of flood risk

Site Ref	Allocated sites	Site area (ha)	Development Type/ Proposed Land Use	Vulnerability Classification (PPG)	Flood Risk Zone	Thames Tidal Breach		Surface Water Flood Risk			Comments
						2005	2100	High	Medium	Low	
SA9	Gabriel's Wharf and Prince' Wharf	0.53	Offices and/or workspace, retail/food and drink uses, cultural uses and residential	More Vulnerable	Zone 3 + Area benefiting from flood defences	✓	✓				The Council's Strategic Flood Risk Assessment (March 2013) should be referred to for information and recommendations for a site-specific exception test.
SA8	Stamford Street	0.114	Community/office floorspace at ground floor and residential above	More Vulnerable	Zone 3 + Area benefiting from flood defences	✓	✓			✓	The Council's Strategic Flood Risk Assessment (March 2013) should be referred to for information and recommendations for a site-specific exception test. It is clear the extent of surface water flooding within the site is from a topographic anomaly in the model that shows the remnants of a lower ground floor level. It is likely water within the model is ponding in the topographic sink that creates and holds an extent of surface water. The risk of flooding to the site once a building with a formal drainage system is installed is likely to be low. Nevertheless, the LLFA will expect this flood risk to be acknowledged and assessed within the site-specific flood risk assessment.
SA1	Royal Street	7.2	Facilities serving MedTech hub. New offices with affordable workspace. Replacement	More Vulnerable	Zone 3 + Area benefiting from flood defences	✓	✓			✓	The site is wholly within the EA's Flood Zone 3 and 2100 Thames Tidal Breach Scenario, although the site of Canterbury House is outside the 2005 Thames Tidal Breach Scenario. The Council's Strategic Flood Risk Assessment (March 2013) should be referred to for information and recommendations for a site-specific exception test.

Site Ref	Allocated sites	Site area (ha)	Development Type/ Proposed Land Use	Vulnerability Classification (PPG)	Flood Risk Zone	Thames Tidal Breach		Surface Water Flood Risk			Comments
						2005	2100	High	Medium	Low	
			residential with 35% affordable housing. Cultural uses to contribute to evolution of South Bank and Waterloo cultural cluster								From the EA's surface water mapping, isolated ponding of low risk (0.1% AEP) surface water is present across the site. It is likely these are generated from surface water originating from the site. This is considered low risk, however the LLFA expects this ponding to be acknowledged and assessed within a site-specific Flood Risk Assessment. It is also likely that this ponding can be resolved by a sustainable surface water management system i.e. SuDS. These are statutorily required as a part of any new redevelopment.
SA2	St Thomas' Hospital campus	2.35	Hospital and ancillary uses. Reprovision of Florence Nightingale Museum on site or at an appropriate alternative location	More Vulnerable	Zone 3 + Area benefiting from flood defences	✓	✓			✓	The site is wholly within the EA's Flood Zone 3 and 2100 Thames Tidal Breach Scenario. The Council's Strategic Flood Risk Assessment (March 2013) should be referred to for information and recommendations for a site-specific exception test.
SA7	6-12 Kennington Lane and Wooden Spoon House	0.67	Workspace to retain industrial floorspace capacity, replacement community use and residential	More Vulnerable	Zone 3 + Area benefiting from flood defences		✓				The Thames Tidal Breach Model shows the northern portion of the site to be at risk during a 2100 scenario only. The Council's Strategic Flood Risk Assessment (March 2013) should be referred to for information and recommendations for a site-specific exception test. Small ponding has been identified in the modelling during a low risk surface water event but is considered to be very low risk.

Table 3: Sites proposed for allocation which do not require a Sequential and Exceptions test: Summary of flood risk

Site Ref	Allocated sites	Site area (ha)	Development Type/ Proposed Land Use	Flood Risk Zone	Thames Tidal Breach		Surface Water Flood Risk			Comments
					2005	2100	High	Medium	Low	
SA17	330-336 Brixton Road	0.52	Replacement office and community floorspace of equivalent or better functionality, new light industrial workspace appropriate to Brixton Creative Enterprise Zone, new self-contained housing.	Zone 1					✓	EA and Lambeth modelling suggests flood flows are confined to the highway for the high (3.3% AEP) and medium (1.0& AEP) risk events, with flood depths between 0.15 and 0.30m. The low risk event shows the flooding from the highway to extend past the eastern site boundary. The LLFA will expect this risk to be acknowledged and assessed in any site-specific Flood Risk Assessment. Despite this, the site can be considered low risk, although it is expected that finish flood levels and/or threshold levels are at a minimum of 300mm above the 1% AEP flood.
SA21	51-57 Effra Road SW2	1.83	Replacement space for existing community uses, new light industrial workspace appropriate to Brixton Creative Enterprise Zone and new self-contained residential unts.	Zone 1			✓	✓	✓	The EA's model and Lambeth's ICM model show a high risk (3.3% AEP) of flooding to the site from surface water, with depths between 0.30 and 0.60m during a 1% Annual Exceedance Percentage event. The source of this water is likely to be from flows within the highway generated by the large upper catchment. This water then flows through the site entrance from Effra Road. According to the current models the flood water reaches existing residential properties along Dalberg Road. A site-specific Flood Risk Assessment will be required for any development on this site, and will need to acknowledge, analyse, assess, and manage this risk of flooding. Mitigation measures to reduce the risk of surface water flooding is highly recommended and will be required should residential development be considered at ground level. The standard of protection required will be for the 1% AEP event, and the impacts of climate change must be considered.

Site Ref	Allocated sites	Site area (ha)	Development Type/ Proposed Land Use	Flood Risk Zone	Thames Tidal Breach		Surface Water Flood Risk			Comments
					2005	2100	High	Medium	Low	
SA20	Tesco, 13 Acre Lane, Brixton	1.3	Replacement supermarket and self-contained residential units.	Zone 1						Very low risk of flooding
SA3	35-37 and Car Park Leigham Court Road SW16	0.22	Active frontage ground floor onto Leigham Court Road with commercial space within Class E or residential above and new housing to the rear	Zone 1						Very low risk of flooding
SA18	300-346 Norwood Road SE27	1.9	Flexible workspace, community floorspace, shops and food and drink uses plus residential	Zone 1					✓	The EA model only shows shallow (0.00-0.15m) surface water extent within the site, however this is moving away from the roof car park via the ramped surface towards Norwood Road. This will not cause a risk of flooding to the site, and any new development will be required to provide a formal drainage system that manages runoff sustainably i.e., SuDS, therefore eradicating this flow. The site can be considered at low risk of flooding.
SA22	1&3 Wellfit Street, 7-9 Hinton Road & Units 1-4 Hardess Street	0.2	Workspace to at least reprovide industrial floorspace capacity (calculated at 65% plot ratio), and residential	Zone 1			✓	✓	✓	Within the site boundary there appears to be a low risk of flooding from surface water, however deep surface water flows and ponding are present within the highway during a high (3.3% AEP), medium (1.0% AEP) and low (0.1% AEP). The ponding is likely due to the underpass creating a low point along the highway that allows water to collect. The flood depths presented in the model could put the development at risk of surface water flooding. A site specific flood risk assessment will be required and must acknowledge and address this risk

Site Ref	Allocated sites	Site area (ha)	Development Type/ Proposed Land Use	Flood Risk Zone	Thames Tidal Breach		Surface Water Flood Risk			Comments
					2005	2100	High	Medium	Low	
										It is expected any site-specific Flood Risk Assessment acknowledges and assess this flooding to ensure a limited impact on the development.
SA23	Coldharbour Lane/Herne Hill Road	0.1	Active frontage at ground floor, community uses (replacement place of worship), workspace, and residential	Zone 1			✓	✓	✓	Within the site boundary there appears to be a low risk of flooding from surface water, however relatively deep ponding of surface water is present within the highway during a high (3.3% AEP), medium (1.0% AEP) and low (0.1% AEP). This ponding finished abruptly against the current building outline, which suggests there could be a high risk of flooding. It is expected any site-specific Flood Risk Assessment acknowledges and assess this flooding to ensure a limited impact on the development. It is expected that finish flood levels and/or threshold levels are at a minimum of 300mm above the 1% AEP flood.
SA24	Kings College Hospital Estate, Denmark Hill	7.5	Hospital and ancillary uses, medical services. Change of use from business and storage use to hospital and associated uses within King's Business Park (KIBA) will be supported to enable reconfiguration and optimisation of the hospital estate for clinical service provision	Zone 1				✓	✓	The EA model and Lambeth ICM model show surface water ponding across the site during the medium (1.0% AEP) and low (0.1% AEP) events. This is likely from runoff generated by the site as opposed to a flow route originating from elsewhere. This is considered low risk, however the LLFA expects this ponding to be acknowledged and assessed within a site-specific Flood Risk Assessment. It is also likely that this ponding can be resolved by a sustainable surface water management system i.e. SuDS, that will be required as a part of any new redevelopment.

Site Ref	Allocated sites	Site area (ha)	Development Type/ Proposed Land Use	Flood Risk Zone	Thames Tidal Breach		Surface Water Flood Risk			Comments
					2005	2100	High	Medium	Low	
			and associated research and development activity							

5. SEQUENTIAL AND EXCEPTIONS TEST

5.1 Some sites are located within more than one flood zone. Where this occurs, the commentary column shows which flood zone covers the majority of the site. This information is shown in the accompanying table to this report.

5.2 Lambeth Council has prepared the SADPD PSV. for consultation in early 2024, . This consultation will invitate representations on the soundness of the Plan (under Regulation 19 and 20 of the Town and Country Planning (Local Planning) (England) Regulations 2012).

5.3 The report screened 13 proposed site allocations against nationally, locally available, tidal, fluvial, surface water and groundwater flood risk mapping data. The result of the screening exercise identified that out of the 13 sites that were screened for all types of flood risk, 8 of the site allocations in the SADPD PSV fall entirely within Flood Zone 1. These sites are considered to be at low risk of fluvial or tidal flooding and therefore pass the Sequential Test.

5.4 Five sites (SA9: Gabriel's Wharf and Prince' Wharf; SA8: Stamford Street; SA1: Royal Street; SA2: St Thomas' Hospital; and SA7: 6-12 Kennington Lane and Wooden Spoon House) in the SADPD PSV are considered to be at risk of fluvial or tidal flooding either as a result of the site access or the site being included within Flood Zones 3. These are therefore subject to the application of the Exception Test. For these five sites, an assessment has been produced to allow further analysis.

5.5 This site assessment test contains information to show how proposed site allocation would meet the Exception Test if it were proven necessary for any of the proposed housing developments to be located within Flood Zones 3. Information on the sustainability benefits of the proposed allocation is provided. In addition, the outputs of the sequential and exception tests in Appendix 1 also provide a brief to the site allocation with respect to design for resilience and resistance to flood risk, and management. In turn, this will also directly feed into the detailed design process to provide guidance and development principles.

5.6 The Sequential and Exception tests for each site, shown in Appendix 1, have demonstrated that all the five proposed site allocations are needed to meet SADPD PSV objectives, and no other suitable alternatives were available. Additionally, the probability of modelled fluvial flooding and tidal breach extents at the sites will

remain the same as a result of the development, however both are considered very unlikely to occur due to the current level of protection from the Thames Tidal defences.

5.7 The development will remain safe for the lifetime of the development through consideration of the impacts of climate change to flood depths and rainfall intensities and the influence on the design included within the development principles. Residential properties will be restricted to floors above ground level to ensure those most vulnerable will not be inundated, and therefore remain safe even during an extreme flood event. Occupants will be required to register to the Environment Agency's flood warning system, and through an Evacuation Plan clear instruction will be provided of where to evacuate should an extreme event occur.

5.8 The need for new homes and jobs, alongside infrastructure are in areas of highest growth. These areas tend to be in areas of high flood zones, which present a number of challenges in terms of finding other reasonable alternatives for sites. The majority of developable land also tends to be in higher flood zone areas, which limits the reasonable site alternatives. This paper provides evidence that there are no locations outside of those considered with a lower probability of flooding that could be considered to be 'reasonably available'.

5.9 There is great competition for land on which to develop, therefore severely limiting spatial options for development within flood risk zone 1 would not meet the borough's identified development needs. It is considered acceptable that although these sites are located within flood zones 3, supporting information as part of the Exception Test, would allow developments in higher risk zones to be considered suitable. A site-specific Flood Risk Assessment, assessing all forms of flood risk would also need to be carried out at the planning application stage to ensure the proposed development itself will be safe from flooding over its lifetime and will not cause flooding elsewhere. The information presented in the document does not preclude the potential for mitigation requirements that require careful consideration and be integrated into development proposals.

5.10 The detailed site assessment test for the five proposed site allocations affected by fluvial flooding and how they meet the requirements of the Sequential and Exception Test are set out in Appendix 1 of this report.

6. SURFACE WATER MANAGEMENT

6.1 The flood risk evidence base document has identified that there are 4 sites out of 13 sites which have surface water management issues. These sites have surface water management issues and are shown in relevant maps in Appendix 2 below:

- SA21 – 51-57 Effra Road SW2
- SA22 – 1&3 Wellfit Street, 7-9 Hinton Road & Units 1-4 Hardess Street
- SA23 – Coldharbour Lane/Herne Hill Road
- SA24 – Kings College Hospital

6.2 Sites identified as having a risk of flooding from surface water, according to the Environment Agency's Long Term Flood Risk service, will be required to produce a site-specific flood risk assessment (FRA). The FRA must demonstrate the site will be made safe for the lifetime of the development, taking in to account the impacts from climate change, and with regard to the vulnerability of its users; and provide the detail of any measures required to achieve this.

6.3 These surface water management issues can be managed through the design and layout of the site and the use of other mitigation measures. This evidence base document will also feed into the detailed design process to provide guidance and development principles for site having surface water management issues. The detailed design solutions/development principles for the 4 sites (SA21 – 51-57 Effra Road SW2; SA22 – 1&3 Wellfit Street, 7-9 Hinton Road & Units 1-4 Hardess Street; SA23 – Coldharbour Lane/Herne Hill Road; and SA24 – Kings College Hospital) are incorporated in Table 6 below.

6.4 Maps of surface water flood risk for 13 proposed allocated sites are shown in Appendix 2.

7. SITE DEVELOPMENT PRINCIPLES

7.1 This evidence base document will feed into the detailed design process to provide guidance and development principles for allocated sites. The measures in this flood risk evidence base document will be taken forward as site specific 'development principles' for each relevant site allocation.

7.2 A site-specific Flood Risk Assessment (FRA) will be required to support any planning application, including for sites identified as having a risk of flooding from surface water, and will need to demonstrate how flood risk will be managed over the development's lifetime, taking climate change into account, and with regard to

the vulnerability of its users. The FRA should also include practical management practices and solutions to ensure that any residual risk can be safely managed, including through emergency planning, provision of a site-specific flood evacuation plan, and consultation with the Environment Agency for any works planned within 8m of the main river watercourse.

7.3 The development should remain safe over its lifetime through ensuring adequate access and egress during times of flood and being resilient and resistant to flooding. The site or the development should manage the site's surface water runoff as close as reasonably practicable to the greenfield runoff rate. The use of blue/green infrastructure to achieve this will be expected.

7.4 A site-specific Drainage Statement that incorporates Sustainable Drainage Systems (SuDS) is required in support of any planning application as part of the FRA or as an standalone document. The Drainage Strategy will confirm the greenfield runoff rates and volumes, and to ensure the principles of the site's surface water management (i.e. SuDS) are achievable.

7.5 Some design solutions/development principles for the 13 proposed allocated sites have been suggested in Table 6 below.

Table 4: Site development principles for 14 proposed allocated sites

Site ref	Site	Sequential/ exceptions test required	Summary of fluvial and residual risk	Surface water management issues	Design solutions/development principles
SA9	Gabriel's Wharf and Prince' Wharf	Yes	Within Flood Zone 3 and at risk from a River Thames Tidal breach 2005 and 2100 scenario.	Not significant	• A site-specific Flood Risk Assessment will be required as part of a planning application and flood risk should be verified by site-specific breach inundation flood levels, to determine more accurate flood depths at precise locations. • Ground floor levels and below will be restricted to Less Vulnerable use types only and will require multiple access and egress points, in addition to an Evacuation Plan. • More vulnerable uses will not be allowed within the tidal breach extent. Self-contained residential development and/or sleeping accommodation will not be permitted at basement levels in areas identified as at risk of flooding. • There is a possibility the site could discharge its surface water directly to the River Thames. In this scenario, the sustainable drainage system should prioritise water quality management above reducing the rate of runoff e.g. an intensive green roof would be more practical than a blue roof. • Should it not be feasible to discharge the site's surface water into the River Thames, the development will be required to discharge any controlled runoff at the greenfield runoff rate. • Approximate greenfield runoff rate: QBar=2.8l/s • If surface water is discharged into the Thames via an outfall with a diameter greater than 300mm the drainage system will need to include a second line of defence to prevent inundation if the system is tidally locked or should the main flap valve fail. • All developments adjacent to a tidal flood defence, must ensure the current and future statutory crest levels are maintained as outlined in the Thames Estuary 2100 plan and the condition of tidal wall defences provide a sufficient level of defence in accordance with the design life of the building (e.g. generally 100 years for residential and 50-60 years for commercial), and that a 16 metres setback safeguarded for inspections, maintenance, future defence raising and potential replacement without increasing flood risk or encroaching on the river channel.
SA8	110 Stamford Street	Yes	Within Flood Zone 3 and at risk from a River Thames Tidal breach 2005 and 2100 scenario.	Yes, see design principles	• A site-specific Flood Risk Assessment will be required as part of a planning application and flood risk should be verified by site-specific breach inundation flood levels, to determine more accurate flood depths at precise locations. • Ground floor levels and below will be restricted to Less Vulnerable use types only and will require multiple access and egress points, in addition to a sufficient Evacuation

Site ref	Site	Sequential/ exceptions test required	Summary of fluvial and residual risk	Surface water management issues	Design solutions/development principles
					Plan • More vulnerable uses will not be allowed within the tidal breach extent . Self-contained residential development and/or sleeping accommodation will not be permitted at basement levels in areas identified as at risk of flooding. • Sustainable Drainage Systems will be required as per the requirements on the NPPF and local plan. The development should reduce the rate of surface water runoff on this site to the greenfield equivalent. The use of blue or green roofs are ideal for this location to achieve this. • Approximate greenfield runoff rate: QBAR = 0.67l/s • Flood risk identified in modelling is likely due to an anomaly in the topography due to the presence of an exposed below ground level. A site-specific FRA will be required to confirm this assumption, and demonstrate the site is safe.
SA1	Royal Street	Yes	Within Flood Zone 3 and at risk from a River Thames Tidal breach 2005 and 2100 scenario.	Not significant	• A site-specific Flood Risk Assessment will be required as part of a planning application and flood risk should be verified by site-specific breach inundation flood levels, to determine more accurate flood depths at precise locations. • Ground floor levels and below will be restricted to Less Vulnerable use types only and will require multiple access and egress points, in addition to a sufficient Evacuation Plan • More vulnerable uses will not be allowed within the tidal breach extent . Self-contained residential development and/or sleeping accommodation will not be permitted at basement levels in areas identified as at risk of flooding. • Sustainable Drainage Systems will be required as per the requirements on the NPPF and local plan. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs, and blue/green infrastructure in open spaces are ideal for this location to achieve this and should be considered. • The use of SuDS at ground level to manage surface water that provide multiple environmental benefits will be expected. • Approximate greenfield runoff rate: QBar=12.8l/s

Site ref	Site	Sequential/ exceptions test required	Summary of fluvial and residual risk	Surface water management issues	Design solutions/development principles
SA2	St Thomas' Hospital campus	Yes	Within Flood Zone 3 and at risk from a River Thames Tidal breach 2005 and 2100 scenario.	Not significant	• A site-specific Flood Risk Assessment will be required as part of a planning application and flood risk should be verified by site-specific breach inundation flood levels, to determine more accurate flood depths at precise locations. • Ground floor levels and below will be restricted to Less Vulnerable use types only and will require multiple access and egress points, in addition to a sufficient Evacuation Plan. • There is a possibility the site could discharge its surface water directly to the River Thames. In this scenario, the sustainable drainage system should prioritise water quality management above reducing the rate of runoff e.g. an intensive green roof would be more practical than a blue roof. • Should it not be feasible to discharge the site's surface water into the River Thames, the development will be required to discharge any controlled runoff at the greenfield runoff rate. • Approximate greenfield runoff rate: QBar=12.5l/s • Outfalls with diameters greater than 300mm will need to have a second line of defence (e.g. in-line check valve) to prevent inundation of the development if the drainage system was to become tidally locked or the main flap valve was to fail. • All developments adjacent to a tidal flood defence must ensure the current and future statutory crest levels are maintained as outlined in the Thames Estuary 2100 plan and the condition of tidal wall defences provide a sufficient level of defence in accordance with the design life of the building (e.g. generally 100 years for residential and50-60 years for commercial), and that a 16 metres setback safeguarded for inspections, maintenance, future defence raising and potential replacement without increasing flood risk or encroaching on the river channel.
SA17	332-336 Brixton Road, SW9	No	n/a	Yes, see design principles	• Modelling suggests surface water flows from the highway partially enter the site in the southeast corner. This is likely due to a slight depression in the ground. • Mitigation measures to reduce the risk of surface water flooding from the surface water flow route along Brixton Road is highly recommended and will be required should residential development be considered at areas prone to flooding (i.e. the southeast corner). The standard of protection required will be for the medium risk (i.e. 1% AEP) event with the impacts of climate change which must be considered. • it is expected that finish flood levels and/or threshold levels are at a minimum of 300mm above the 1% AEP flood. • Sustainable Drainage Systems will be required as per the requirements on the NPPF

Site ref	Site	Sequential/ exceptions test required	Summary of fluvial and residual risk	Surface water management issues	Design solutions/development principles
					and local plan. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs, and blue/green infrastructure in open spaces are ideal for this location to achieve this and should be considered. • Approximate greenfield runoff rate: QBar=2.81 l/s
SA21	51-56 Effra Road, SW2	No	n/a	Yes - a site specific flood risk assessment will be required	Part of the site is subject to considerable surface water flooding. To deal with these identified issues any new development will be required to produce a Flood Risk Assessment. It is expected the FRA is written in accordance with British Standard BS 8533:2017. To mitigate the risk of flooding to any new development the FRA should include and consider in order of preference: • Analyse, assess, and understand the flood risk in detail to establish extents and depths of flooding across the development site, with an acceptable level of confidence. • Avoid the most vulnerable use types in locations at risk of flooding. (e.g. Omit development in location identified as at risk of flooding) • Substitute land use types in accordance with the Environment Agency's Vulnerability Classification, through locating the most vulnerable use types to areas least likely to flood (e.g. locate residential properties above ground floor levels in at risk locations)) • Mitigate the risk of flooding through a Flood Alleviation Scheme that manages the source(s) of flooding, but ensuring the risk of flooding elsewhere is not increased. Examples of measures include land and threshold raising, flood control measures, and surface water management measures. (Note: Surface water flood level reaches 16.685m AOD (0.384m deep). In addition to the above, • Sustainable Drainage Systems will be required as per the requirements on the NPPF. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs, and blue/green infrastructure in open spaces are ideal for this location to achieve this and should be considered. • Approximate greenfield runoff rate: QBar=10.02 l/s • A S106 contributions may be sought towards a Flood Alleviation Scheme in the form

Site ref	Site	Sequential/ exceptions test required	Summary of fluvial and residual risk	Surface water management issues	Design solutions/development principles
					of SuDS in the vicinity that will help to reduce the surface water flood risk to the site and neighbouring properties (Located the other side of Effra Road within Council-owned land). This scheme may reduce the risk for the site sufficiently to allow residential properties to be located at ground floor.
SA20	Tesco, Acre Lane, Brixton, SW2	No	n/a	Not significant	• Irrespective of the planning requirements for a Flood Risk Assessment, any new development on this site will be expected to at least produce a site-specific drainage strategy, demonstrating conformity with national and local standards and policies for sustainable surface water management • Sustainable Drainage Systems will be required as per the requirements on the NPPF and local plan. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs, and blue/green infrastructure in open spaces is ideal for this location to achieve this and should be considered. • Approximate greenfield runoff rate: QBar=6.75l/s
SA3	35-37 and Car Park Leigham Court Road SW16	No	n/a	Not significant	• Irrespective of the planning requirements for a Flood Risk Assessment, any new development on this site will be expected to at least produce a site-specific drainage strategy, demonstrating conformity with national and local standards and policies for sustainable surface water management • Sustainable Drainage Systems will be required as per the requirements on the NPPF and local plan. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs, and blue/green infrastructure in open spaces is ideal for this location to achieve this and should be considered. • Approximate greenfield runoff rate: QBar=1.56l/s
SA18	286-362 Norwood Road SE27	No	n/a	Not significant	• Irrespective of the planning requirements for a Flood Risk Assessment, any new development on this site will be expected to at least produce a site-specific drainage strategy, demonstrating conformity with national and local standards and policies for sustainable surface water management • Sustainable Drainage Systems will be required as per the requirements on the NPPF. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs, and blue/green infrastructure in open

Site ref	Site	Sequential/ exceptions test required	Summary of fluvial and residual risk	Surface water management issues	Design solutions/development principles
					spaces are ideal for this location to achieve this and should be considered. • Approximate greenfield runoff rate: QBar=7.27l/s
SA19	Knolly's Yard, SW16	No	n/a	Yes - a site specific flood risk assessment will be required	• Risk of flooding from surface water has identified within the west corner of the site. Any new development may require a sequential approach to arranging the site layout and its use types, such as residential properties (should they be proposed) located outside the areas at risk or above the ground floor. A Flood Risk Assessment must acknowledge the surface water flood risk to the site and address it within the site proposal, as will developing the site layout and uses. • Sustainable Drainage Systems will be required as per the requirements on the NPPF. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs, and blue/green infrastructure in open spaces are ideal for this location to achieve this and should be considered. • Approximate greenfield runoff rate: QBar=11.40l/s
SA7	6-12 Kennington Lane and Wooden Spoon House	Yes	Flood Zone 3, and partially at risk from a 2100 River Thames Tidal breach scenario	Not significant	• A site-specific Flood Risk Assessment will be required as part of a planning application and flood risk should be verified by site-specific breach inundation flood levels, to determine more accurate flood depths at precise locations. • Ground floor levels and below in areas located as at risk during a 2100 Thames Tidal Breach Scenario will be restricted to Less Vulnerable use only and will require multiple access and egress points, in addition to an Evacuation Plan submitted as part of a site-specific Flood Risk Assessment. • More vulnerable uses will not be allowed below breach. Self-contained residential development and/or sleeping accommodation will not be permitted at basement levels in areas identified as at risk of flooding. • Sustainable Drainage Systems will be required as per the requirements on the NPPF. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs are ideal for this location to achieve this and should be considered. • Approximate greenfield runoff rate: QBar=3.61l/s
SA22	1&3 Wellfit Street, 7-9 Hinton Road	No	n/a	Yes - a site specific flood risk	• Based on EA RoFfSW mapping and Lambeth's ICM there is a high risk of surface water flooding along Hinton Road that ends abruptly at the existing property boundary (i.e. glass wall) suggesting there could be a risk of flooding to the site. This flooding is

Site ref	Site	Sequential/ exceptions test required	Summary of fluvial and residual risk	Surface water management issues	Design solutions/development principles
	& Units 1-4 Hardess Street, SE24			assessment will be required	likely as a result of the underpasses for the railway creating depressions for water to collect. • Residential properties at ground level may need to be located outside the area at risk or raised to limit ingress of water (e.g. raise finish flood levels or property thresholds to 300mm above flood depth elevation or situate residential properties above ground floor). A site-specific Flood Risk Assessment will be required and will need to acknowledge and address this risk of flooding, and demonstrate properties at ground floor level have a sufficient level of protection (i.e. 1% AEP). The impacts of climate change must be considered also. • Sustainable Drainage Systems will be required as per the requirements on the NPPF. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs are ideal for this location to achieve this and should be considered. • Approximate greenfield runoff rate: QBar=5.55l/s.
SA23	Coldharbour Lane/Herne Hill Road, SE24	No	n/a	Yes - a site specific flood risk assessment will be required	• Based on EA RoFfSW mapping and Lambeth's ICM there is a high risk of surface water flooding along Coldharbour Lane that ends abruptly at the existing property boundary (i.e. glass wall), despite excessive modelled flood depths (1%AEP 0.60-0.9m) within the highway that could impact the site. It is possible the modelled flooding is occurring as a result of the underpasses for the railway creating depressions for water to collect. • Residential properties at ground level may need to be located outside the area at risk or raised to limit ingress of water (e.g. raise finish flood levels or property thresholds to 300mm above flood depth elevation or situate residential properties above ground floor). A site-specific Flood Risk Assessment will be required and will need to acknowledge and address this risk of flooding, and demonstrate properties at ground floor level have a sufficient level of protection (i.e. 1% AEP). The impacts of climate change must be considered also. • Sustainable Drainage Systems will be required as per the requirements on the NPPF. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs are ideal for this location to achieve this and should be considered. • Approximate greenfield runoff rate: QBar=2.71l/s

Site ref	Site	Sequential/ exceptions test required	Summary of fluvial and residual risk	Surface water management issues	Design solutions/development principles
SA24	Kings College Hospital Estate, Denmark Hill	No	n/a	Not significant	• Irrespective of the planning requirements for a Flood Risk Assessment, any new development on this site will be expected to at least produce a site-specific drainage strategy, demonstrating conformity with national and local standards and policies for sustainable surface water management • Sustainable Drainage Systems will be required as per the requirements on the NPPF. The discharge rate should be restricted as close as reasonably practicable to the greenfield rate. The use of blue or green roofs, and blue/green infrastructure in open spaces are ideal for this location to achieve this and should be considered. • Approximate greenfield runoff rate: QBar=25l/s

8. SUMMARY AND CONCLUSIONS

8.1 This evidence base document will feed into the detailed design process to provide guidance and development principles for allocated sites. The measures in this flood risk evidence base document will be taken forward as site specific 'development principles' for each relevant site allocation.

8.2 Utilising the methodology recommended by the NPPF and NPPG, this report has assessed the sites proposed for allocation in the SADPD PSV against their vulnerability to flooding. The conclusions drawn as a result of this report will determine whether the sites are in suitable locations in terms of flood risk and development use.

8.3 Eight of the site allocations in the SADPD PSV fall entirely within Flood Zone 1 while 5 sites are considered to be at risk of fluvial or tidal flooding either as a result of the site access or the site being included within Flood Zones 3. These sites ((SA9: Gabriel's Wharf and Prince' Wharf; SA8: Stamford Street; SA1: Royal Street; SA2: St Thomas' Hospital; and SA7: 6-12 Kennington Lane and Wooden Spoon House) have been subject to more detailed analysis, this information is set out in Sequential and Exception tests in Appendix 1.

8.4 The Sequential and Exception tests for each site have demonstrated that all five site allocations are needed to meet SADPD PSV objectives, and no other suitable alternatives were available.

8.5 The information provided in this report and associated maps and tables are to demonstrate that all the five allocated sites would pass the Sequential Test. The allocation sites that have passed the Sequential Test in this report will still need to respond to and effectively mitigate any risk of flooding on the site.

8.6 In order to demonstrate that the site allocations in principle would pass this Exception Test, the site assessment tests set out the wider sustainability benefits to the community that these allocations would provide. In addition, policy criteria to manage flood risk have been included within the relevant Local Plan and site allocation policies. These include the requirement for a site-specific FRA to ensure the proposed development itself will be safe from flooding over its lifetime and will not cause flooding elsewhere. The site allocations, if necessary, would therefore in principle pass the Exception Test.

8.7 Flood risk zone 3 covers most of the north of the borough. The remainder of the borough is located in flood risk zone 1. However due to the office and housing targets contained in the Lambeth Local Plan 2021 and the spatial distribution of development it is not possible to

focus all development to the south of the borough. There is a great competition for land on which to develop, therefore severely limiting spatial options for development within flood risk zone 1 would not meet the borough's identified development needs. It is considered acceptable that although these 5 sites are located within flood zones 3, supporting information as part of the Exception Test, would allow developments in higher risk zones to be considered suitable. A site-specific FRA, assessing all forms of flood risk would also need to be carried out at the planning application stage.

8.8 The flood risk evidence base document has identified that there are 4 sites (SA21: 51-57 Effra Road SW2; SA22: 1&3 Wellfit Street, 7-9 Hinton Road & Units 1-4 Hardess Street; SA23: Coldharbour Lane/Herne Hill Road; and SA24: Kings College Hospital) out of 13 sites which have surface water management issues. These surface water management issues can be managed through the design and layout of the site and the use of other mitigation measures.

Appendices

APPENDIX 1 SEQUENTIAL AND EXCEPTION TEST

SA9 – Gabriel's Wharf and Prince' Wharf, Upper Ground, SE1

1. Development site and location

1	Question	SA1 - Gabriel's Wharf and Prince' Wharf
A	Where is the development site located?	Site is at edge of the borough on Gabriel's Wharf/Prince's Wharf. Near to borough boundary with Southwark. • Waterloo Opportunity Area • Neighbourhood Planning Area • Thames Policy Area • Central Activities Zone. • Next to new ITV site
B	What is the current use of the site?	Current use is a Pop up style shops and restaurants and outside space Former TV studio currently occupied by workspace associated with the Oxo Tower.
C	Flood zone	Flood Zone 3 and an area benefitting from flood defences.

2. Development proposals

2	Question	SA9 - Gabriel's Wharf and Prince' Wharf
A	Development proposals and uses	Offices and/or workspace, retail/food and drink uses, cultural uses and residential
B	Vulnerability classification	Residential is classified as more vulnerable; employment including cultural institutions, office, retail is classified as less vulnerable
C	Lifetime of the development (residential 100 years, non-resi determined by experience)	100 years due to the residential units
D	Will the development proposals increase the	Yes, the number of people using the buildings will increase from current employment base (within Gabriel's Wharf as a

	overall number of occupants and/or people using the building or land, compared with the current use?	Pop up style shops and restaurants, Prince's Wharf: workspace and studios/ warehouse (17/04152/FUL))
E	Will the proposals change the nature or times of occupation or use, such that it may affect the degree of flood risk to these people? If this is the case, describe the extent of the change.	Current occupation is entirely within normal working hours for both Gabriel's Wharf and Prince's Wharf. Due to the inclusion of residential properties the hours of occupation will be extended to 24 hours.

3. Sequential test

3	Question	SA9 - Gabriel's Wharf and Prince' Wharf
A	What other locations with a lower risk of flooding have you considered for the proposed development? If not why not?	See Sequential within PART A below
B	Flood zone 2- why not zone 1. Flood zone 3 why not 2.	The entire site is located within Flood Zone 3 (high risk) however is considered defended up to the 0.1% AEP event due to the Thames Tidal defences

4. Exception test (where required)

4	Question	SA9 - Gabriel's Wharf and Prince' Wharf
A	To determine whether required, apply the matrix utilising the Vulnerability assessment against proposed uses	See Sequential within PART B below.
B	Would the proposed development provide wider sustainability benefits to the community? If so, could these benefits be considered to outweigh the flood risk to and from the proposed development? Consider the criteria for this having regard to the objectives of Local Plan's SustA/SEA framework	See Table 1- Sustainability Appraisal Objectives matrix.

4	Question	SA9 - Gabriel's Wharf and Prince' Wharf
C	What flood related risks will remain after the flood risk management and mitigation measures have been implemented?	The probability of modelled fluvial flooding and tidal breach extents at the site will remain the same as a result of the development, however both are considered very unlikely to occur due to the current level of protection from the Thames Tidal defences Through locating all residential properties above ground floor level and providing an evacuation plan in case of tidal breach event, the consequence of flooding will be reduced. Basement uses will be restricted to commercial only and will not contain self-contained units or sleeping accommodation, to minimise the impact of a flood.
D	How can it be demonstrated that the proposed development will remain safe over its lifetime without increasing flood risk elsewhere? Principles for access and egress, design, defence, flood warnings and awareness	The development will remain safe for the lifetime of the development through consideration of the impacts of climate change to flood depths and rainfall intensities. Residential properties will be restricted to floors above ground level to ensure those most vulnerable will not be inundated, and therefore remain safe even during an extreme flood event. Occupants will be registered to the Environment Agency's flood warning system, and through an Evacuation Plan clear instruction will be provided of where to evacuate should an extreme event occur. Initial options for refuge include: • the upper floors of the building should a breach of the Thames defences occur local to the site. • Depending on the location of the breach, it is also possible to seek refuge, gain access or egress within Bernie Spain Garden, or from the direction of Waterloo Road. The development will include a Sustainable Drainage System that will seek to manage the site's surface water runoff as close as reasonably practicable to the greenfield runoff rate. This will provide substantial reduction of flood risk elsewhere given the existing site condition has 100% coverage of impermeable surfaces with uncontrolled runoff. The development will ensure the tidal flood defences have a minimum life expectancy of 100 years and the statutory crest levels are maintained in accordance with the Thames Estuary 2100 plan.

4	Question	SA9 - Gabriel's Wharf and Prince' Wharf
		The development will ensure the tidal flood defence are not structurally tied to a non-flood defence structure, including buildings, foundations, piers, jetties and bridges. The development will provide a 16 metre safeguarded setback on the landward side of the tidal flood defences to ensure they can be inspected, maintained, raised and replaced in the future. The development will have a maintenance strategy in place to ensure the defences are maintained to the Environment Agency's required standards for the lifetime of the development. The development will have a maintenance strategy in place to ensure that outfalls discharging directly into the river are maintained to the Environment Agency's required standards for the lifetime of the development.

5. Site specific flood risk and surface water management

5	Question	SA9 - Gabriel's Wharf and Prince' Wharf
A	How is flood risk at the site likely to be affected by climate change?	Lambeth SFRA 2013 sets out the recommended contingency allowances for net sea level rise for London and the south east from a 1990 base level, rising to 15mm/year by 2115. The Thames hydraulic model has also been used to simulate flood events incorporating increased fluvial flows and tide levels to represent the predicted effects of climate change. This is likely to mean that the Thames Barrier will be utilised more frequently meaning fewer high tides will flow upstream into central London.
B	What are the main source(s) of flood risk to the site? (eg tidal/sea, fluvial or rivers, surface water, groundwater, other, history of flooding?).	The main source of flood risk is from a tidal breach and fluvial flooding from the River Thames, although this is considered highly unlikely to occur due to the existing Thames Tidal defences. Environment Agency data suggests the defence was breached by overtopping during the 1928 flood and flooded the site. Since this event the flood defences have been raised to provide a 1in1000yr (0.1% AEP) level of protection.

<table>
<tr><th>5</th><th>Question</th><th>SA9 - Gabriel's Wharf and Prince' Wharf</th></tr>
<tr><td>C</td><td>What is the probability of the site flooding?</td><td>
<table>
<tr><th>Source of flooding</th><th>Undefended probability</th><th>Level of protection</th><th>Risk</th></tr>
<tr><td>Fluvial (Flood zone 3)</td><td>1% AEP</td><td>0.1% AEP</td><td>Low</td></tr>
<tr><td>Tidal (Breach)</td><td>Risk of flooding during 2005 and 2100 scenarios</td><td>0.1% AEP</td><td>Low</td></tr>
<tr><td>Surface water</td><td>0.1% AEP</td><td>n/a</td><td>Low</td></tr>
</table>
</td></tr>
<tr><td>D</td><td>What is the expected depth (m above OD) and level for the design flood? (fluvial (river) flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year)</td><td>The site is considered defended against the 1% AEP fluvial flood risk (i.e. Flood Zone 3) and tidal breach event, due to the 0.1% standard of protection from the Thames Tidal defences.

Should a tidal defence breach occur, the depths are:
2005 scenario: 4.307m to 5.755m AOD
2100 scenario: 4.06m to 6.42m AOD</td></tr>
<tr><td>E</td><td>Are properties expected to flood internally in the design flood and to what depth?</td><td>All residential properties will be positioned above ground floor level and will therefore not be at risk of internal flooding. Commercial properties on the ground floor are at risk of flooding internally from a Thames breach, however the Thames Tidal Defences provides a 0.1% AEP level of protection.

In the very unlikely event of a breach the anticipated flood depth to the ground floor level will be in the region of:
2005 scenario: 0.137m to 2.197m
2100 scenario: 0.559m to 2.632m</td></tr>
<tr><td>F</td><td>What are the existing surface water drainage arrangements for the site?</td><td>The site consists almost entirely of hard surfaces and contains a positive drainage system in the form of linear drains that likely discharges to Thames Water Utility Limited's combined sewer network.</td></tr>
<tr><td>G</td><td>If known, what (approximately) are the existing rates and volumes of surface water run-off generated by the site?</td><td>Based on a 60mm/hr rainfall intensity and 100% impermeable coverage (Cr=0.95), the entire site is expected to have an existing peak flow rate of 85l/s.
A six hour storm of the same intensity would generate 1830m^3 of runoff.</td></tr>
</table>

5	Question	SA9 - Gabriel's Wharf and Prince' Wharf
H	How will you prevent run-off from the completed development causing an impact elsewhere?	A site specific Drainage Strategy will be required for the planning application to confirm the greenfield runoff rates and volumes, and to ensure the principles of the site's surface water management (i.e. SuDS) are achievable. The system will reduce the site's runoff rate to the greenfield equivalent, which has been estimated to be 2.8 l/s (QBar). It is expected sections of hardstanding will be replaced with green infrastructure that will provide amenity and biodiversity benefits as well as reduce runoff rates and volumes. Discharging the site's surface water directly to the River Thames should be explored and may facilitate better water quality management over quantity control. If surface water is discharged into the Thames via an outfall with a diameter greater than 300mm the drainage system will need to include a second line of defence to prevent inundation if the system is tidally locked or should the main flap valve fail.
I	Where applicable, what are the plans for the ongoing operation and/or maintenance of the surface water drainage systems?	The management and maintenance of the drainage system is to be confirmed, however it is anticipated a management and maintenance company will be responsible, with the building owner having the ultimate responsibility. The development will have a maintenance strategy in place to ensure that any outfalls discharging into a river are maintained to the Environment Agency's required standards for the lifetime of the development.
J	Sites not necessarily in high risk flood zone but in critical drainage area should consider surface water attenuation and drainage and may require some additional flood risk information (all sites in CDA over 1ha).	The site is not within a high flood risk area nor within an Environment Agency defined Critical Drainage Area. A sustainable drainage system will be required ordinarily due to the requirements of the NPPF. As of Nov 2020, Lambeth's Critical Drainage Areas (CDAs) are under review, and will be published within a new SWMP, that is anticipated to be published by March 2021.

6. Design of the development

6	Question	SA9 - Gabriel's Wharf and Prince' Wharf
A	How will the development be made safe from flooding and	The site is considered to have a low risk of flooding; however, a residual risk exists from a tidal breach event during 2005 and 2100 scenarios.

6	Question	SA9 - Gabriel's Wharf and Prince' Wharf
	the impacts of climate change, for its lifetime?	A breach flood is expected to be sudden and rapid, with basements and ground floor levels being most susceptible. The flood warning system would be capable of identifying a storm event required to cause a breach sufficiently in advance to allow occupants to either evacuate areas most at risk. To ensure the development remains safe for its lifetime, ground floor levels and below (i.e. below the depth of flooding) will be restricted to less vulnerable use types. The depth of flooding as a result of climate change is not anticipated to reach above ground floor level during a breach, and therefore occupants will remain safe. Development at ground floor level or below, will include where reasonably practicable, an increase in building thresholds and flood levels to 300mm above the modelled flood depth. These floor levels will use flood resilient and resistance building techniques as recommend by the Lambeth's SFRA. As per the requirements on the NPPF, a Sustainable Drainage System will be installed as part of the development and the impacts of climate change on rainfall intensity will need to be considered for the lifetime of the development. The development will ensure the tidal flood defences have a minimum life expectancy of 100 years and the statutory crest levels are maintained in accordance with the Thames Estuary 2100 plan. The development will ensure the tidal flood defence are not structurally tied to a non-flood defence structure, including buildings, foundations, piers, jetties and bridges. The development will provide a 16-metre safeguarded setback on the landward side of the tidal flood defences to ensure they can be inspected, maintained, raised and replaced in the future. The development will have a maintenance strategy in place to ensure the defences are maintained to the Environment Agency's required standards for the lifetime of the development.

6	Question	SA9 - Gabriel's Wharf and Prince' Wharf
		The development will have a maintenance strategy in place to ensure that outfalls discharging directly into the river are maintained to the Environment Agency's required standards for the lifetime of the development.
B	How will you ensure that the development and any measures to protect the site from flooding will not cause any increase in flood risk off-site and elsewhere?	The risk of flooding to the site is considered low, however a residual risk of a tidal breach exists. Due to the low risk nature of the site, flood risk mitigation infrastructure is not proposed (other than siting More Vulnerable development above ground floor and using flood resilient and resistance building techniques at ground floor level and below). On this basis, there will be changes to the existing rate, volume, depth, or direction of inundation should it occur. Therefore, the development cannot result in any increase in flood risk elsewhere. The development will include a Sustainable Drainage System that will reduce the risk of flooding downstream. The development will ensure the tidal flood defences have a minimum life expectancy of 100 years and the statutory crest levels are maintained in accordance with the Thames Estuary 2100 plan. The development will ensure the tidal flood defence are not structurally tied to a non-flood defence structure, including buildings, foundations, piers, jetties and bridges. The development will provide a 16 metre safeguarded setback on the landward side of the tidal flood defences to ensure they can be inspected, maintained, raised and replaced in the future. The development will have a maintenance strategy in place to ensure the defences are maintained to the Environment Agency's required standards for the lifetime of the development. The development will have a maintenance strategy in place to ensure that outfalls discharging directly into the river are maintained to the Environment Agency's required standards for the lifetime of the development.

6	Question	SA9 - Gabriel's Wharf and Prince' Wharf
		The development will, where possible, setback the flood defences increasing flood storage.
C	Have you taken into account the impacts of climate change, over the expected lifetime of the development?	A climate change factor of 40% will be applied to the design of the Sustainable Drainage System, this is in line with national requirements. Lambeth's SFRA recommended contingency allowances for sea level rise will be taken in to account in the design of the development up to year 2115, moreover the risk of flooding from a tidal breach with uplift from climate change for the year 2100 has been considered also. The development will ensure that the statutory flood defence crest levels are maintained in accordance with the Thames Estuary Plan 2100 for the lifetime of the development.
D	Are there any opportunities offered by the development to reduce the causes and impacts of flooding?	A Sustainable Drainage System will be incorporated into the development and will reduce the rate of runoff as close as reasonably practicable to the greenfield rate. The use of green infrastructure to achieve this will be explored. The development will, where possible, setback the flood defences increasing flood storage.
E	What are the proposals for managing and discharging surface water from the site, including any measures for restricting discharge rates?	A Sustainable Drainage System will be installed to reduce the rate of runoff as reasonably close to the greenfield runoff rate. An underground storage system with a flow control device will likely be used to manage the majority of the site's surface water runoff due to spatial constraints of the site. A green/blue roof will be expected at this site, as well as green infrastructure at ground level to provide enhanced biodiversity, amenity, and improved water quality, while also reducing the storage tank volume requirements. Due to the site's proximity to the Thames Estuary, it may be possible to explore a direct connection to the River Thames to further reduce the burden on the combined sewer system. In this circumstance, water quality should be prioritised overflow controls.

6	Question	SA9 - Gabriel's Wharf and Prince' Wharf
		The development will ensure outfalls discharging into the Thames have a second line of defence to prevent inundation if the system is tidally locked or the main flap valve fails.
F	Will it be possible for the development to reduce flood risk overall (eg through the provision of improved drainage)?	The development will include a SuDS which will reduce the risk of flooding to the site and elsewhere, however it is not possible to reduce the risk of fluvial/tidal flooding elsewhere within the confides of the site boundary. The development will raise, where possible, ground or building podium levels above future statutory tidal flood defence crest levels.
G	Where appropriate, are you able to demonstrate how the occupants and users that may be more vulnerable to the impact of flooding (eg residents who will sleep in the building; people with health or mobility issues etc) will be located primarily in the parts of the building and site that are at lowest risk of flooding? If not, are there any overriding reasons why this approach is not being followed?	The approach of substitution has been considered for this development. All More Vulnerable use types will be restricted to above ground floor levels only. Less vulnerable use types such as commercial properties will be positioned at ground and basements levels. Sleeping accommodation will be prohibited at basement level. On the basis the site is currently occupied by less vulnerable use types, the consequence of a flood will at least remain the same as a result of the redevelopment. The provision of an emergency evacuation plan in case of a breach event will ensure the risk of the loss of life is minimised.

7. Other considerations

7	Question	SA9 - Gabriel's Wharf and Prince' Wharf
	Local Flood Risk Management Strategy or Surface Water Management Plan, that will need to be considered when assessing and managing surface water matters.	Lambeth LLFA is current in the process of producing a new Surface Water Management Plan and redefining the borough's Critical Drainage Areas (CDAs), with the results expected to be published by March 2021. The document should be considered when developing the site's site-specific Flood Risk Assessment and Drainage Strategy.

PART A Sequential test information

For each proposed use within the site allocation	
Are any of the development proposals classified as 'Highly Vulnerable'?	No. It is not anticipated that any highly vulnerable uses will be located within the site. Due to the flood risk zone basement dwellings will be avoided.
Which category of the 'Flood Risk Vulnerability Classification' does each of the development sites proposed uses fall into?	It is likely that due to this location this site allocation will be for mix of uses including employment floorspace (cultural institutions, office, retail at ground floor) and residential. As these uses fall within more than 1 category of vulnerability the most vulnerable classification has been used. Residential falls within the more vulnerable category.
Can the 'More Vulnerable' aspects of proposals be directed to parts of the site where the risk of flooding is lower?	The whole of the site is within flood risk zone 3 so the more vulnerable residential uses cannot be directed to areas of lower flood risk within the site.
Utilising SFRA, are there any other suitable sites?	Lambeth is an inner London borough with a substantial housing target within the London Plan, taken forward into the Lambeth Local Plan. The north of the borough contains the Waterloo and Vauxhall Opportunity Areas where significant residential and economic development is proposed. This strategy set out within the Local Plan. The site is within the Waterloo Opportunity Area. It would not be possible to meet the development targets for the opportunity area as set out within the London Plan should sites within flood risk zone 3 not be developed. Flood risk zone 3 covers most of the north of the borough. The remainder of the borough is located in flood risk zone 1. However due to the housing targets contained in the Lambeth Local Plan and the spatial distribution of development it is not possible to focus all development to the south of the borough. All identified sites whether in flood zones 1, 2 or 3, are considered to be required to meet the overall housing targets and other economic development aspirations for the borough. Windfall development on small sites will also contribute towards meeting the housing target. The Lambeth SFRA (2013) states that in Waterloo 'the whole development opportunity area resides in Flood Zone 3a' and 'in

	this case new development should be directed to areas at lowest probability and associated hazard of flooding within the flood cell and the flood vulnerability should be matched to the flood risk of the site e.g. higher vulnerability uses should be located on parts of the site with the lowest probability of flooding. Mapping in Appendix A of the SFRA indicates that the extents of Flood Zones 2 and 3 are very similar. Therefore the sites within these areas cannot be redirected to Flood Zone 1. Due to the flood risk zone the 'more vulnerable' uses would be located on the upper floors and the 'less vulnerable' uses (employment and retail) would be located on the ground floor. This would, therefore, reduce the effect of the probability of flooding on 'vulnerability' uses. As stated in the Lambeth Local Plan there is great competition for land on which to development, therefore severely limiting spatial options for development within flood risk zone 1 would not meet the borough's identified development needs.
Conclusions (utilising information such as housing targets, OA, IDP etc)	All of the site falls within flood zones 3. Given that the site allocation includes residential uses which are classified as 'more vulnerable' an Exceptions Test is required. A site specific Flood Risk Assessment would also be required for the potential development site to provide a greater level of understanding of the flood risks posed in respect of the proposed development.

PART B Exceptions Test

164. The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. For the exception test to be passed it should be demonstrated that:

NPPF Requirement	How could be addressed on site
(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and	Site provides the opportunity to provide a significant number of new homes and new employment uses on previously developed land. The site capacity will contribute towards meeting the London Plan housing targets for the borough. Table 1 below provides analysis against the objectives contained within the SustA framework. In summary the provision of new homes will improve access to good housing and provide affordable homes to meet community needs, employment and retail floorspace

NPPF Requirement	How could be addressed on site
	will provide local job opportunities and cultural institutions will enhance the cultural and tourism facilities and value/potential. The redevelopment of the site will provide regeneration benefits and will be delivered to higher design, security, sustainability and accessibility standards which will provide considerable improvements to the current urban form and environmental performance of buildings on site and cultural value. This will enable people to remain in their homes longer; promote active travel and facilitate health and wellbeing benefits; facilitate access to open space; increase enjoyment of cultural facilities and potential; and make more efficient use of resources, contributing towards climate change mitigation. Failure to develop the site will not secure these sustainability benefits. Although the site is located in flood zone 3, the Thames Barrier is in place which reduces the actual risk to the development significantly. The conclusions of the analysis conclude that redevelopment of the site for a mixed use of residential and employment will provide community benefits which are considered to outweigh the flood risk to and from the proposed development.
(b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.	The design of the development should ensure that the development remains safe over its lifetime through ensuring adequate access into and out of the site, including under flood conditions, and being resilient and resistant to flood risk. These measures should include: • adoption of a sequential approach to location of the most vulnerable elements of any scheme to higher ground and other locations within the site (where applicable); • inclusion of appropriate flood resistance measures and site-specific mitigation measures to basement and ground floor levels. Measures such as water resilient materials (concrete, closed cell insulation, brick walls instead of plasterboards, floor and wall tiles) installing cabling from above (I.e. drop cabling from the ceiling level) as listed in Part C; • buildings designed to withstand the hydrostatic forces from a breach;

NPPF Requirement	How could be addressed on site
	• Reduce the site's runoff rate and volume to the combined sewer system using a Sustainable Drainage System. • Occupants will be registered to the Environment Agency's Flood Warning system • Engagement with the Lambeth Emergency Planning team. The development will ensure the tidal flood defences have a minimum life expectancy of 100 years and the statutory crest levels are maintained in accordance with the Thames Estuary 2100 plan. The development will ensure the tidal flood defence are not structurally tied to a non-flood defence structure, including buildings, foundations, piers, jetties and bridges. The development will provide a 16-metre safeguarded setback on the landward side of the tidal flood defences to ensure they can be inspected, maintained, raised and replaced in the future. The development will have a maintenance strategy in place to ensure the defences are maintained to the Environment Agency's required standards for the lifetime of the development. The development will have a maintenance strategy in place to ensure that outfalls discharging directly into the river are maintained to the Environment Agency's required standards for the lifetime of the development. The development will raise, where possible, ground or building podium levels above future statutory tidal flood defence crest levels. Based on the sequential and exceptions test it was concluded that no other site is reasonably available in a zone of lower flood risk. There is a reasonable prospect of compliance with the second part of the Exception Test subject to an appropriate site layout and adoption of the recommendations of the Environment Agency's package of mitigation measures.

NPPF Requirement	How could be addressed on site
Residual risk and management processes	A residual risk of flooding from a Thames Tidal breach event will remain, however this is considered to have a very low probability of occurring. During such an event the basement and ground levels will be most susceptible to inundation. However, should raise thresholds be incorporated into the design of the building the probability will reduced. Flood risk will be managed through locating the most vulnerable use types outside the areas at most risk of flooding. There is no intention of installing flood mitigation infrastructure, except for flood resilient measures and resistance materials at ground and basement levels, although raising the building's threshold levels should be explored. A site-specific Flood Risk Assessment must also be prepared in support of any planning application to confirm and provide further detail on the above. The FRA should also include practical management practices and solutions to ensure that any residual risk can be safely managed, including through emergency planning, provision of a site-specific flood evacuation plan, and consultation with the Environment Agency for any works planned within 8 metres of the main river watercourse or 16 metres of a tidal river.

Table 1- Site Allocations DPD Sustainability Appraisal (SustA) objectives matrix

SustA Objective	Community benefits against the objectives	SEA topic requirement
SOCIAL		
1. Crime and safety. Ensuring safe communities with reduced crime and disorder.	Development of the site will improve safety and security of the site from current. Where achieving Secure by Design standards this should improve the security of buildings and support a reduction in crime and the fear of crime. Increasing access across the site will also improve permeability of the area. The design of the development will ensure that the development remains safe over its lifetime to the climate change risks, including water shortage.	Population

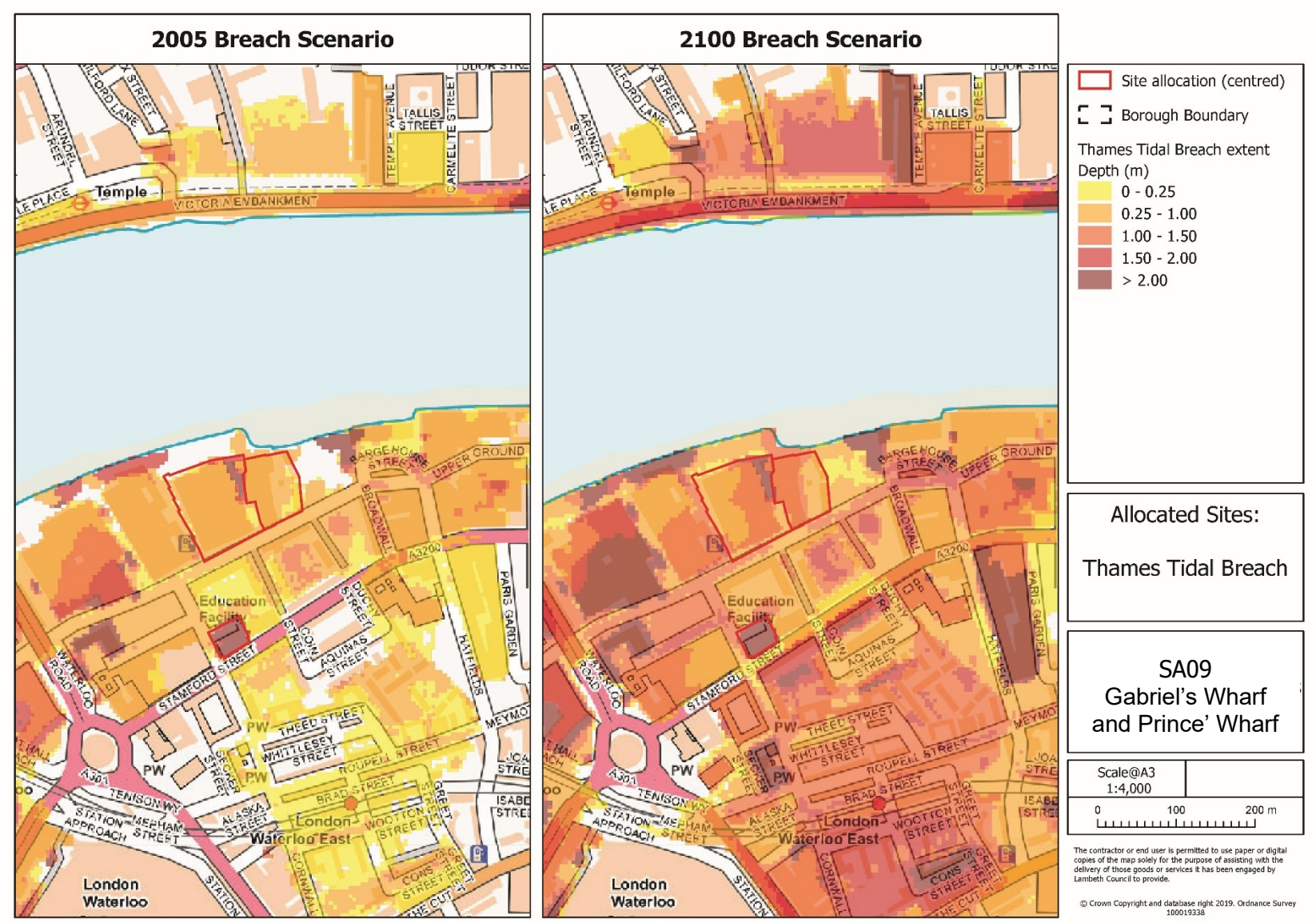
SustA Objective	Community benefits against the objectives	SEA topic requirement
2. Health and wellbeing. Promote a healthy community, including reducing health inequalities and the causes of ill health.	Delivering to car-free standards will improve use active methods of travel with health and wellbeing implications and improve air quality. Good quality standard of new houses within the new development standards set out in the Development Plan will help to improve health and wellbeing.	Population, Human Health
3. Access and services. Create an environment that is accessible to and fully inclusive for all people including the elderly and disabled and improve accessibility to key services and facilities.	New development delivered to high accessibility standards should enable people to remain in the homes for longer, releasing pressure on dedicated specialist housing. Provision of mixed-use development should also enable access to services and job opportunity in the locality and reduce the need to travel. Delivering new homes to standards set out in the Development Plan will provide new residential amenity and access to open space and public realm.	Population, Human Health
4. Provision of essential infrastructure. To ensure that the necessary infrastructure is planned or in place to meet current or likely future demands.	It is not anticipated that there will be any essential infrastructure provided on site.	Population, Human Health, Material Assets
5. Equality and diversity. To tackle poverty and social exclusion and ensure equitable outcomes for all communities, particularly protected equality groups.	Development of the site will improve the environmental conditions of the locality through promoting better uses of the site and delivery of employment floorspace to modern standards. New development delivered to high accessibility standards should improve accessibility for all groups in society. The redevelopment will also improve the cultural needs of the site and South Bank area.	Population, Human Health
6. Housing. Ensuring everyone has the opportunity for an affordable decent home, quiet enjoyment of that home and the protection of local amenity.	Site will provide new housing improving access to good quality housing and delivered to high sustainability standards. Provision of affordable housing will increase the range and affordability of housing and assist in tackling homelessness and overcrowding. The tenure and mix of housing, including family units, will be provided to meet identified requirements ensuring Lambeth residents with more opportunities to access better quality homes.	Population, Human Health, Material Assets
7. Liveability and place. To design and sustain liveable,	Delivering new homes to standards set out in the Development Plan will provide new residential	Population, Human

SustA Objective	Community benefits against the objectives	SEA topic requirement
mixed-use physical and social environments that promotes long-term social cohesion, sustainable lifestyles, safety and security, and a sense of place.	amenity and access to open space and public realm which will promote social cohesion and a sense of place. Accessibility standards will combine with the above to provide child-friendly buildings and places.	Health, Material Assets, Landscape, Cultural Heritage (including architectural and archaeological heritage)
ENVIRONMENTAL		
8. Built and historic environment. Improve the quality, attractiveness, character and sustainability of the built environment through high quality design and protection of open space, valued views and designated and non-designated historic assets.	Redevelopment of the site will improve the visual attractiveness of the built environment and through delivery to high sustainability standards will improve the sustainability of the environment more generally. Current site contains Prince's Wharf: workspace and Gabriel's Wharf: Pop up style shops and restaurants and outside space. Redevelopment will conserve and improve attractiveness from existing and enhance the provision of cultural facilities. The redevelopment will also enhance the character of Southbank area, including historical and cultural value/potential and its contribution to local distinctiveness.	Landscape, Cultural Heritage (including architectural and archaeological heritage)
9. Transport and travel. Integrate planning and transport decisions, to reduce the need to travel, reduce reliance on the private car and the overall level of road traffic whilst prioritising walking, cycling and use of public transport.	As the site is within PTAL 6b, provision of car-free development and cycle parking standards will enhance active travel rates in the borough. Provision of on-site employment will also provide employment opportunities in the local area. Upper Ground covered by a Healthy Route initiative and Greenway (SOWN NP).	Population, Air, Human health, Climatic factors
10. Biodiversity. To protect, enhance and promote existing habitats and biodiversity, and to bring nature closer to people where possible.	Site is not within a biodiversity designation. The site is adjacent to open space (Bernie Spain Gardens). Application of the urban greening factor will provide a biodiversity net gain and wider environmental enhancement on the site which is currently limited in value. Urban greening will also bring people close to nature and application of Development Plan open space and public realm,	Biodiversity, Flora, Fauna, Landscape, Soil, Water

SustA Objective	Community benefits against the objectives	SEA topic requirement
	and private amenity standards will also improve access to such amenity. The development should look at opportunities to improve river ecology	
11. Green infrastructure. To create, manage and enhance green infrastructure.	Application of the urban greening factor will provide a biodiversity net gain and wider environmental enhancement on the site which is currently limited in value. Urban greening will also bring people close to nature and application of Development Plan open space and public realm, and private amenity standards will also improve access to such amenity.	Biodiversity, Flora, Fauna, Landscape, Soil, Water, Climatic Factors
12. Climate change and energy. Minimise energy consumption and increase energy efficiency and the use of renewable energy. Reduce greenhouse gases and prepare for the unavoidable effects of climate change throughout the life of the development.	Building to high sustainability standards including the policy requirement of the London Plan and the Lambeth Local Plan with respect to reduction in CO2 emissions will minimise energy consumption and promote energy efficiency and on-site renewable energy generation; and design solutions to adapt and mitigate climate change. This will be a considerable improvement to existing which is a workspace building and pop-up shops and restaurant with poor sustainability standards.	Climatic Factors, Materials Assets
13. Water resources and flood risk management. To protect and manage water resources (including groundwater) and to minimise flood risk.	Given that the site is located in flood zone 3 the design of the development, including the inclusion of mitigation measures such as sustainable drainage, tidal flood defence and maintenance strategy will be key to managing flood risk. Building to high sustainability standards including the policy requirement of the Thames Estuary 2100 plan, London Plan and the Lambeth Local Plan with respect to water efficiency and water supply measures, water quality improvements.	Water, Climatic Factors
14. Waste. Ensure that Lambeth manages its waste in a sustainable manner, minimising the production of waste and increasing re-use, recycling, remanufacturing and recovery rates.	Provision of on-site waste management processes will contribute towards minimisation of waste and making reuse and recycling easy for residents and visitors. This will also assist in meeting the London Plan apportionment and self-sufficiency targets.	Population, Material Assets
15. Air quality. To improve air quality and limit exposure to poor air quality.	Delivery of car-free development will reduce the amount of vehicle movements to and within the site. Building to high sustainability standards	Human health, Air,

SustA Objective	Community benefits against the objectives	SEA topic requirement
	including the policy requirement of the London Plan with respect to reduction in CO2 emissions will minimise energy consumption and promote energy efficiency, with implications for air quality.	Climatic Factors
ECONOMIC		
16. Local economy. To encourage and accommodate sustainable economic growth and employment opportunity.	Development of the site will potentially provide a mix of uses to include cultural institutions, office, retail at ground floor and residential and provide affordable workspace (where applicable) which should support local businesses and create local job opportunities. The redevelopment of the site will also support the role of South Bank area and contribute to tourism.	Population, Material Assets
17. Regeneration and efficient use of land. To ensure new development makes efficient use of land through the re-use of previously developed land, existing buildings and infrastructure, taking into account constraints such as contaminated land.	Redevelopment of the site will provide regeneration benefits and make the most efficient use of the land. Redevelopment of the site will provide environmental enhancement and promote the efficient, innovative and multifunctional use of land.	Material Assets, Soil
18. Tackling worklessness. Increase the amount of and access to employment generating activities and offer all residents the opportunity for rewarding, well-located and satisfying employment.	Re-provision of employment opportunities and create new retail and employment floorspace and cultural institution will strengthen the local economy and provide local access to employment as well as providing housing near areas of work. Development on the site is likely to trigger the Local Plan requirement for production of a site-specific Employment and Skills Plan (ESP). This will improve local job opportunities and opportunities and facilities for formal, informal and vocational learning for young people.	Population, Material Assets

SA9 – Gabriel's Wharf and Prince' Wharf - Map of Thames Tidal Breach Hazard Mapping (Source: Lambeth Lead Local Flood Authority – Lambeth LLFA)



SA8 – Stamford Street

1. Development site and location

1	Question	SA8 - Stamford Street
A	Where is the development site located?	Site is fronting Stamford Street. The site is located within wider urban block (Iroko housing development). • Waterloo Opportunity Area • South Bank and Waterloo Neighbourhood Planning Area • Central Activities Zone. • Within Iroko housing development. • Next to Coin Street Neighbourhood Centre.
B	What is the current use of the site?	The site is currently vacant.
C	Flood zone	Flood Zone 3 and an area benefitting from flood defences.

2. Development proposals

2	Question	SA8 - Stamford Street
A	Development proposals and uses	Community/office floorspace at ground floor and residential above
B	Vulnerability classification	Residential is classified as more vulnerable; employment including office is classified as less vulnerable
C	Lifetime of the development (residential 100 years, non-resi determined by experience)	100 years due to the residential units
D	Will the development proposals increase the overall number of occupants and/or people using the building or land, compared with the current use?	Yes the number of people using the buildings will increase from current vacant land.
E	Will the proposals change the nature or times of occupation or use, such that it may affect the degree of flood risk to these people? If this is the case, describe the extent of the change.	The site is currently unoccupied, but the intended hours of occupation will be 24hours due to the inclusion of residential properties.

3. Sequential test

3	Question	SA8 - Stamford Street
A	What other locations with a lower risk of flooding have you considered for the proposed development? If not why not?	See Sequential within PART A below
B	Flood zone 2- why not zone 1. Flood zone 3 why not 2.	The entire site is located within Flood Zone 3 (high risk) however is considered defended up to the 0.1% AEP event due to the Thames Tidal defences

4. Exception test (where required)

4	Question	SA8 - Stamford Street
A	To determine whether required, apply the matrix utilising the Vulnerability assessment against proposed uses	See Sequential within PART B below.
B	Would the proposed development provide wider sustainability benefits to the community? If so, could these benefits be considered to outweigh the flood risk to and from the proposed development? Consider the criteria for this having regard to the objectives of Draft SA DPD's SA/SEA framework	See Table 2 - SustA Objectives matrix.
C	What flood related risks will remain after the flood risk management and mitigation measures have been implemented?	The probability of modelled fluvial flooding and tidal breach extents at the site will remain the same as a result of the development, however both are considered very unlikely to occur due to the current level of protection from the Thames Tidal defences Through locating all residential properties above ground floor level and providing an evacuation plan in case of tidal breach event, the consequence of flooding will be reduced.

4	Question	SA8 - Stamford Street
		Basement uses will be restricted to commercial only and will not contain self-contained units or sleeping accommodation, to minimise the impact of a flood.
D	How can it be demonstrated that the proposed development will remain safe over its lifetime without increasing flood risk elsewhere? Principles for access and egress, design, defence, flood warnings and awareness	The development will remain safe for the lifetime of the development through consideration of the impacts of climate change to flood depths and rainfall intensities. Residential properties will be restricted to floors above ground level to ensure those most vulnerable will not be inundated and remain safe even during the most extreme flood event. Occupants will be registered to the Environment Agency's flood warning system, and through an Evacuation Plan clear instruction will be provided of where to evacuate should an extreme event occur. Initial options for refuge include: • the upper floors of the building should a breach of the Thames defences occur local to the site • Depending on the location of the breach, it may be possible to seek refuge, gain access or egress from Stamford Street and the direction of Waterloo Road, or Upper Ground towards Southwark or Belvedere Road. The development will include a Sustainable Drainage System that will seek to manage the site's surface water runoff as close as reasonably practicable to the greenfield runoff rate. This will provide substantial reduction of flood risk elsewhere given the existing site condition has 100% coverage of impermeable surfaces with uncontrolled runoff.

5. Site specific flood risk and surface water management

5	Question	SA8 - Stamford Street
A	How is flood risk at the site likely to be affected by climate change?	Lambeth SFRA 2013 sets out the recommended contingency allowances for net sea level rise for London and the south east from a 1990 base level, rising to 15mm/year by 2115. The Thames hydraulic model has also been used to simulate flood events incorporating increased fluvial flows and tide levels to represent the predicted effects of climate change. This is likely to mean that the Thames Barrier will be utilised more frequently meaning fewer high tides will flow upstream into central London.

<table>
<tr><th>5</th><th>Question</th><th>SA8 - Stamford Street</th></tr>
<tr><td>B</td><td>What are the main source(s) of flood risk to the site? (eg tidal/sea, fluvial or rivers, surface water, groundwater, other, history of flooding?).</td><td>The main source of flood risk is from a tidal breach and fluvial flooding from the River Thames, although this is considered highly unlikely to occur due to the existing Thames Tidal defences.

Environment Agency data suggests the defence was breached by overtopping during the 1928 flood and flooded the site. Since this event the flood defences have been raised to provide a 1in1000yr level of protection.</td></tr>
<tr><td>C</td><td>What is the probability of the site flooding?</td><td>
<table>
<tr><th>Source of flooding</th><th>Undefended probability</th><th>Level of protection</th><th>Risk</th></tr>
<tr><td>Fluvial (Flood Zone 3)</td><td>1% AEP</td><td>0.1% AEP</td><td>Low</td></tr>
<tr><td>Tidal (Breach)</td><td>Risk of flooding during 2005 and 2100 scenarios</td><td>0.1% AEP</td><td>Low</td></tr>
<tr><td>Surface water</td><td>0.1% AEP</td><td>-</td><td>Very Low</td></tr>
</table>
</td></tr>
<tr><td>D</td><td>What is the expected depth (m above OD) and level for the design flood? (fluvial (river) flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year)</td><td>The site is considered defended against the 1% AEP fluvial flood risk (i.e. Flood Zone 3) and tidal breach event, due to the 0.1% standard of protection from the Thames Tidal defences.

Should a tidal defence breach occur, the depths are:
• 2005 scenario: 4.385 to 5.89m AOD
• 2100 scenario: 5.01m to 6.98m AOD

It must be noted, the magnitude of the above depths is due to the current deep excavation on site that is visible within the LiDAR.</td></tr>
<tr><td>E</td><td>Are properties expected to flood internally in the design flood and to what depth?</td><td>All residential properties will be positioned above ground floor level and will therefore not be at risk of internal flooding. Commercial properties on the ground floor are at risk of flooding internally from a Thames breach, however the Thames Tidal Defences provides a 0.1% AEP level of protection.

In the very unlikely event of a breach the anticipated flood depth to the ground floor level will be in the region of 0.00m</td></tr>
</table>

5	Question	SA8 - Stamford Street
		to 0.75m (2005 scenario), or 0.1m to 1.25m with climate change (2100 Scenario).
F	What are the existing surface water drainage arrangements for the site?	Site consists almost entirely of hardstanding. Due to the age of the current building it is assumed all runoff directly discharged to the local combined sewer at an uncontrolled rate via a conventional drainage system.
G	If known, what (approximately) are the existing rates and volumes of surface water run-off generated by the site?	Based on a 60mm/hr rainfall intensity and 100% impermeable coverage (Cr=0.95), the entire site is expected to have an existing peak flow rate of 19/s. A six hour storm of the same intensity would generate 411m^3 of runoff.
H	How will you prevent run-off from the completed development causing an impact elsewhere?	A site specific Drainage Strategy will be required for the planning application to confirm the greenfield runoff rates and volumes, and to ensure the principles of the site's surface water management (i.e. SuDS) are achievable. The system will reduce the site's runoff rate to the greenfield equivalent, which has been estimated to be 0.67l/s (QBar). Given the site is spatially constrained, green infrastructure will likely be positioned on the roof space, however this will provide a reduction on the site's existing runoff volume. Lower level GI should still be explored within the architecture and landscaping designs.
I	Where applicable, what are the plans for the ongoing operation and/or maintenance of the surface water drainage systems?	The management and maintenance of the drainage system is to be confirmed, however it is anticipated a management and maintenance company will be responsible, with the building owner having the ultimate responsibility.
J	Sites not necessarily in high risk flood zone but in critical drainage area should consider surface water attenuation and drainage and may require some additional flood risk information (all sites in CDA over 1ha).	The site is not within a high flood risk area nor within an Environment Agency defined Critical Drainage Area. A sustainable drainage system will be required ordinarily due to the requirements of the NPPF. As of Nov 2020, Lambeth's Critical Drainage Areas (CDAs) are under review, and will be published within a new SWMP, that is anticipated to be published by March 2021.

6. Design of the development

6	Question	SA8 - Stamford Street
A	How will the development be made safe from flooding and the impacts of climate change, for its lifetime?	The site is considered to have a low risk of flooding; however, a residual risk exists from a tidal breach event during 2005 and 2100 scenarios. A breach flood is expected to be sudden and rapid, with basements and ground floor levels being most susceptible. The flood warning system would be capable of identifying a storm event required to cause a breach sufficiently in advance to allow occupants to either evacuate areas most at risk. To ensure the development remains safe for its lifetime, ground floor levels and below (i.e. below the depth of flooding) will be restricted to less vulnerable use types. The depth of flooding as a result of climate change is not anticipated to reach above ground floor level during a breach, and therefore occupants will remain safe. Development at ground floor level or below, will include where reasonably practicable, an increase in building thresholds and flood levels to 300mm above the modelled flood depth. These floor levels will use flood resilient and resistance building techniques as recommend by the Lambeth's SFRA As per the requirements on the NPPF, a Sustainable Drainage System will be installed as part of the development, and the impacts of climate change on rainfall intensity will need to be considered for the lifetime of the development.
B	How will you ensure that the development and any measures to protect the site from flooding will not cause any increase in flood risk off-site and elsewhere?	The risk of flooding to the site is considered low, however a residual risk of a tidal breach exists. Due to the low risk nature of the site, flood risk mitigation infrastructure is not proposed other than siting Less Vulnerable development at and above ground floor; using flood resilient and resistance building techniques at ground floor level and below; and forbidding sleeping accommodation at basement level. The development is situated on a site that was previously developed. The proposal will likely mirror the previous building's footprint and therefore not reduce the floodplain storage potential. The development will include a Sustainable Drainage System that will reduce the risk of flooding downstream.

6	Question	SA8 - Stamford Street
C	Have you taken into account the impacts of climate change, over the expected lifetime of the development?	A climate change factor of 40% will be applied to the design of the Sustainable Drainage System, this is in line with national requirements. Lambeth's SFRA recommended contingency allowances for sea level rise will be taken in to account in the design of the development up to year 2115, moreover the risk of flooding from a tidal breach with uplift from climate change for the year 2100 has been considered also.
D	Are there any opportunities offered by the development to reduce the causes and impacts of flooding?	A Sustainable Drainage System will be incorporated into the development and will reduce the rate of runoff as close as reasonably practicable to the greenfield rate. The use of green infrastructure to achieve this will be explored.
E	What are the proposals for managing and discharging surface water from the site, including any measures for restricting discharge rates?	A Sustainable Drainage System will be installed to reduce the rate of runoff as reasonably close to the greenfield runoff rate. An underground storage system with a flow control device will likely be used to manage the majority of the site's surface water runoff due to spatial constraints of the site. A green/blue roof will be expected at this site, as well as green infrastructure at ground level to provide enhanced biodiversity, amenity, and improved water quality, while also reducing the storage tank volume requirements.
F	Will it be possible for the development to reduce flood risk overall (eg through the provision of improved drainage)?	The development will include a SuDS which will reduce the risk of flooding to the site and elsewhere, however it is not possible to reduce the risk of fluvial/tidal flooding elsewhere within the confides of the site boundary.
G	Where appropriate, are you able to demonstrate how the occupants and users that may be more vulnerable to the impact of flooding (eg residents who will sleep in the building; people with health or mobility issues etc) will be located primarily in the parts of the building and site that are at lowest risk of flooding? If not, are there any overriding reasons why this	The approach of substitution has been considered for this development. All More Vulnerable use types will be restricted to above ground floor levels only. Less vulnerable use types such as commercial properties will be positioned at ground and basements levels. Sleeping accommodation will be prohibited at basement level. On the basis the site is currently occupied by less vulnerable use types, the consequence of a flood will at least remain the same as a result of the redevelopment. The provision of an

6	Question	SA8 - Stamford Street
	approach is not being followed?	emergency evacuation plan in case of a breach event will ensure the risk of the loss of life is minimised.

7. Other considerations

7	Question	SA8 - Stamford Street
	Local Flood Risk Management Strategy or Surface Water Management Plan, that will need to be considered when assessing and managing surface water matters.	Lambeth LLFA is current in the process of producing a new Surface Water Management Plan and redefining the borough's Critical Drainage Areas (CDAs), with the results expected to be published by March 2021. The document should be considered when developing the site's site-specific Flood Risk Assessment and Drainage Strategy.

PART A Sequential test information

For each proposed use within the site allocation	
Are any of the development proposals classified as 'Highly Vulnerable'?	No. It is not anticipated that any highly vulnerable uses will be located within the site. Due to the flood risk zone basement dwellings will be avoided.
Which category of the 'Flood Risk Vulnerability Classification' does each of the development sites proposed uses fall into?	It is likely that due to this location this site allocation will be for mix of uses including community uses and residential. As these uses fall within more than 1 category of vulnerability the most vulnerable classification has been used. Residential falls within the more vulnerable category.
Can the 'More Vulnerable' aspects of proposals be directed to parts of the site where the risk of flooding is lower?	The whole of the site is within flood risk zone 3 so the more vulnerable residential uses cannot be directed to areas of lower flood risk within the site.
Utilising SFRA, are there any other suitable sites?	Lambeth is an inner London borough with a substantial housing target within the London Plan, taken forward into the Lambeth Local Plan. The north of the borough contains the Waterloo and Vauxhall Opportunity Areas where significant residential and economic development is proposed. This strategy set out within the Local Plan. The site is within the Waterloo Opportunity Area.

	The north of the borough also contains the Central Activities Zone where mix of strategic functions, local uses and significant office functions is supported. Flood risk zone 3 covers most of the north of the borough. The remainder of the borough is located in flood risk zone 1. However due to the housing targets contained in the Lambeth Local Plan and the spatial distribution of development it is not possible to focus all development to the south of the borough. All identified sites whether in flood zones 1, 2 or 3, are considered to be required to meet the overall housing targets and other economic development aspirations for the borough. Windfall development on small sites will also contribute towards meeting the housing target. The Lambeth SFRA (2013) states that in Waterloo 'the whole development opportunity area resides in Flood Zone 3a' and 'in this case new development should be directed to areas at lowest probability and associated hazard of flooding within the flood cell and the flood vulnerability should be matched to the flood risk of the site e.g. higher vulnerability uses should be located on parts of the site with the lowest probability of flooding. Mapping in Appendix A of the SFRA indicates that the extents of Flood Zones 2 and 3 are very similar. Therefore the sites within these areas cannot be redirected to Flood Zone 1. Due to the flood risk zone the 'more vulnerable' uses would be located on the upper floors and the 'less vulnerable' uses (employment and neighbourhood uses) would be located on the ground floor. This would, therefore, reduce the effect of the probability of flooding on 'vulnerability' uses. As stated in the Lambeth Local Plan there is great competition for land on which to development, therefore severely limiting spatial options for development within flood risk zone 1 would not meet the borough's identified development needs.
Conclusions (utilising information such as housing targets, OA, IDP etc)	All of the site falls within flood zones 3. Given that the site allocation includes residential uses which are classified as 'more vulnerable' an Exceptions Test is required. A site specific Flood Risk Assessment would also be required for the potential development site to provide a greater level of

	understanding of the flood risks posed in respect of the proposed development.

PART B Exceptions Test

164. The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. For the exception test to be passed it should be demonstrated that:

NPPF Requirement	How could be addressed on site
(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and	Site provides the opportunity to provide a number of new homes and new employment uses on previously underdeveloped land. The site capacity will contribute towards meeting the London Plan housing targets for the borough. Table 2 below provides analysis against the objectives contained within the SUSTA. In summary the provision of new homes will improve access to good housing and provide affordable homes to meet community needs, employment floorspace will provide local job opportunities and community use will need the needs of the local community and facilitate social interaction. The redevelopment of the site will provide regeneration benefits and will be delivered to higher design, security, sustainability and accessibility standards which will provide considerable improvements to the current urban form and environmental performance of buildings on site. This will enable people to remain in their homes longer; promote active travel and facilitate health and wellbeing benefits; facilitate access to open space; and make more efficient use of resources, contributing towards climate change mitigation. Failure to develop the site will not secure these sustainability benefits. Although the site is located in flood zone 3, the Thames Barrier is in place which reduces the actual risk to the development significantly. The conclusions of the analysis conclude that redevelopment of the site for a mixed use of residential and employment will provide community benefits which are considered to outweigh the flood risk to and from the proposed development.
(b) the development will be safe for its lifetime taking account of the vulnerability of its users, without	The design of the development should ensure that the development remains safe over its lifetime through ensuring adequate access into and out of the site,

NPPF Requirement	How could be addressed on site
increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.	including under flood conditions, and being resilient and resistant to flood risk. These measures should include: • adopting a sequential approach to locating the most vulnerable elements of any scheme to higher ground and other locations within the site (where applicable); • inclusion of appropriate flood resistance measures and site-specific mitigation measures to basement and ground floor levels. Measures such as water resilient materials (concrete, closed cell insulation, brick walls instead of plasterboards, floor and wall tiles) installing cabling from above (I.e. drop cabling from the ceiling level) as listed in Part C; • buildings designed to withstand the hydrostatic forces from a breach; • Reduce the site's runoff rate and volume to the combined sewer system using a Sustainable Drainage System. • Occupants will be registered to the Environment Agency's Flood Warning system • Engagement with the Lambeth Emergency Planning team. Based on the sequential and exceptions test it was concluded that no other site is reasonably available in a zone of lower flood risk. There is a reasonable prospect of compliance with the second part of the Exception Test subject to an appropriate site layout and adoption of the recommendations of the Environment Agency's package of mitigation measures.
Residual risk and management processes	A residual risk of flooding from a Thames Tidal breach event will remain, however this is considered to have a very low probability of occurring. During such an event the basement and ground levels will be most susceptible to inundation. However, should raised thresholds be incorporated in to the design of the building the probability will be reduced. A site-specific Flood Risk Assessment must also be prepared in support of any planning application to confirm and provide further detail on the above. The FRA should also include practical management

NPPF Requirement	How could be addressed on site
	practices and solutions to ensure that any residual risk can be safely managed, including through emergency planning, provision of a site-specific flood evacuation plan, and consultation with the Environment Agency for any works planned within 8m of the main river watercourse or 16 metres of a tidal river

Table 2 - Site Allocations DPD Sustainability Appraisal (SustA) objectives matrix

SustA Objective	Community benefits against the objectives	SEA topic requirement
SOCIAL		
1. Crime and safety. Ensuring safe communities with reduced crime and disorder.	Development of the site will improve safety and security of the site from current. Where achieving Secure by Design standards this should improve the security of buildings and support a reduction in crime and the fear of crime. Increasing access across the site will also improve permeability of the area. The design of the development will ensure that the development remains safe over its lifetime to the climate change risks, including water shortage.	Population
2. Health and wellbeing. Promote a healthy community, including reducing health inequalities and the causes of ill health.	Delivering to car-free standards will improve use active methods of travel with health and wellbeing implications. Good quality standard of new houses within the new development standards set out in the Development Plan will help to improve health and wellbeing.	Population, Human Health
3. Access and services. Create an environment that is accessible to and fully inclusive for all people including the elderly and disabled and improve accessibility to key services and facilities.	New development delivered to high accessibility standards should enable people to remain in the homes for longer, releasing pressure on dedicated specialist housing. Provision of mixed-use development should also enable access to services and job opportunity in the locality and reduce the need to travel. Delivering new homes to standards set out in the Development Plan will provide new residential amenity and access to open space and public realm.	Population, Human Health

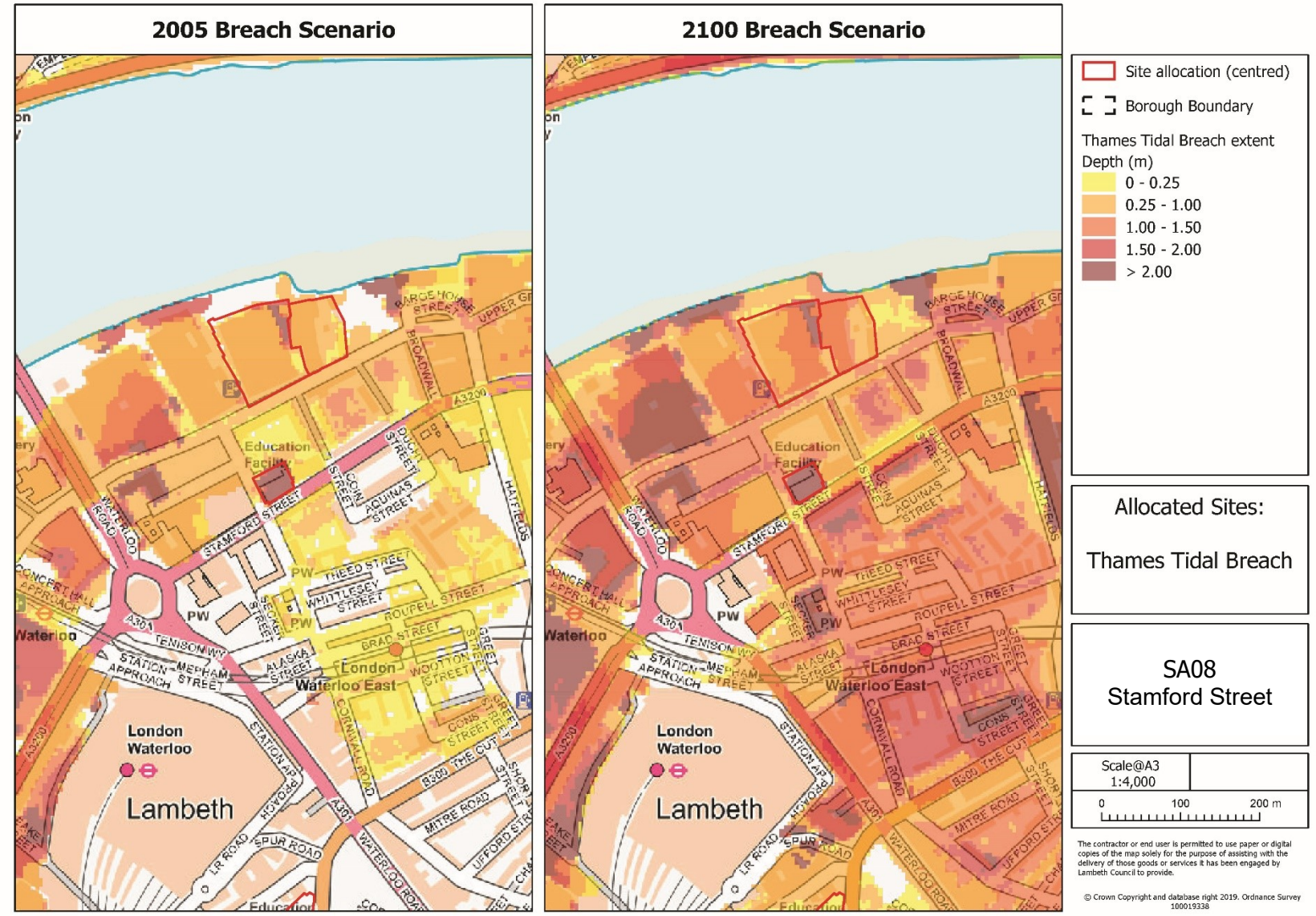
SustA Objective	Community benefits against the objectives	SEA topic requirement
4. Provision of essential infrastructure. To ensure that the necessary infrastructure is planned or in place to meet current or likely future demands.	Necessary infrastructure (such as green infrastructure, water and sewerage infrastructure, decentralised heating, etc.) will be provided or planned before redeveloping the site.	Population, Human Health, Material Assets
5. Equality and diversity. To tackle poverty and social exclusion and ensure equitable outcomes for all communities, particularly protected equality groups.	Development of the site will improve the environmental conditions of the locality through promoting better uses of the site and delivery of employment floorspace (including affordable workspace contribution) to modern standards. New development delivered to high accessibility standards should improve accessibility for all groups in society.	Population, Human Health
6. Housing. Ensuring everyone has the opportunity for an affordable decent home, quiet enjoyment of that home and the protection of local amenity.	Site will provide new housing improving access to good quality housing and delivered to high sustainability standards. Provision of affordable housing will increase the range and affordability of housing and assist in tackling homelessness and overcrowding. The tenure and mix of housing, including family units, will be provided to meet identified requirements ensuring Lambeth residents with more opportunities to access better quality homes.	Population, Human Health, Material Assets
7. Liveability and place. To design and sustain liveable, mixed-use physical and social environments that promotes long-term social cohesion, sustainable lifestyles, safety and security, and a sense of place.	Delivering new homes to standards set out in the Development Plan will provide new residential amenity and access to open space and public realm which will promote social cohesion and a sense of place. Accessibility standards will combine with the above to provide child-friendly buildings and places.	Population, Human Health, Material Assets, Landscape, Cultural Heritage (including architectural and archaeological heritage)
ENVIRONMENTAL		
8. Built and historic environment. Improve the quality, attractiveness, character and sustainability of	Redevelopment of the site will improve the visual attractiveness of the built environment and through delivery to high sustainability standards will improve the sustainability of the environment	Landscape, Cultural Heritage (including

SustA Objective	Community benefits against the objectives	SEA topic requirement
the built environment through high quality design and protection of open space, valued views and designated and non-designated historic assets.	more generally. Current site contains vacant land. Redevelopment will continue the street scene, improve attractiveness and sympathy from existing and improve the street frontage on Stamford Street. The redevelopment will also enhance the character of Waterloo Opportunity Area and Conservation Area, including historical and cultural value/potential and its contribution to local distinctiveness.	architectural and archaeological heritage)
9. Transport and travel. Integrate planning and transport decisions, to reduce the need to travel, reduce reliance on the private car and the overall level of road traffic whilst prioritising walking, cycling and use of public transport.	As the site is within PTAL 6b, provision of car-free development and cycle parking standards will enhance active travel rates in the borough. Provision of on-site employment will also provide employment opportunities in the local area. Upper Ground and Cornwall Road are covered by a Healthy Route initiative and Greenway (SOWN NDP).	Population, Air, Human health, Climatic factors
10. Biodiversity. To protect, enhance and promote existing habitats and biodiversity, and to bring nature closer to people where possible.	Site is not within a biodiversity designation. The site is in a close distance to open space (Bernie Spain Gardens). Application of the urban greening factor will provide a biodiversity net gain and wider environmental enhancement on the site which is currently limited in value. Urban greening will also bring people close to nature and application of Development Plan open space and public realm, and private amenity standards will also improve access to such amenity.	Biodiversity, Flora, Fauna, Landscape, Soil, Water
11. Green infrastructure. To create, manage and enhance green infrastructure.	Application of the urban greening factor will provide a biodiversity net gain and wider environmental enhancement on the site which is currently limited in value. Urban greening will also bring people close to nature and application of Development Plan open space and public realm, and private amenity standards will also improve access to such amenity.	Biodiversity, Flora, Fauna, Landscape, Soil, Water, Climatic Factors
12. Climate change and energy. Minimise energy consumption and increase energy efficiency and the use of renewable energy. Reduce	Building to high sustainability standards including the policy requirement of the London Plan and the Lambeth Local Plan with respect to reduction in CO2 emissions will minimise energy consumption and promote energy efficiency and on-site	Climatic Factors, Materials Assets

SustA Objective	Community benefits against the objectives	SEA topic requirement
greenhouse gases and prepare for the unavoidable effects of climate change throughout the life of the development.	renewable energy generation; and design solutions to adapt and mitigate climate change. This will be a considerable improvement to existing which is a vacant land with poor sustainability standards.	
13. Water resources and flood risk management. To protect and manage water resources (including groundwater) and to minimise flood risk.	Given that the site is located in flood zone 3 the design of the development, including the inclusion of mitigation measures such as sustainable drainage will be key to managing flood risk. Building to high sustainability standards including the policy requirement of the London Plan and the Lambeth Local Plan with respect to water efficiency and water supply measures, water quality improvements.	Water, Climatic Factors
14. Waste. Ensure that Lambeth manages its waste in a sustainable manner, minimising the production of waste and increasing re-use, recycling, remanufacturing and recovery rates.	Provision of on-site waste management processes will contribute towards minimisation of waste and making reuse and recycling easy for residents and visitors. This will also assist in meeting the London Plan apportionment and self-sufficiency targets.	Population, Material Assets
15. Air quality. To improve air quality and limit exposure to poor air quality.	Delivery of car-free development will reduce the amount of vehicle movements to and within the site. Building to high sustainability standards including the policy requirement of the London Plan with respect to reduction in CO2 emissions will minimise energy consumption and promote energy efficiency, with implications for air quality.	Human health, Air, Climatic Factors
ECONOMIC		
16. Local economy. To encourage and accommodate sustainable economic growth and employment opportunity.	Development of the site will potentially provide a mix of uses to include office and retail at ground and upper floors and residential and provide affordable workspace (where applicable) which should support local businesses and create local job opportunities. The redevelopment of the site will also support the role of South Bank area and Waterloo Opportunity Area.	Population, Material Assets
17. Regeneration and efficient use of land. To ensure new development makes efficient use of land through the re-use of previously developed land, existing buildings and	Redevelopment of the site will provide regeneration benefits and make the most efficient use of the land. Redevelopment of the site will provide environmental enhancement and promote the efficient, innovative and multifunctional use of land.	Material Assets, Soil

SustA Objective	Community benefits against the objectives	SEA topic requirement
infrastructure, taking into account constraints such as contaminated land.		
18. Tackling worklessness. Increase the amount of and access to employment generating activities and offer all residents the opportunity for rewarding, well-located and satisfying employment.	Re-provision of employment opportunities and create new employment floorspace will strengthen the local economy and provide local access to employment as well as providing housing near areas of work. Development on the site is likely to trigger the Local Plan requirement for production of a site-specific Employment and Skills Plan (ESP). This will improve local job opportunities and opportunities and facilities for formal, informal and vocational learning for young people.	Population, Material Assets

SA8 – Stamford Street - Map of Thames Tidal Breach Hazard Mapping (Source: Lambeth LLFA)



SA1 - Royal Street, SE1

1. Development site and location

1	Question	SA1 - Royal Street
A	Where is the development site located?	Site is opposite to St Thomas' Hospital, the site includes Holy Trinity Centre, 10 Royal Street, South of the river Sculpture, Canterbury House, Stangate House. • Waterloo Opportunity Area • Neighbourhood Planning Area • Central Activities Zone • MedTech Health Cluster
B	What is the current use of the site?	Current use is Residential, parking and part vacant.
C	Flood zone	Flood Zone 3 and an area benefitting from flood defences.

2. Development proposals

2	Question	SA1 - Royal Street
A	Development proposals and uses	Facilities serving MedTech hub. New offices with affordable workspace. Replacement residential with 35% affordable housing. Cultural uses to contribute to evolution of South Bank and Waterloo cultural cluster
B	Vulnerability classification	Residential and healthcare are classified as more vulnerable
C	Lifetime of the development (residential 100 years, non-resi determined by experience)	100 years due to the residential units
D	Will the development proposals increase the overall number of occupants and/or people using the building or land, compared with the current use?	Yes the number of people using the buildings will increase from current part vacant land.
E	Will the proposals change the nature or times of occupation or use, such that it may affect the degree of flood risk to these people? If this is the	The hours of occupation is not anticipated to change as a result of the development.

	case, describe the extent of the change.	

3. Sequential test

3	Question	SA1 - Royal Street
A	What other locations with a lower risk of flooding have you considered for the proposed development? If not why not?	See Sequential within PART A below
B	Flood zone 2- why not zone 1. Flood zone 3 why not 2.	The entire site is located within Flood Zone 3 (high risk) however is considered defended up to the 0.1% AEP event due to the Thames Tidal defences.

4. Exception test (where required)

4	Question	SA1 - Royal Street
A	To determine whether required, apply the matrix utilising the Vulnerability assessment against proposed uses	See Sequential within PART B below.
B	Would the proposed development provide wider sustainability benefits to the community? If so, could these benefits be considered to outweigh the flood risk to and from the proposed development? Consider the criteria for this having regard to the objectives of Draft SA DPD's SA/SEA framework	See Table 3 – Sustainability Appraisal Objectives matrix.
C	What flood related risks will remain after the flood risk management and mitigation measures have been implemented?	The probability of modelled fluvial flooding and tidal breach extents at the site will remain the same as a result of the development, however both are considered very unlikely to occur due to the current level of protection from the Thames Tidal defences. Through locating all residential properties above ground floor level and providing an evacuation plan in case of tidal breach event, the consequence of flooding will be reduced.

4	Question	SA1 - Royal Street
		Basement uses will be restricted to commercial only and will not contain self-contained units or sleeping accommodation, to minimise the impact of a flood.
D	How can it be demonstrated that the proposed development will remain safe over its lifetime without increasing flood risk elsewhere? Principles for access and egress, design, defence, flood warnings and awareness	The development will remain safe for the lifetime of the development through consideration of the impacts of climate change to flood depths and rainfall intensities. Residential properties will be restricted to floors above flood levels to ensure those most vulnerable will not be inundated, and therefore remain safe even during an extreme flood event. Occupants will be registered to the Environment Agency's flood warning system, and through an Evacuation Plan clear instruction will be provided of where to evacuate should an extreme event occur. Initial options for refuge include: • the upper floors of the building should a breach of the Thames defences occur local to the site. • Depending on the location of the breach, it is also possible to seek refuge, gain access or egress from Lower Marsh or Centaur Street. The development will include a Sustainable Drainage System that will seek to manage the site's surface water runoff as close as reasonably practicable to the greenfield runoff rate. This will provide a reduction of flood risk elsewhere given the existing site surface is predominately impermeable with uncontrolled runoff.

5. Site specific flood risk and surface water management

5	Question	SA1 - Royal Street
A	How is flood risk at the site likely to be affected by climate change?	Lambeth SFRA 2013 sets out the recommended contingency allowances for net sea level rise for London and the south east from a 1990 base level, rising to 15mm/year by 2115. The Thames hydraulic model has also been used to simulate flood events incorporating increased fluvial flows and tide levels to represent the predicted effects of climate change. This is likely to mean that the Thames Barrier will be utilised more frequently meaning fewer high tides will flow upstream into central London.
B	What are the main source(s) of flood risk to the site? (eg	The main source of flood risk is from a Thames Tidal breach when the impacts from climate change are considered (i.e.

<table>
<tr><th>5</th><th>Question</th><th>SA1 - Royal Street</th></tr>
<tr><td></td><td>tidal/sea, fluvial or rivers, surface water, groundwater, other, history of flooding?).</td><td>the 2100 breach scenario), although a risk to the southern part of the site exists during a 2005 breach event. Both events are considered highly unlikely to occur due to the tidal defences.</td></tr>
<tr><td>C</td><td>What is the probability of the site flooding?</td><td>
<table>
<tr><th>Source of flooding</th><th>Undefended probability</th><th>Level of protection</th><th>Risk</th></tr>
<tr><td>Fluvial (Flood zone 3)</td><td>1% AEP</td><td>0.1% AEP</td><td>Low</td></tr>
<tr><td>Tidal (Breach)</td><td>2005 Scenario: South of Royal Street at risk

2100 Scenario: Entire site at risk</td><td>0.1% AEP</td><td>Low</td></tr>
<tr><td>Surface water</td><td>Less than 0.1%</td><td>n/a</td><td>n/a</td></tr>
</table>
</td></tr>
<tr><td>D</td><td>What is the expected depth (m above OD) and level for the design flood? (fluvial (river) flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year)</td><td>The site is considered defended against the 1% AEP fluvial flood risk (i.e. Flood Zone 3) and tidal breach event, due to the 0.1% standard of protection from the Thames Tidal defences.

Should a tidal defence breach occur, the depths are:
• 2005 scenario: no risk to 4.59m AOD
• 2100 scenario: 4.279m to 4.93m AOD</td></tr>
<tr><td>E</td><td>Are properties expected to flood internally in the design flood and to what depth?</td><td>The majority of the development is not expected to flood during a 2005 scenario, although parts south of Royal Street has a risk of flooding, with depths of 0.025m to 0.442m
The majority of the site is at risk of flooding during a 2100 scenario, with depths between 0.147m to 1.44m.</td></tr>
<tr><td>F</td><td>What are the existing surface water drainage arrangements for the site?</td><td>Due to the age of the current building it is assumed all runoff from impermeable surfaces directly discharges to the local combined sewer at an uncontrolled rate. There are areas of green space in the form of grassed lawns, which will provide limited runoff rate and volume control.</td></tr>
<tr><td>G</td><td>If known, what (approximately) are the existing rates and volumes of surface water run-off generated by the site?</td><td>Based on a 60mm/hr rainfall intensity and 100% impermeable coverage (Cr=0.95), the entire site is expected to have an existing peak flow rate of 380 l/s.
A six hour storm of the same intensity would generate 8215m^3 of runoff.</td></tr>
</table>

5	Question	SA1 - Royal Street
H	How will you prevent run-off from the completed development causing an impact elsewhere?	A site-specific Drainage Strategy will be required for the planning application to confirm the greenfield runoff rates and volumes, and to ensure the principles of the site's surface water management (i.e. SuDS) are achievable. The system will reduce the site's runoff rate to the greenfield equivalent, which has been estimated to be 12.75 l/s (QBar). It is expected sections areas of hardstanding will be replaced with green infrastructure such as green/blue roofs and ground level planting, to provide amenity, biodiversity and water quality and quantity management.
I	Where applicable, what are the plans for the ongoing operation and/or maintenance of the surface water drainage systems?	The management and maintenance of the drainage system is to be confirmed, however it is anticipated a management and maintenance company will be responsible, with the building/site owner having the ultimate responsibility.
J	Sites not necessarily in high risk flood zone but in critical drainage area should consider surface water attenuation and drainage and may require some additional flood risk information (all sites in CDA over 1ha).	The site is not within a high flood risk area nor within an Environment Agency defined Critical Drainage Area. A sustainable drainage system will be required ordinarily due to the requirements of the NPPF. As of Nov 2020, Lambeth's Critical Drainage Areas (CDAs) are under review, and will be published within a new SWMP, that is anticipated to be published by March 2021.

6. Design of the development

6	Question	SA1 - Royal Street
A	How will the development be made safe from flooding and the impacts of climate change, for its lifetime?	The development is considered safe on the basis the risk of flooding is solely from a Thames Tidal breach event when the impacts of climate change are considered (i.e. the year 2100). To minimise the risk and consequence of flooding sleeping accommodation should be restricted to the ground floor or above only (i.e. sleeping accommodation at basement level will not be permitted). As per the requirements on the NPPF, a Sustainable Drainage System will be installed as part of the development, and the impacts of climate change on rainfall intensity will need to be considered for the lifetime of the development.
B	How will you ensure that the development and any measures to protect the site from flooding will not cause	The risk of flooding to the site is considered low, however a residual risk of a tidal breach exists.

6	Question	SA1 - Royal Street
	any increase in flood risk off-site and elsewhere?	Due to the low risk nature of the site, flood risk mitigation infrastructure is not proposed other than siting Less Vulnerable development at and above ground floor; using flood resilient and resistance building techniques at ground floor level and below; and forbidding sleeping accommodation at basement level. It is likely the proposed layout will differ from the existing layout, however due to the very low risk and depth of flooding the development is unlikely alter the risk of flooding elsewhere. The development will include a Sustainable Drainage System that will reduce the risk of flooding downstream.
C	Have you taken into account the impacts of climate change, over the expected lifetime of the development?	A climate change factor of 40% will be applied to the design of the Sustainable Drainage System, this is in line with national requirements. Lambeth's SFRA recommended contingency allowances for sea level rise will be taken in to account in the design of the development up to year 2115, moreover the risk of flooding from a tidal breach with uplift from climate change for the year 2100 has been considered also.
D	Are there any opportunities offered by the development to reduce the causes and impacts of flooding?	A Sustainable Drainage System will be incorporated into the development and will reduce the rate of runoff as close as reasonably practicable to the greenfield rate. The use of green infrastructure to achieve this will be explored.
E	What are the proposals for managing and discharging surface water from the site, including any measures for restricting discharge rates?	A Sustainable Drainage System will be installed to reduce the rate of runoff as reasonably close to the greenfield runoff rate. An underground storage system with a flow control device will likely be used to manage the majority of the site's surface water runoff due to spatial constraints of the site. A green/blue roof will be expected at this site, as well as green infrastructure at ground level to provide enhanced biodiversity, amenity, and improved water quality, while also reducing the storage tank volume requirements.
F	Will it be possible for the development to reduce flood risk overall (eg through the	The development will include a SuDS which will reduce the risk of flooding to the site and elsewhere, however it is not

6	Question	SA1 - Royal Street
	provision of improved drainage)?	possible to reduce the risk of fluvial/tidal flooding elsewhere within the confides of the site boundary.
G	Where appropriate, are you able to demonstrate how the occupants and users that may be more vulnerable to the impact of flooding (eg residents who will sleep in the building; people with health or mobility issues etc) will be located primarily in the parts of the building and site that are at lowest risk of flooding? If not, are there any overriding reasons why this approach is not being followed?	The approach of substitution has been considered for this development. All More Vulnerable use types (e.g. residential) will be positioned outside the area at risk and/or above ground floor. Less vulnerable use types such as commercial properties can be positioned across the entire ground floor level and basements levels, although sleeping accommodation will be prohibited at basement level.

7. Other considerations

7	Question	SA1 - Royal Street
	Local Flood Risk Management Strategy or Surface Water Management Plan, that will need to be considered when assessing and managing surface water matters.	Lambeth LLFA is current in the process of producing a new Surface Water Management Plan and redefining the borough's Critical Drainage Areas (CDAs), with the results expected to be published by March 2021. The document should be considered when developing the site's site-specific Flood Risk Assessment and Drainage Strategy.

PART A Sequential test information

For each proposed use within the site allocation	
Are any of the development proposals classified as 'Highly Vulnerable'?	No. It is not anticipated that any highly vulnerable uses will be located within the site. Due to the flood risk zone basement dwellings will be avoided.
Which category of the 'Flood Risk Vulnerability Classification' does each of the	It is likely that due to this location this site allocation will be for mix of uses including healthcare and residential. These uses fall within the 'more vulnerable' category.

development sites proposed uses fall into?	
Can the 'More Vulnerable' aspects of proposals be directed to parts of the site where the risk of flooding is lower?	The whole of the site is within flood risk zone 3 so the more vulnerable residential uses cannot be directed to areas of lower flood risk within the site.
Utilising SFRA, are there any other suitable sites?	Lambeth is an inner London borough with a substantial housing target within the London Plan, taken forward into the Lambeth Local Plan. The north of the borough contains the Waterloo and Vauxhall Opportunity Areas where significant residential and economic development is proposed. This strategy set out within the Local Plan. The site is within the Waterloo Opportunity Area. It would not be possible to meet the development targets for the opportunity area as set out within the London Plan should sites within flood risk zone 3 not be developed. Flood risk zone 3 covers most of the north of the borough. The remainder of the borough is located in flood risk zone 1. However due to the housing targets contained in the Lambeth Local Plan and the spatial distribution of development it is not possible to focus all development to the south of the borough. All identified sites whether in flood zones 1, 2 or 3, are considered to be required to meet the overall housing targets, other economic and social development aspirations for the borough. Windfall development on small sites will also contribute towards meeting the housing target. The Lambeth SFRA (2013) states that in Waterloo 'the whole development opportunity area resides in Flood Zone 3a' and 'in this case new development should be directed to areas at lowest probability and associated hazard of flooding within the flood cell and the flood vulnerability should be matched to the flood risk of the site e.g. higher vulnerability uses should be located on parts of the site with the lowest probability of flooding. Mapping in Appendix A of the SFRA indicates that the extents of Flood Zones 2 and 3 are very similar. Therefore the sites within these areas cannot be redirected to Flood Zone 1. Due to the flood risk zone the 'more vulnerable' uses would be located on the upper floors. This would, therefore, reduce the effect of the probability of flooding on 'vulnerability' uses. As stated in the Local Plan there is great competition for land on which to development, therefore severely limiting spatial options

	for development within flood risk zone 1 would not meet the borough's identified development needs.
Conclusions (utilising information such as housing targets, OA, IDP etc)	All of the site falls within flood zones 3. Given that the site allocation includes residential and healthcare uses which are classified as 'more vulnerable' an Exceptions Test is required. A site specific Flood Risk Assessment would also be required for the potential development site to provide a greater level of understanding of the flood risks posed in respect of the proposed development.

PART B Exceptions Test

164. The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. For the exception test to be passed it should be demonstrated that:

NPPF Requirement	**How could be addressed on site**
(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and	Site provides the opportunity to provide a significant number of new homes and new employment uses in healthcare sector on previously developed land. The site capacity will contribute towards meeting the London Plan housing targets for the borough. Table 3 below provides analysis against the objectives contained within the SUSTA framework. In summary the provision of new homes will improve access to good housing and provide affordable homes to meet community needs, employment in healthcare sector and new employment will provide local job opportunities and healthcare service will meet community needs for local and the borough. The redevelopment of the site will provide regeneration benefits and will be delivered to higher design, security, sustainability and accessibility standards which will provide considerable improvements to the current urban form and environmental performance of buildings on site and health value. This will enable people to remain in their homes longer; promote active travel and facilitate health and wellbeing benefits; facilitate access to open space; increase access to healthcare services; and make more efficient use of resources, contributing towards climate change mitigation. Failure to develop the site will not secure these sustainability benefits.

NPPF Requirement	How could be addressed on site
	Although the site is located in flood zone 3, the Thames Barrier is in place which reduces the actual risk to the development significantly. The conclusions of the analysis conclude that redevelopment of the site for a mixed use of residential and healthcare will provide community benefits which are considered to outweigh the flood risk to and from the proposed development.
(b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.	The design of the development should ensure that the development remains safe over its lifetime through ensuring adequate access into and out of the site, including under flood conditions, and being resilient and resistant to flood risk. These measures should include: • adoption of a sequential approach to location of the most vulnerable elements of any scheme to higher ground and other locations within the site (where applicable); • inclusion of appropriate flood resistance measures and site-specific mitigation measures to basement and ground floor levels. Measures such as water resilient materials (concrete, closed cell insulation, brick walls instead of plasterboards, floor and wall tiles) installing cabling from above (I.e. drop cabling from the ceiling level) as listed in Part C; • buildings designed to withstand the hydrostatic forces from a breach; • Reduce the site's runoff rate and volume to the combined sewer system using a Sustainable Drainage System. • Occupants will be registered to the Environment Agency's Flood Warning system • Engagement with the Lambeth Emergency Planning team. Based on the sequential and exceptions test it was concluded that no other site is reasonably available in a zone of lower flood risk. There is a reasonable prospect of compliance with the second part of the Exception Test subject to an appropriate site layout and adoption of the recommendations of the Environment Agency's package of mitigation measures.

NPPF Requirement	How could be addressed on site
Residual risk and management processes	A residual risk of flooding from a Thames Tidal breach event will remain, however this is considered to have a very low probability of occurring. During such an event the basement and ground levels will be most susceptible to inundation. However, should raised thresholds be incorporated into the design of the building the probability will be reduced. Flood risk will be managed through locating the most vulnerable use types outside the areas at most risk of flooding. There is no intention of installing flood mitigation infrastructure, except for flood resilient measures and resistance materials at ground and basement levels, although raising the building's threshold levels should be explored. A site-specific Flood Risk Assessment must also be prepared in support of any planning application to provide further detail on the above. The FRA should also include practical management practices and solutions to ensure that any residual risk can be safely managed, including through emergency planning, provision of a site-specific flood evacuation plan, and consultation with the Environment Agency for any works planned within 8m of the main river watercourse and 16 metres of a tidal river.

Table 2 - Site Allocations DPD Sustainability Appraisal (SustA) objectives matrix

SustA Objective	Community benefits against the objectives	SEA topic requirement
SOCIAL		
1. Crime and safety. Ensuring safe communities with reduced crime and disorder.	Development of the site will improve safety and security of the site from current. Where achieving Secure by Design standards this should improve the security of buildings and support a reduction in crime and the fear of crime. Increasing access across the site will also improve permeability of the area. The design of the development will ensure that the development remains safe over its lifetime to the climate change risks, including water shortage.	Population

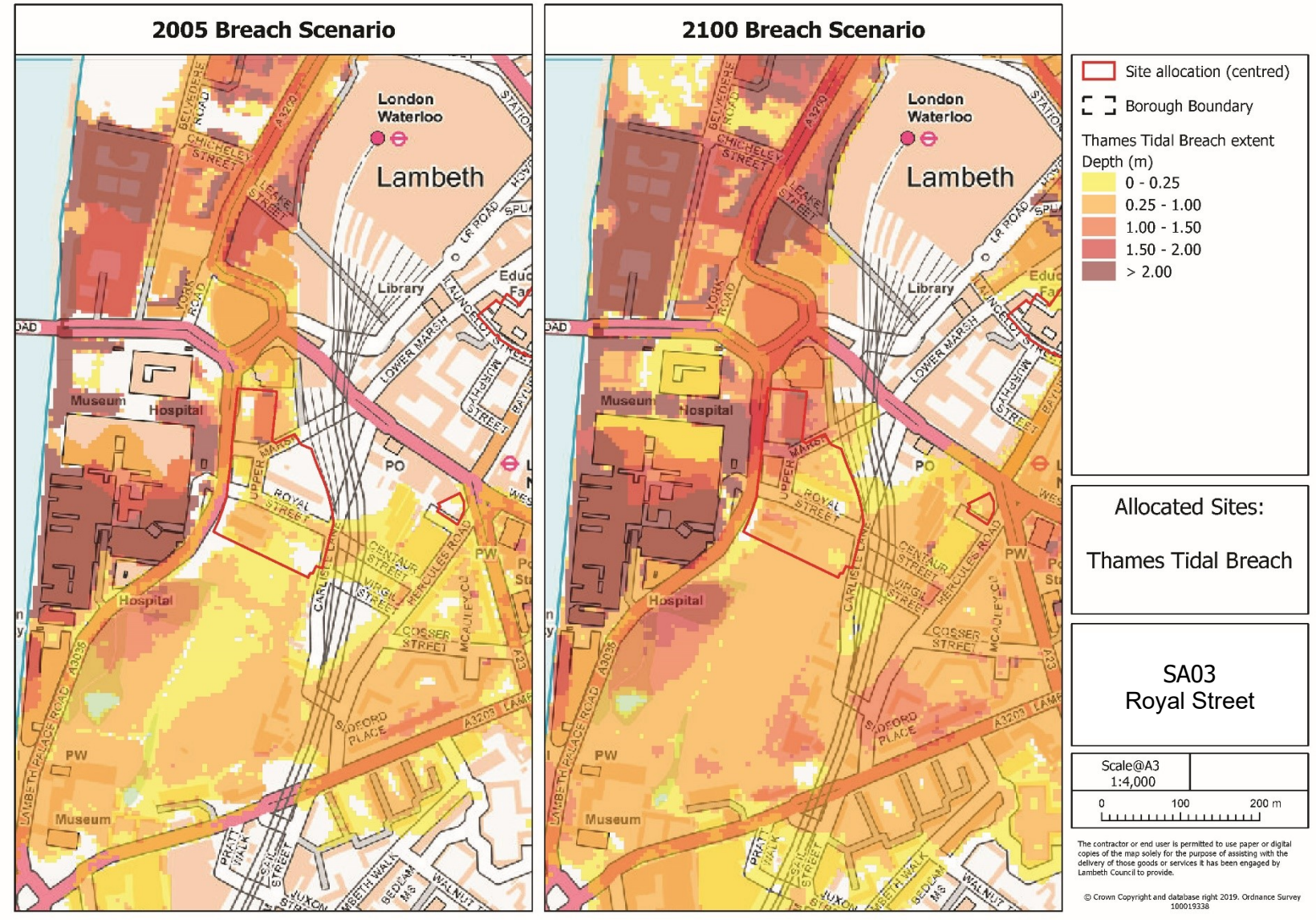
SustA Objective	Community benefits against the objectives	SEA topic requirement
2. Health and wellbeing. Promote a healthy community, including reducing health inequalities and the causes of ill health.	Delivering to car-free standards will improve use active methods of travel with health and wellbeing implications and improve air quality. Good quality standard of new houses within the new development standards set out in the Development Plan will help to improve health and wellbeing. The site will deliver an expansion of the St Thomas' Hospital in the form of offices and research laboratories which will provide expertise in medical care.	Population, Human Health
3. Access and services. Create an environment that is accessible to and fully inclusive for all people including the elderly and disabled and improve accessibility to key services and facilities.	New development delivered to high accessibility standards should enable people to remain in the homes for longer, releasing pressure on dedicated specialist housing. Provision of mixed-use development should also enable access to services and job opportunity in the locality and reduce the need to travel. Delivering new homes to standards set out in the Development Plan will provide new residential amenity and access to open space and public realm.	Population, Human Health
4. Provision of essential infrastructure. To ensure that the necessary infrastructure is planned or in place to meet current or likely future demands.	Provision of essential infrastructure as healthcare use for the expansion of St Thomas' Hospital will meet the current and future local and the borough demands.	Population, Human Health, Material Assets
5. Equality and diversity. To tackle poverty and social exclusion and ensure equitable outcomes for all communities, particularly protected equality groups.	Development of the site will improve the environmental conditions of the locality through promoting better uses of the site and delivery of employment floorspace and essential infrastructure to modern standards. New development delivered to high accessibility standards should improve accessibility for all groups in society. The redevelopment will also improve the health needs of the site and Lambeth.	Population, Human Health
6. Housing. Ensuring everyone has the opportunity for an affordable decent home, quiet enjoyment of that home and the protection of local amenity.	Site will provide new housing improving access to good quality housing and delivered to high sustainability standards. Provision of affordable housing will increase the range and affordability of housing and assist in tackling homelessness and overcrowding. The tenure and mix of housing, including family units, will be provided to meet identified requirements ensuring Lambeth	Population, Human Health, Material Assets

SustA Objective	Community benefits against the objectives	SEA topic requirement
	residents with more opportunities to access better quality homes.	
7. Liveability and place. To design and sustain liveable, mixed-use physical and social environments that promotes long-term social cohesion, sustainable lifestyles, safety and security, and a sense of place.	Delivering new homes to standards set out in the Development Plan will provide new residential amenity and access to open space and public realm which will promote social cohesion and a sense of place. Accessibility standards will combine with the above to provide child-friendly buildings and places.	Population, Human Health, Material Assets, Landscape, Cultural Heritage (including architectural and archaeological heritage)
ENVIRONMENTAL		
8. Built and historic environment. Improve the quality, attractiveness, character and sustainability of the built environment through high quality design and protection of open space, valued views and designated and non-designated historic assets.	Redevelopment of the site will improve the visual attractiveness of the built environment and through delivery to high sustainability standards will improve the sustainability of the environment more generally. Current site contains residential, parking and part vacant. Redevelopment will conserve and improve attractiveness from existing and enhance the provision of healthcare facilities. The redevelopment will also enhance the character of St Thomas' Hospital area.	Landscape, Cultural Heritage (including architectural and archaeological heritage)
9. Transport and travel. Integrate planning and transport decisions, to reduce the need to travel, reduce reliance on the private car and the overall level of road traffic whilst prioritising walking, cycling and use of public transport.	As the site is within PTAL 6b, minimises traffic generation and includes parking provision to support health uses and cycle parking standards will enhance active travel rates in the borough. Provision of on-site employment will also provide employment opportunities in the local area. Upper Marsh and Royal Street covered by a Healthy Route initiative. Carlisle Lane covered by a Healthy Route initiative and Greenway (SOWN NDP).	Population, Air, Human health, Climatic factors
10. Biodiversity. To protect, enhance and promote existing habitats and biodiversity, and to bring nature closer to people where possible.	Site is not within a biodiversity designation. The site is adjacent to open space (Archbishop's Park). Application of the urban greening factor will provide a biodiversity net gain and wider environmental enhancement on the site which is currently limited in value. Urban greening will also bring people close to nature and application of Development Plan open space and public realm,	Biodiversity, Flora, Fauna, Landscape, Soil, Water

SustA Objective	Community benefits against the objectives	SEA topic requirement
	and private amenity standards will also improve access to such amenity.	
11. Green infrastructure. To create, manage and enhance green infrastructure.	Application of the urban greening factor will provide a biodiversity net gain and wider environmental enhancement on the site which is currently limited in value. Urban greening will also bring people close to nature and application of Development Plan open space and public realm, and private amenity standards will also improve access to such amenity.	Biodiversity, Flora, Fauna, Landscape, Soil, Water, Climatic Factors
12. Climate change and energy. Minimise energy consumption and increase energy efficiency and the use of renewable energy. Reduce greenhouse gases and prepare for the unavoidable effects of climate change throughout the life of the development.	Building to high sustainability standards including the policy requirement of the London Plan and the Lambeth Local Plan with respect to reduction in CO2 emissions will minimise energy consumption and promote energy efficiency and on-site renewable energy generation; and design solutions to adapt and mitigate climate change. This will be a considerable improvement to existing which is a residential, parking and part vacant with poor sustainability standards.	Climatic Factors, Materials Assets
13. Water resources and flood risk management. To protect and manage water resources (including groundwater) and to minimise flood risk.	Given that the site is located in flood zone 3 the design of the development, including the inclusion of mitigation measures such as sustainable drainage will be key to managing flood risk. Building to high sustainability standards including the policy requirement of the London Plan and the Lambeth Local Plan with respect to water efficiency and water supply measures, water quality improvements.	Water, Climatic Factors
14. Waste. Ensure that Lambeth manages its waste in a sustainable manner, minimising the production of waste and increasing re-use, recycling, remanufacturing and recovery rates.	Provision of on-site waste management processes will contribute towards minimisation of waste and making reuse and recycling easy for residents and visitors. This will also assist in meeting the London Plan apportionment and self-sufficiency targets.	Population, Material Assets
15. Air quality. To improve air quality and limit exposure to poor air quality.	Minimises traffic generation and includes parking provision to support health uses will reduce the amount of vehicle movements to and within the site. Building to high sustainability standards including the policy requirement of the London Plan with respect to reduction in CO2 emissions	Human health, Air, Climatic Factors

SustA Objective	Community benefits against the objectives	SEA topic requirement
	will minimise energy consumption and promote energy efficiency, with implications for air quality.	
ECONOMIC		
16. Local economy. To encourage and accommodate sustainable economic growth and employment opportunity.	Development of the site will potentially provide a mix of uses to include healthcare expansion to St Thomas' Hospital which should support local businesses and create local job opportunities. The redevelopment of the site will also support the role of the role of the site contributing to MedTech Health Cluster.	Population, Material Assets
17. Regeneration and efficient use of land. To ensure new development makes efficient use of land through the re-use of previously developed land, existing buildings and infrastructure, taking into account constraints such as contaminated land.	Redevelopment of the site will provide regeneration benefits and make the most efficient use of the land. Redevelopment of the site will provide environmental enhancement and promote the efficient, innovative and multifunctional use of land.	Material Assets, Soil
18. Tackling worklessness. Increase the amount of and access to employment generating activities and offer all residents the opportunity for rewarding, well-located and satisfying employment.	Provision of employment opportunities will strengthen the local economy and provide local access to employment as well as providing housing near areas of work. Development on the site is likely to trigger the Local Plan requirement for production of a site-specific Employment and Skills Plan (ESP). This will improve local job opportunities and opportunities and facilities for formal, informal and vocational learning for young people.	Population, Material Assets

SA1 – Royal Street - Map of Thames Tidal Breach Hazard Mapping (Source: Lambeth LLFA)



SA2 - St Thomas' Hospital campus, South Bank

1. Development site and location

1	Question	SA2 - St Thomas' Hospital campus
A	Where is the development site located?	Site is the St Thomas' Hospital. • Waterloo Opportunity Area • Neighbourhood Planning Area • Central Activities Zone • MedTech Health Cluster
B	What is the current use of the site?	Current use is hospital.
C	Flood zone	Flood Zone 3 and an area benefitting from flood defences.

2. Development proposals

2	Question	SA2 - St Thomas' Hospital campus
A	Development proposals and uses	Hospital and ancillary uses. Reprovision of Florence Nightingale Museum on site or at an appropriate alternative location.
B	Vulnerability classification	Healthcare are classified as more vulnerable.
C	Lifetime of the development (residential 100 years, non-resi determined by experience)	
D	Will the development proposals increase the overall number of occupants and/or people using the building or land, compared with the current use?	Yes the number of people using the buildings will increase from current use as a reconfiguration of the existing use type will bring modern buildings.
E	Will the proposals change the nature or times of occupation or use, such that it may affect the degree of flood risk to these people? If this is the case, describe the extent of the change.	The hours of occupation is not anticipated to change as a result of the development.

3. Sequential test

3	Question	SA2 - St Thomas' Hospital campus
A	What other locations with a lower risk of flooding have you considered for the proposed development? If not why not?	See Sequential within PART A below
B	Flood zone 2- why not zone 1. Flood zone 3 why not 2.	The entire site is located within Flood Zone 3 (high risk) however is considered defended up to the 0.1% AEP event due to the Thames Tidal defences.

4. Exception test (where required)

4	Question	SA2 – St Thomas' Hospital campus
A	To determine whether required, apply the matrix utilising the Vulnerability assessment against proposed uses	See Sequential within PART B below.
B	Would the proposed development provide wider sustainability benefits to the community? If so, could these benefits be considered to outweigh the flood risk to and from the proposed development? Consider the criteria for this having regard to the objectives of Draft SA DPD's SA/SEA framework	See Table 4 – Sustainability Appraisal Objectives matrix.
C	What flood related risks will remain after the flood risk management and mitigation measures have been implemented?	The probability of modelled fluvial flooding and tidal breach extents at the site will remain the same as a result of the development, however both are considered very unlikely to occur due to the current level of protection from the Thames Tidal defences. Through providing an evacuation plan in case of tidal breach event, the consequence of flooding will be reduced. Basement uses will be restricted to commercial only and will not contain self-contained units, sleeping accommodation or vulnerable uses to minimise the impact of a flood.

4	Question	SA2 – St Thomas' Hospital campus
D	How can it be demonstrated that the proposed development will remain safe over its lifetime without increasing flood risk elsewhere? Principles for access and egress, design, defence, flood warnings and awareness	The development will remain safe for the lifetime of the development through consideration of the impacts of climate change to flood depths and rainfall intensities. As the development is a reconfiguration of the existing use type, the NPPF vulnerability classification will remain the same and therefore the risk of flooding will also remain. Occupants will be registered to the Environment Agency's flood warning system, and through an Evacuation Plan clear instruction will be provided of where to evacuate should an extreme event occur. Initial options for refuge include: • the upper floors of the building should a breach of the Thames defences occur local to the site. • Depending on the location of the breach, it is also possible to seek refuge, gain access or egress from. The development will include a Sustainable Drainage System that will seek to manage the site's surface water runoff as close as reasonably practicable to the greenfield runoff rate. This will provide a reduction of flood risk elsewhere given the existing site surface is predominately impermeable with uncontrolled runoff. The development will ensure the tidal flood defences have a minimum life expectancy of 100 years and the statutory crest levels are maintained in accordance with the Thames Estuary 2100 plan. The development will ensure the tidal flood defence are not structurally tied to a non-flood defence structure, including buildings, foundations, piers, jetties and bridges. The development will provide a 16 metre safeguarded setback on the landward side of the tidal flood defences to ensure they can be inspected, maintained, raised and replaced in the future. The development will have a maintenance strategy in place to ensure the defences are maintained to the Environment Agency's required standards for the lifetime of the development. The development will have a maintenance strategy in place to ensure that outfalls discharging directly into the river are

4	Question	SA2 – St Thomas' Hospital campus
		maintained to the Environment Agency's required standards for the lifetime of the development.

5. Site specific flood risk and surface water management

5	Question	SA2 - St Thomas' Hospital campus
A	How is flood risk at the site likely to be affected by climate change?	Lambeth SFRA 2013 sets out the recommended contingency allowances for net sea level rise for London and the south east from a 1990 base level, rising to 15mm/year by 2115. The Thames hydraulic model has also been used to simulate flood events incorporating increased fluvial flows and tide levels to represent the predicted effects of climate change. This is likely to mean that the Thames Barrier will be utilised more frequently meaning fewer high tides will flow upstream into central London.
B	What are the main source(s) of flood risk to the site? (eg tidal/sea, fluvial or rivers, surface water, groundwater, other, history of flooding?).	The main source of flood risk is from a tidal breach and fluvial flooding from the River Thames, although this is considered highly unlikely to occur due to the existing Thames Tidal defences. Environment Agency data suggests the defence was breached by overtopping during the 1928 flood. Since this event the flood defences have been raised to provide a 1in1000yr (0.1% AEP) level of protection.
C	What is the probability of the site flooding?	<table><tr><th>Source of flooding</th><th>Undefended probability</th><th>Level of protection</th><th>Risk</th></tr><tr><td>Fluvial (Flood zone 3)</td><td>1% AEP</td><td>0.1% AEP</td><td>Low</td></tr><tr><td>Tidal (Breach)</td><td>2005 Scenario: South of Royal Street at risk 2100 Scenario: Entire site at risk</td><td>0.1% AEP</td><td>Low</td></tr><tr><td>Surface water</td><td>Less than 0.1%</td><td>n/a</td><td></td></tr></table>
D	What is the expected depth (m above OD) and level for the design flood? (fluvial (river) flooding likely to occur with a 1% annual probability	The site is considered defended against the 1% AEP fluvial flood risk (i.e. Flood Zone 3) and tidal breach event, due to the 0.1% standard of protection from the Thames Tidal defences.

5	Question	SA2 - St Thomas' Hospital campus
	(a 1 in 100 chance each year)	Should a tidal defence breach occur, the depths are: • 2005 scenario: 4.33m to 7.77m AOD • 2100 scenario: 4.34m to 8.74m AOD
E	Are properties expected to flood internally in the design flood and to what depth?	As the proposed development is a reconfiguration of the existing use type the NPPF vulnerability classification and the risk of flooding will remain the same. Healthcare uses on the ground floor are at risk of flooding internally from a Thames breach, however the Thames Tidal Defences provides a 0.1% AEP level of protection. In the very unlikely event of a breach the anticipated flood depth to the ground floor level will be in the region of: • 2005 scenario: 0.00m to 3.44m • 2100 scenario: 0.01m to 4.14m
F	What are the existing surface water drainage arrangements for the site?	The site consists almost entirely of hard surfaces and contains a positive drainage system in the form of linear drains that likely discharges to Thames Water Utility Limited's combined sewer network. There are areas of green space in the form of grassed lawns, which will provide limited runoff rate and volume control.
G	If known, what (approximately) are the existing rates and volumes of surface water run-off generated by the site?	Based on a 60mm/hr rainfall intensity and 100% impermeable coverage (Cr=0.95), the entire site is expected to have an existing peak flow rate of 1100 l/s. A six hour storm of the same intensity would generate 7,930 m^3 of runoff.
H	How will you prevent run-off from the completed development causing an impact elsewhere?	A site specific Drainage Strategy will be required for the planning application to confirm the greenfield runoff rates and volumes, and to ensure the principles of the site's surface water management (i.e. SuDS) are achievable. The system will reduce the site's runoff rate to the greenfield equivalent, which has been estimated to be 12.5 l/s (QBar). It is expected sections of hardstanding will be replaced with green infrastructure that will provide amenity and biodiversity benefits as well as reduce runoff rates and volumes. Discharging the site's surface water directly to the River Thames should be explored, and may facilitate better water quality management over quantity control.
I	Where applicable, what are the plans for the ongoing operation and/or maintenance of the surface water drainage systems?	The management and maintenance of the drainage system is to be confirmed, however it is anticipated a management and maintenance company will be responsible, with the building/site owner having the ultimate responsibility.

5	Question	SA2 - St Thomas' Hospital campus
J	Sites not necessarily in high risk flood zone but in critical drainage area should consider surface water attenuation and drainage and may require some additional flood risk information (all sites in CDA over 1ha).	The site is not within a high flood risk area nor within an Environment Agency defined Critical Drainage Area. A sustainable drainage system will be required ordinarily due to the requirements of the NPPF. As of Nov 2020, Lambeth's Critical Drainage Areas (CDAs) are under review, and will be published within a new SWMP, that is anticipated to be published by March 2021.

6. Design of the development

6	Question	SA2 - St Thomas' Hospital campus
A	How will the development be made safe from flooding and the impacts of climate change, for its lifetime?	The site is considered to have a low risk of flooding; however, a residual risk exists from a tidal breach event during 2005 and 2100 scenarios. A breach flood is expected to be sudden and rapid, with basements and ground floor levels being most susceptible. The flood warning system would be capable of identifying a storm event required to cause a breach sufficiently in advance to allow occupants to either evacuate areas most at risk. As the proposed development is a reconfiguration of the existing use type the NPPF vulnerability classification and the risk of flooding will remain the same. Healthcare uses on the ground floor are at risk of flooding internally from a Thames breach, however the Thames Tidal Defences provides a 0.1% AEP level of protection. Development at ground floor level or below, will include where reasonably practicable, an increase in building thresholds and flood levels to 300mm above the modelled flood depth. These floor levels will use flood resilient and resistance building techniques as recommend by the Lambeth's SFRA. As per the requirements on the NPPF, a Sustainable Drainage System will be installed as part of the development, and the impacts of climate change on rainfall intensity will need to be considered for the lifetime of the development. The development will ensure the tidal flood defences have a minimum life expectancy of 100 years and the statutory crest

6	Question	SA2 - St Thomas' Hospital campus
		levels are maintained in accordance with the Thames Estuary 2100 plan. The development will ensure the tidal flood defence are not structurally tied to a non-flood defence structure, including buildings, foundations, piers, jetties and bridges. The development will provide a 16 metre safeguarded setback on the landward side of the tidal flood defences to ensure they can be inspected, maintained, raised and replaced in the future. The development will have a maintenance strategy in place to ensure the defences are maintained to the Environment Agency's required standards for the lifetime of the development. The development will have a maintenance strategy in place to ensure that outfalls discharging directly into the river are maintained to the Environment Agency's required standards for the lifetime of the development.
B	How will you ensure that the development and any measures to protect the site from flooding will not cause any increase in flood risk off-site and elsewhere?	The risk of flooding to the site is considered low, however a residual risk of a tidal breach exists. Due to the low risk nature of the site, flood risk mitigation infrastructure is not proposed (other than using flood resilient and resistance building techniques at ground floor level and below). On this basis, there will be changes to the existing rate, volume, depth, or direction of inundation should it occur. Therefore, the development cannot result in any increase in flood risk elsewhere. The development will include a Sustainable Drainage System that will reduce the risk of flooding downstream. The development will ensure the tidal flood defences have a minimum life expectancy of 100 years and the statutory crest levels are maintained in accordance with the Thames Estuary 2100 plan. The development will ensure the tidal flood defence are not structurally tied to a non-flood defence structure, including buildings, foundations, piers, jetties and bridges.

6	Question	SA2 - St Thomas' Hospital campus
		The development will provide a 16 metre safeguarded setback on the landward side of the tidal flood defences to ensure they can be inspected, maintained, raised and replaced in the future. The development will have a maintenance strategy in place to ensure the defences are maintained to the Environment Agency's required standards for the lifetime of the development. The development will have a maintenance strategy in place to ensure that outfalls discharging directly into the river are maintained to the Environment Agency's required standards for the lifetime of the development. The development will, where possible, setback the flood defences increasing flood storage.
C	Have you taken into account the impacts of climate change, over the expected lifetime of the development?	A climate change factor of 40% will be applied to the design of the Sustainable Drainage System, this is in line with national requirements. Lambeth's SFRA recommended contingency allowances for sea level rise will be taken in to account in the design of the development up to year 2115, moreover the risk of flooding from a tidal breach with uplift from climate change for the year 2100 has been considered also.
D	Are there any opportunities offered by the development to reduce the causes and impacts of flooding?	A Sustainable Drainage System will be incorporated into the development and will reduce the rate of runoff as close as reasonably practicable to the greenfield rate. The use of green infrastructure to achieve this will be explored. The development will, where possible, setback the flood defences increasing flood storage.
E	What are the proposals for managing and discharging surface water from the site, including any measures for restricting discharge rates?	A Sustainable Drainage System will be installed to reduce the rate of runoff as reasonably close to the greenfield runoff rate. An underground storage system with a flow control device will likely be used to manage the majority of the site's surface water runoff due to spatial constraints of the site. A green/blue roof will be expected at this site, as well as green infrastructure at ground level to provide enhanced biodiversity, amenity, and improved water quality, while also reducing the storage tank volume requirements.

6	Question	SA2 - St Thomas' Hospital campus
		Due to the site's proximity to the Thames Estuary, it may be possible to explore a direct connection to the River Thames to further reduce the burden on the combined sewer system. In this circumstance, water quality should be prioritised overflow controls. The development will ensure outfalls discharging into the Thames have a second line of defence to prevent inundation if the system is tidally locked or the main flap valve fails.
F	Will it be possible for the development to reduce flood risk overall (eg through the provision of improved drainage)?	The development will include a SuDS which will reduce the risk of flooding to the site and elsewhere, however it is not possible to reduce the risk of fluvial/tidal flooding elsewhere within the confides of the site boundary. The development will raise, where possible, the ground or podium levels above the tidal breach levels.
G	Where appropriate, are you able to demonstrate how the occupants and users that may be more vulnerable to the impact of flooding (eg residents who will sleep in the building; people with health or mobility issues etc) will be located primarily in the parts of the building and site that are at lowest risk of flooding? If not, are there any overriding reasons why this approach is not being followed?	The approach of substitution has been considered for this development. On the basis the site is currently occupied by more vulnerable use types, the consequence of a flood will at least remain the same as a result of the redevelopment of reconfiguration of the existing use type. The NPPF vulnerability classification and the risk of flooding will remain the same. The provision of an emergency evacuation plan in case of a breach event will ensure the risk of the loss of life is minimised.

7. Other considerations

7	Question	SA2 - St Thomas' Hospital campus
	Local Flood Risk Management Strategy or Surface Water Management Plan, that will need to be considered when assessing and managing surface water matters.	Lambeth LLFA is current in the process of producing a new Surface Water Management Plan and redefining the borough's Critical Drainage Areas (CDAs), with the results expected to be published by March 2021. The document should be considered when developing the site's site-specific Flood Risk Assessment and Drainage Strategy.

PART A Sequential test information

For each proposed use within the site allocation	
Are any of the development proposals classified as 'Highly Vulnerable'?	No. It is not anticipated that any highly vulnerable uses will be located within the site. Due to the flood risk zone basement development will be avoided.
Which category of the 'Flood Risk Vulnerability Classification' does each of the development sites proposed uses fall into?	As the proposed development is a reconfiguration of the existing use type the NPPF vulnerability classification and the risk of flooding will remain the same. Healthcare use falls within the 'more vulnerable' category.
Can the 'More Vulnerable' aspects of proposals be directed to parts of the site where the risk of flooding is lower?	The whole of the site is within flood risk zone 3 so the more vulnerable residential uses cannot be directed to areas of lower flood risk within the site.
Utilising SFRA, are there any other suitable sites?	Lambeth is an inner London borough with a substantial housing target within the London Plan, taken forward into the Lambeth Local Plan. The north of the borough contains the Waterloo and Vauxhall Opportunity Areas where significant residential and economic development is proposed. This strategy set out within the Local Plan. The site is within the Waterloo Opportunity Area. It would not be possible to meet the development targets for the opportunity area as set out within the London Plan 2021 should sites within flood risk zone 3 not be developed. Flood risk zone 3 covers most of the north of the borough. The remainder of the borough is located in flood risk zone 1. However due to the housing targets contained in the Lambeth Local Plan and the spatial distribution of development it is not possible to focus all development to the south of the borough, including important healthcare infrastructure to meet future needs at local, sub-regional and regional level. All identified sites whether in flood zones 1, 2 or 3, are considered to be required to meet the overall housing targets, other economic and social development aspirations for the borough. Windfall development on small sites will also contribute towards meeting the housing target.

	The Lambeth SFRA (2013) states that in Waterloo 'the whole development opportunity area resides in Flood Zone 3a' and 'in this case new development should be directed to areas at lowest probability and associated hazard of flooding within the flood cell and the flood vulnerability should be matched to the flood risk of the site e.g. higher vulnerability uses should be located on parts of the site with the lowest probability of flooding. Mapping in Appendix A of the SFRA indicates that the extents of Flood Zones 2 and 3 are very similar. Therefore the sites within these areas cannot be redirected to Flood Zone 1. It is considered the NPPF vulnerability classification ('more vulnerable' uses) and the effect of the probability of flooding on 'vulnerability' uses will remain the same to the proposed development. As stated in the Local Plan there is great competition for land on which to development, therefore severely limiting spatial options for development within flood risk zone 1 would not meet the borough's identified development needs.
Conclusions (utilising information such as housing targets, OA, IDP etc)	All of the site falls within flood zones 3. Given that the site allocation for healthcare uses which are classified as 'more vulnerable' an Exceptions Test is required. A site specific Flood Risk Assessment would also be required for the potential development site to provide a greater level of understanding of the flood risks posed in respect of the proposed development.

PART B Exceptions Test

164. The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. For the exception test to be passed it should be demonstrated that:

NPPF Requirement	**How could be addressed on site**
(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and	Site provides the opportunity to provide new employment uses and reconfigure to improve healthcare buildings on previously developed land. The site capacity will contribute towards meeting the London Plan necessary infrastructure for the borough as well as for London and meet the need of additional populations.

NPPF Requirement	How could be addressed on site
	Table 4 below provides analysis against the objectives contained within the SUSTA framework. In summary the provision of new employment in healthcare sector and new employment will provide local job opportunities and improvement healthcare service will meet community needs for local, the borough and regional. The redevelopment of the site will provide regeneration benefits and will be delivered to higher design, security, sustainability and accessibility standards which will provide considerable improvements to the current urban form and environmental performance of buildings on site and health value. This will promote active travel and facilitate health and wellbeing benefits; facilitate access to open space; increase access to healthcare services; and make more efficient use of resources, contributing towards climate change mitigation. Failure to develop the site will not secure these sustainability benefits. Although the site is located in flood zone 3, the Thames Barrier is in place which reduces the actual risk to the development significantly. The conclusions of the analysis conclude that redevelopment of the site for healthcare improvement will provide community, social and inclusive benefits which are considered to outweigh the flood risk to and from the proposed development.
(b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.	The design of the development should ensure that the development remains safe over its lifetime through ensuring adequate access into and out of the site, including under flood conditions, and being resilient and resistant to flood risk. These measures should include: • adoption of a sequential approach to location of the most vulnerable elements of any scheme to higher ground and other locations within the site (where applicable); • inclusion of appropriate flood resistance measures and site-specific mitigation measures to basement and ground floor levels. Measures such as water resilient materials (concrete, closed cell insulation, brick walls instead of plasterboards, floor and wall tiles) installing

NPPF Requirement	How could be addressed on site
	cabling from above (I.e. drop cabling from the ceiling level) as listed in Part C; • buildings designed to withstand the hydrostatic forces from a breach; • Reduce the site's runoff rate and volume to the combined sewer system using a Sustainable Drainage System. • Occupants will be registered to the Environment Agency's Flood Warning system • Engagement with the Lambeth Emergency Planning team. The development will ensure the tidal flood defences have a minimum life expectancy of 100 years and the statutory crest levels are maintained in accordance with the Thames Estuary 2100 plan. The development will ensure the tidal flood defence are not structurally tied to a non-flood defence structure, including buildings, foundations, piers, jetties and bridges. The development will provide a 16 metre safeguarded setback on the landward side of the tidal flood defences to ensure they can be inspected, maintained, raised and replaced in the future. The development will have a maintenance strategy in place to ensure the defences are maintained to the Environment Agency's required standards for the lifetime of the development. The development will have a maintenance strategy in place to ensure that outfalls discharging directly into the river are maintained to the Environment Agency's required standards for the lifetime of the development. Based on the sequential and exceptions test it was concluded that no other site is reasonably available in a zone of lower flood risk. There is a reasonable prospect of compliance with the second part of the Exception Test subject to an appropriate site layout and adoption of the recommendations of the Environment Agency's package of mitigation measures.

NPPF Requirement	How could be addressed on site
Residual risk and management processes	A residual risk of flooding from a Thames Tidal breach event will remain, however this is considered to have a very low probability of occurring. During such an event the basement and ground levels will be most susceptible to inundation. However, should raise thresholds be incorporated into the design of the building the probability will be reduced. Flood risk will be managed through locating the most vulnerable use types outside the areas at most risk of flooding. There is no intention of installing flood mitigation infrastructure, except for flood resilient measures and resistance materials at ground and basement levels, although raising the building's threshold levels should be explored. A site-specific Flood Risk Assessment must also be prepared in support of any planning application to confirm and provide further detail on the above. The FRA should also include practical management practices and solutions to ensure that any residual risk can be safely managed, including through emergency planning, provision of a site-specific flood evacuation plan, and consultation with the Environment Agency for any works planned within 8m of the main river watercourse and 16 metres of a tidal river.

Table 4 - Site Allocations DPD Sustainability Appraisal (SustA) objectives matrix

SustA Objective	Community benefits against the objectives	SEA topic requirement
SOCIAL		
1. Crime and safety. Ensuring safe communities with reduced crime and disorder.	Development of the site will improve safety and security of the site from current. Where achieving Secure by Design standards this should improve the security of buildings and support a reduction in crime and the fear of crime. Increasing access across the site will also improve permeability of the area. The design of the development will ensure that the development remains safe over its lifetime to the climate change risks, including water shortage.	Population

SustA Objective	Community benefits against the objectives	SEA topic requirement
2. Health and wellbeing. Promote a healthy community, including reducing health inequalities and the causes of ill health.	Improvement of healthcare use of St Thomas' Hospital will help to meet the local and the borough needs of future population.	Population, Human Health
3. Access and services. Create an environment that is accessible to and fully inclusive for all people including the elderly and disabled and improve accessibility to key services and facilities.	Improvement of healthcare use of St Thomas' Hospital will increase access to healthcare services for the local and the borough community and future population.	Population, Human Health
4. Provision of essential infrastructure. To ensure that the necessary infrastructure is planned or in place to meet current or likely future demands.	Provision of essential infrastructure as healthcare use for the improvement of St Thomas' Hospital will meet the current and future local and the borough demands.	Population, Human Health, Material Assets
5. Equality and diversity. To tackle poverty and social exclusion and ensure equitable outcomes for all communities, particularly protected equality groups.	Development of the site will improve the environmental conditions of the locality through promoting better uses of the site and delivery of employment floorspace and essential infrastructure to modern standards. New development delivered to high accessibility standards should improve accessibility for all groups in society. The redevelopment will also improve the health needs of the site and Lambeth.	Population, Human Health
6. Housing. Ensuring everyone has the opportunity for an affordable decent home, quiet enjoyment of that home and the protection of local amenity.	Local and future residents will benefits from the improvement of essential services as healthcare.	Population, Human Health, Material Assets
7. Liveability and place. To design and sustain liveable, mixed-use physical and social environments that promotes long-term social cohesion, sustainable lifestyles, safety and security, and a sense of place.	Provision of essential infrastructure as healthcare use for the improvement of St Thomas' Hospital will meet the current and future local and the borough demands. This is likely to promote safety and security and a sense of place to local people. Accessibility standards will combine with the above to provide child-friendly buildings and places.	Population, Human Health, Material Assets, Landscape, Cultural Heritage (including architectural and

SustA Objective	Community benefits against the objectives	SEA topic requirement
		archaeological heritage)
ENVIRONMENTAL		
8. Built and historic environment. Improve the quality, attractiveness, character and sustainability of the built environment through high quality design and protection of open space, valued views and designated and non-designated historic assets.	Redevelopment of the site will improve the visual attractiveness of the built environment and through delivery to high sustainability standards will improve the sustainability of the environment more generally. Redevelopment will conserve and improve attractiveness from existing and enhance the provision of healthcare facilities. The redevelopment will also enhance the character of St Thomas' Hospital area.	Landscape, Cultural Heritage (including architectural and archaeological heritage)
9. Transport and travel. Integrate planning and transport decisions, to reduce the need to travel, reduce reliance on the private car and the overall level of road traffic whilst prioritising walking, cycling and use of public transport.	As the site is within PTAL 6b, minimises traffic generation and includes parking provision to support health uses and cycle parking standards will enhance active travel rates in the borough. Provision of on-site employment will also provide employment opportunities in the local area. Upper Marsh and Royal Street covered by a Healthy Route initiative. Carlisle Lane covered by a Healthy Route initiative and Greenway (SOWN NDP).	Population, Air, Human health, Climatic factors
10. Biodiversity. To protect, enhance and promote existing habitats and biodiversity, and to bring nature closer to people where possible.	Site is not within a biodiversity designation. The site is adjacent to open space (Archbishop's Park and Thames River). Application of the urban greening factor will provide a biodiversity net gain and wider environmental enhancement on the site which is currently limited in value. Urban greening will also bring people close to nature and application of Development Plan open space and public realm, and private amenity standards will also improve access to such amenity. The development will look for opportunities to improve river ecology.	Biodiversity, Flora, Fauna, Landscape, Soil, Water
11. Green infrastructure. To create, manage and enhance green infrastructure.	Application of the urban greening factor will provide a biodiversity net gain and wider environmental enhancement on the site which is currently limited in value. Urban greening will also bring people close to nature and application of Development Plan open space and public realm, and private amenity standards will also improve access to such amenity.	Biodiversity, Flora, Fauna, Landscape, Soil, Water, Climatic Factors

SustA Objective	Community benefits against the objectives	SEA topic requirement
12. Climate change and energy. Minimise energy consumption and increase energy efficiency and the use of renewable energy. Reduce greenhouse gases and prepare for the unavoidable effects of climate change throughout the life of the development.	Building to high sustainability standards including the policy requirement of the London Plan and the Lambeth Local Plan with respect to reduction in CO2 emissions will minimise energy consumption and promote energy efficiency and on-site renewable energy generation; and design solutions to adapt and mitigate climate change.	Climatic Factors, Materials Assets
13. Water resources and flood risk management. To protect and manage water resources (including groundwater) and to minimise flood risk.	Given that the site is located in flood zone 3 the design of the development, including the inclusion of mitigation measures such as sustainable drainage will be key to managing flood risk. Building to high sustainability standards including the policy requirement of the London Plan and the Lambeth Local Plan with respect to water efficiency and water supply measures, water quality improvements.	Water, Climatic Factors
14. Waste. Ensure that Lambeth manages its waste in a sustainable manner, minimising the production of waste and increasing re-use, recycling, remanufacturing and recovery rates.	Provision of on-site waste management processes will contribute towards minimisation of waste and making reuse and recycling easy for the hospital. This will also assist in meeting the London Plan apportionment and self-sufficiency targets.	Population, Material Assets
15. Air quality. To improve air quality and limit exposure to poor air quality.	Minimises traffic generation and includes parking provision to support health uses will reduce the amount of vehicle movements to and within the site. Building to high sustainability standards including the policy requirement of the London Plan with respect to reduction in CO2 emissions will minimise energy consumption and promote energy efficiency, with implications for air quality.	Human health, Air, Climatic Factors
ECONOMIC		
16. Local economy. To encourage and accommodate sustainable economic growth and employment opportunity.	Development of the site will potentially provide an improvement to healthcare of St Thomas' Hospital which should support local businesses and create more local job opportunities. The redevelopment of the site will also support the role of the site contributing to MedTech Health Cluster.	Population, Material Assets

SustA Objective	Community benefits against the objectives	SEA topic requirement
17. Regeneration and efficient use of land. To ensure new development makes efficient use of land through the re-use of previously developed land, existing buildings and infrastructure, taking into account constraints such as contaminated land.	Redevelopment of the site will provide regeneration benefits and make the most efficient use of the land. Redevelopment of the site will provide environmental enhancement and promote the efficient, innovative and multifunctional use of land.	Material Assets, Soil
18. Tackling worklessness. Increase the amount of and access to employment generating activities and offer all residents the opportunity for rewarding, well-located and satisfying employment.	Provision of employment opportunities will strengthen the local economy and provide local access to employment as well as providing healthcare services near areas of housing. Development on the site is likely to trigger the Local Plan requirement for production of a site-specific Employment and Skills Plan (ESP). This will improve local job opportunities and opportunities and facilities for formal, informal and vocational learning for young people.	Population, Material Assets

SA2 – St Thomas' Hospital campus - Map of Thames Tidal Breach Hazard Mapping (Source: Lambeth LLFA)

SA7 – 6-12 Kennington Lane and Wooden Spoon House

1. Development site and location

1	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
A	Where is the development site located?	Site is at edge of the borough on Kennington Lane in Kennington.
B	What is the current use of the site?	Current use is builders merchant and yard, NHS facilities and associated offices and vacant private college.
C	Flood zone	Flood Zone 3 and an area benefitting from flood defences.

2. Development proposals

2	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
A	Development proposals and uses	Workspace to retain industrial floorspace capacity, replacement community use and residential
B	Vulnerability classification	Residential is classified as more vulnerable; employment less vulnerable.
C	Lifetime of the development (residential 100 years, non-resi determined by experience)	100 years due to the residential units
D	Will the development proposals increase the overall number of occupants and/or people using the building or land, compared with the current use?	Yes the number of people using the buildings will increase from a low current employment base (within Jewsons as a builders merchant and yard, NHS facilities and associated offices and vacant private college)
E	Will the proposals change the nature or times of occupation or use, such that it may affect the degree of flood risk to these people? If this is the case, describe the extent of the change.	Due to the inclusion of residential properties, the hours of occupation will be increased to 24hrs.

3. Sequential test

3	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
A	What other locations with a lower risk of flooding have you considered for the proposed development? If not why not?	See Sequential within PART A below
B	Flood zone 2- why not zone 1. Flood zone 3 why not 2.	The entire site is located within Flood Zone 3 (high risk) however is considered defended up to the 0.1% AEP event due to the Thames Tidal defences.

4. Exception test (where required)

4	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
A	To determine whether required, apply the matrix utilising the Vulnerability assessment against proposed uses	See Sequential within PART B below.
B	Would the proposed development provide wider sustainability benefits to the community? If so, could these benefits be considered to outweigh the flood risk to and from the proposed development? Consider the criteria for this having regard to the objectives of Draft SA DPD's SA/SEA framework	See Table 6 – Sustainability Appraisal Objectives matrix.
C	What flood related risks will remain after the flood risk management and mitigation measures have been implemented?	The probability of modelled fluvial flooding and tidal breach extents at the site will remain the same as a result of the development, however both are considered very unlikely to occur due to the current level of protection from the Thames Tidal defences Through locating all residential properties above ground floor level and providing an evacuation plan in case of tidal breach event, the consequence of flooding will be reduced. Basement uses will be restricted to commercial only and will not contain self-contained units or sleeping accommodation, to minimise the impact of a flood.
D	How can it be demonstrated that the proposed development will remain safe	The development will remain safe for the lifetime of the development through consideration of the impacts of climate change to flood depths and rainfall intensities.

4	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
	over its lifetime without increasing flood risk elsewhere? Principles for access and egress, design, defence, flood warnings and awareness	Residential properties will be restricted to floors above ground level to ensure those most vulnerable will not be inundated, and therefore remain safe even during an extreme flood event. Occupants will be registered to the Environment Agency's flood warning system, and through an Evacuation Plan clear instruction will be provided of where to evacuate should an extreme event occur. Initial options for refuge include: • Kennington Lane • Renfrew Road • the upper floors of the building The development will include a Sustainable Drainage System that will seek to manage the site's surface water runoff as close as reasonably practicable to the greenfield runoff rate. This will provide substantial reduction of flood risk elsewhere given the existing site condition has 100% coverage of impermeable surfaces with uncontrolled runoff.

5. Site specific flood risk and surface water management

5	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
A	How is flood risk at the site likely to be affected by climate change?	Lambeth SFRA 2013 sets out the recommended contingency allowances for net sea level rise for London and the south east from a 1990 base level, rising to 15mm/year by 2115. The Thames hydraulic model has also been used to simulate flood events incorporating increased fluvial flows and tide levels to represent the predicted effects of climate change. This is likely to mean that the Thames Barrier will be utilised more frequently meaning fewer high tides will flow upstream into central London.
B	What are the main source(s) of flood risk to the site? (eg tidal/sea, fluvial or rivers, surface water, groundwater, other, history of flooding?).	The main source of flood risk is from a tidal breach and fluvial flooding from the River Thames, although this is considered highly unlikely to occur due to the existing Thames Tidal defences.

<table>
<tr><th>5</th><th>Question</th><th>SA7 – 6-12 Kennington Lane and Wooden Spoon House</th></tr>
<tr><td>C</td><td>What is the probability of the site flooding?</td><td>
<table>
<tr><th>Source of flooding</th><th>Undefended probability</th><th>Level of protection</th><th>Risk</th></tr>
<tr><td>Fluvial (Flood Zone 3)</td><td>1% AEP</td><td>0.1% AEP</td><td>Low</td></tr>
<tr><td>Tidal (Breach)</td><td>No risk during 2005 scenario

Risk of flooding during 2100 scenario</td><td>0.1% AEP</td><td>Low</td></tr>
<tr><td>Surface water</td><td>No risk</td><td>n/a</td><td>No risk</td></tr>
</table>
</td></tr>
<tr><td>D</td><td>What is the expected depth (m above OD) and level for the design flood? (fluvial (river) flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year)</td><td>The site is considered defended against the 1% AEP fluvial flood risk (i.e. Flood Zone 3) and tidal breach event, due to the 0.1% standard of protection from the Thames Tidal defences.

Should a tidal defence breach occur, the depths are:
2005 scenario: no risk
2100 scenario: 3.55m to 4.11m AOD</td></tr>
<tr><td>E</td><td>Are properties expected to flood internally in the design flood and to what depth?</td><td>All residential properties will be positioned above ground floor level and will therefore not be at risk of internal flooding. Commercial properties on the ground floor are at risk of flooding internally from a Thames breach, however the Thames Tidal Defences provides a 0.1% AEP level of protection.

In the very unlikely event of a breach it is anticipated flooding to the ground floor level during a 2100 scenario only, with parts not liable to flood up to 0.397m. This is considered very low risk.</td></tr>
<tr><td>F</td><td>What are the existing surface water drainage arrangements for the site?</td><td>Site consists almost entirely of hardstanding. Due to the age of the current building it is assumed all runoff directly discharged to the local combined sewer at an uncontrolled rate via a conventional drainage system.</td></tr>
<tr><td>G</td><td>If known, what (approximately) are the existing rates and volumes of surface water run-off generated by the site?</td><td>Based on a 60mm/hr rainfall intensity and 100% impermeable coverage (Cr=0.95), the entire site is expected to have an existing peak flow rate of 108l/s.

A six hour storm of the same intensity would generate 2327m^3 of runoff.</td></tr>
</table>

5	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
H	How will you prevent run-off from the completed development causing an impact elsewhere?	A site specific Drainage Strategy will be required for the planning application to confirm the greenfield runoff rates and volumes, and to ensure the principles of the site's surface water management (i.e. SuDS) are achievable. The system will reduce the site's runoff rate to the greenfield equivalent, which has been estimated to be 3.6 l/s (QBar). It is expected the development will reduce runoff rates and volumes, while also provided improved biodiversity and amenity, by replacing hardstanding areas with green infrastructure.
I	Where applicable, what are the plans for the ongoing operation and/or maintenance of the surface water drainage systems?	The management and maintenance of the drainage system is to be confirmed; however it is anticipated a management and maintenance company will be responsible, with the building owner having the ultimate responsibility.
J	Sites not necessarily in high risk flood zone but in critical drainage area should consider surface water attenuation and drainage and may require some additional flood risk information (all sites in CDA over 1ha).	The site is not within a high flood risk area nor within an Environment Agency defined Critical Drainage Area. A sustainable drainage system will be required ordinarily due to the requirements of the NPPF. As of Nov 2020, Lambeth's Critical Drainage Areas (CDAs) are under review, and will be published within a new SWMP, that is anticipated to be published by March 2021.

6. Design of the development

6	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
A	How will the development be made safe from flooding and the impacts of climate change, for its lifetime?	The development is considered safe on the basis the risk of flooding is solely from a Thames Tidal breach event when the impacts of climate change are considered (i.e. the year 2100). To minimise the risk and consequence of flooding sleeping accommodation should be restricted to the ground floor or above only (i.e. sleeping accommodation at basement level will not be permitted). As per the requirements on the NPPF, a Sustainable Drainage System will be installed as part of the development, and the impacts of climate change on rainfall intensity will need to be considered for the lifetime of the development.

6	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
B	How will you ensure that the development and any measures to protect the site from flooding will not cause any increase in flood risk off-site and elsewhere?	The risk of flooding to the site is considered low, however a residual risk of a tidal breach exists. Due to the low risk nature of the site, flood risk mitigation infrastructure is not proposed other than siting Less Vulnerable development at and above ground floor; using flood resilient and resistance building techniques at ground floor level and below; and forbidding sleeping accommodation at basement level. The development is situated on a site that was previously developed. The proposal will likely mirror the previous building's footprint and therefore not reduce the floodplain storage potential. The development will include a Sustainable Drainage System that will reduce the risk of flooding downstream.
C	Have you taken into account the impacts of climate change, over the expected lifetime of the development?	A climate change factor of 40% will be applied to the design of the Sustainable Drainage System, this is in line with national requirements. Lambeth's SFRA recommended contingency allowances for sea level rise will be taken in to account in the design of the development up to year 2115, moreover the risk of flooding from a tidal breach with uplift from climate change for the year 2100 has been considered also.
D	Are there any opportunities offered by the development to reduce the causes and impacts of flooding?	A Sustainable Drainage System will be incorporated into the development and will reduce the rate of runoff as close as reasonably practicable to the greenfield rate. The use of green infrastructure as a means of reducing the volume runoff should be explored.
E	What are the proposals for managing and discharging surface water from the site, including any measures for restricting discharge rates?	A Sustainable Drainage System will be installed to reduce the rate of runoff as reasonably close to the greenfield runoff rate. An underground storage system with a flow control device will likely be used to manage the majority of the site's surface water runoff due to spatial constraints of the site. A green/blue roof will be expected at this site, as well as green infrastructure at ground level to provide enhanced biodiversity, amenity, and improved water quality, while also reducing the storage tank volume requirements.

6	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
F	Will it be possible for the development to reduce flood risk overall (eg through the provision of improved drainage)?	The development will include a SuDS which will reduce the risk of flooding to the site and elsewhere, however it is not possible to reduce the risk of fluvial/tidal flooding elsewhere within the confides of the site boundary.
G	Where appropriate, are you able to demonstrate how the occupants and users that may be more vulnerable to the impact of flooding (eg residents who will sleep in the building; people with health or mobility issues etc) will be located primarily in the parts of the building and site that are at lowest risk of flooding? If not, are there any overriding reasons why this approach is not being followed?	The approach of substitution has been considered for this development. All More Vulnerable use types (e.g. residential) will be positioned outside the area at risk and/or above ground floor. It is anticipated the risk of flooding to properties (commercial and residential) to be low, however residual risk from a tidal breach exists and will be managed through an evacuation plan

7. Other considerations

7	Question	SA7 – 6-12 Kennington Lane and Wooden Spoon House
	Local Flood Risk Management Strategy or Surface Water Management Plan, that will need to be considered when assessing and managing surface water matters.	Lambeth LLFA is current in the process of producing a new Surface Water Management Plan and redefining the borough's Critical Drainage Areas (CDAs), with the results expected to be published by March 2021. The document should be considered when developing the site's site-specific Flood Risk Assessment and Drainage Strategy.

PART A Sequential test information

For each proposed use within the site allocation	
Are any of the development proposals classified as 'Highly Vulnerable'?	No. It is not anticipated that any highly vulnerable uses will be located within the site. Due to the flood risk zone basement dwellings will be avoided.

Which category of the 'Flood Risk Vulnerability Classification' does each of the development sites proposed uses fall into?	It is likely that due to this location this site allocation will be for mix of uses including employment floorspace and residential. As these uses fall within more than 1 category of vulnerability the most vulnerable classification has been used. Residential falls within the more vulnerable category.
Can the 'More Vulnerable' aspects of proposals be directed to parts of the site where the risk of flooding is lower?	The whole of the site is within flood risk zone 3 so the more vulnerable residential uses cannot be directed to areas of lower flood risk within the site, however residential properties will be located on upper levels and above the maximum flood depth.
Utilising SFRA, are there any other suitable sites?	Lambeth is an inner London borough with a substantial housing target within the London Plan, taken forward into the Lambeth Local Plan. The north of the borough contains the Waterloo and Vauxhall Opportunity Areas where significant residential and economic development is proposed. This strategy set out within the Local Plan. Flood risk zone 3 covers the of the north of the borough. The remainder of the borough is located in flood risk zone 1. However due to the housing targets contained in the Lambeth Local Plan and the spatial distribution of development it is not possible to focus all development to the south of the borough. All identified sites whether in flood zones 1, 2 or 3, are considered to be required to meet the overall housing targets and other economic development aspirations for the borough. Windfall development on small sites will also contribute towards meeting the housing target. The Lambeth SFRA (2013) states that in Vauxhall there are 'no reasonably available sites in Flood Zone 1'. Mapping in Appendix A of the SFRA indicates that the extents of Flood Zones 2 and 3 are very similar. Therefore the sites within these areas cannot be redirected to Flood Zone 1. As stated in the Lambeth Local Plan there is great competition for land on which to development, therefore severely limiting spatial options for development within flood risk zone 1 would not meet the borough's identified development needs.
Conclusions (utilising information such as housing targets, OA, IDP etc)	All of the site falls within flood zones 3. Given that the site allocation includes residential uses which are classified as 'more vulnerable' an Exceptions Test is required.

	A site specific Flood Risk Assessment would also be required for the potential development site to provide a greater level of understanding of the flood risks posed in respect of the proposed development.

PART B Exceptions Test

164. The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. For the exception test to be passed it should be demonstrated that:

NPPF Requirement	**How could be addressed on site**
(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and	Site provides the opportunity to provide a significant number of new homes and new employment uses on previously developed land. The site capacity will contribute towards meeting the London Plan housing targets for the borough. Table 6 below provides analysis against the objectives contained within the SUSTA. In summary the provision of new homes will improve access to good housing and provide affordable homes to meet community needs, and employment floorspace will provide local job opportunities. The redevelopment of the site will provide regeneration benefits and will be delivered to higher design, security, sustainability and accessibility standards which will provide considerable improvements to the current urban form and environmental performance of buildings on site. This will enable people to remain in their homes longer; promote active travel and facilitate health and wellbeing benefits; facilitate access to open space; and make more efficient use of resources, contributing towards climate change mitigation. Failure to develop the site will not secure these sustainability benefits. Although the site is located in flood zone 3, the Thames Barrier is in place which reduces the actual risk to the development significantly. The conclusions of the analysis conclude that redevelopment of the site for a mixed use of residential and employment will provide community benefits which are considered to outweigh the flood risk to and from the proposed development.
(b) the development will be safe for its lifetime taking account of the	The design of the development should ensure that the development remains safe over its lifetime through

NPPF Requirement	How could be addressed on site
vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.	ensuring adequate access into and out of the site, including under flood conditions, and being resilient and resistant to flood risk. These measures should include: • adoption of a sequential approach to location of the most vulnerable elements of any scheme to higher ground and other locations within the site (where applicable); • inclusion of appropriate flood resistance measures and site-specific mitigation measures to basement and ground floor levels. Measures such as water resilient materials (concrete, closed cell insulation, brick walls instead of plasterboards, floor and wall tiles) installing cabling from above (I.e. drop cabling from the ceiling level) as listed in Part C; • buildings designed to withstand the hydrostatic forces from a breach; • Reduce the site's runoff rate and volume to the combined sewer system using a Sustainable Drainage System. • Occupants will be registered to the Environment Agency's Flood Warning system • Engagement with the Lambeth Emergency Planning team. Based on the sequential and exceptions test it was concluded that no other site is reasonably available in a zone of lower flood risk. There is a reasonable prospect of compliance with the second part of the Exception Test subject to an appropriate site layout and adoption of the recommendations of the Environment Agency's package of mitigation measures.
Residual risk and management processes	A residual risk of flooding from a Thames Tidal breach event will remain, however this is considered to have a very low probability of occurring. During such an event the basement and ground levels will be most susceptible to inundation. However, should raised thresholds be incorporated into the design of the building the probability will reduced. Flood risk will be managed through locating the most vulnerable use types outside the areas at most risk of flooding. There is no intention of installing flood

NPPF Requirement	How could be addressed on site
	mitigation infrastructure, except for flood resilient measures and resistance materials at ground and basement levels, although raising the building's threshold levels should be explored. A site-specific Flood Risk Assessment must also be prepared in support of any planning application to provide further detail on the above. The FRA should also include practical management practices and solutions to ensure that any residual risk can be safely managed, including through emergency planning, provision of a site-specific flood evacuation plan, and consultation with the Environment Agency for any works planned within 8m of the main river watercourse and 16 metres of a tidal river.

Table 5 - Site Allocations DPD Sustainability Appraisal (SustA) objectives matrix

SustA Objective	Community benefits against the objectives	SEA topic requirement
SOCIAL		
1. Crime and safety. Ensuring safe communities with reduced crime and disorder.	Development of the site will improve safety and security of the site from current. Where achieving Secure by Design standards this should improve the security of buildings and support a reduction in crime and the fear of crime. Increasing access across the site will also improve permeability of the area. The design of the development will ensure that the development remains safe over its lifetime to the climate change risks, including water shortage.	Population
2. Health and wellbeing. Promote a healthy community, including reducing health inequalities and the causes of ill health.	Delivering to car-free standards will improve use active methods of travel with health and wellbeing implications. Site has existing hospital which will need to be relocated to ensure that no negative implications of loss of facilities arise. Good quality standard of new houses within the new development standards set out in the Development Plan will help to improve health and wellbeing.	Population, Human Health

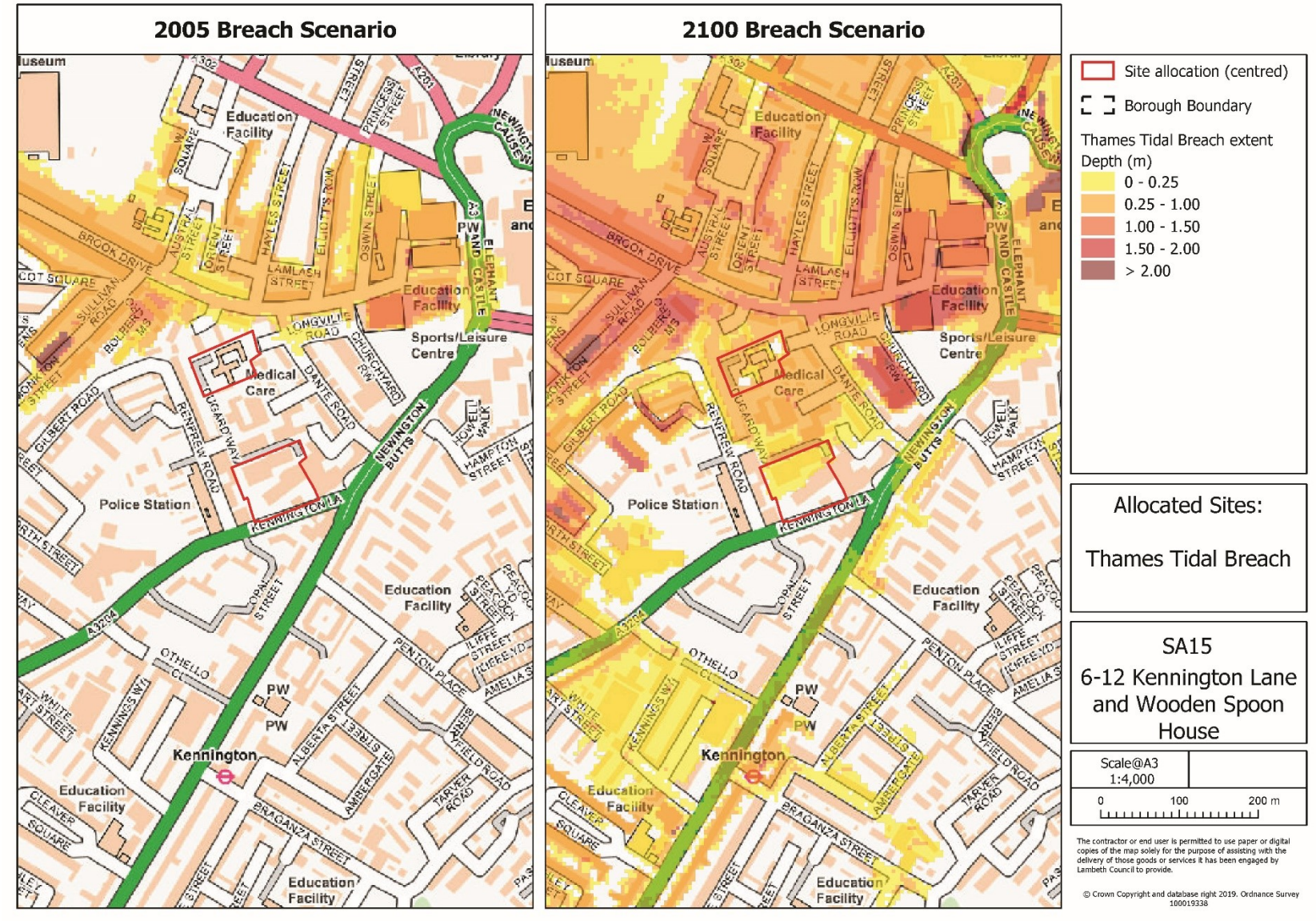
SustA Objective	Community benefits against the objectives	SEA topic requirement
3. Access and services. Create an environment that is accessible to and fully inclusive for all people including the elderly and disabled and improve accessibility to key services and facilities.	New development delivered to high accessibility standards should enable people to remain in the homes for longer, releasing pressure on dedicated specialist housing. Provision of mixed-use development should also enable access to services and job opportunity in the locality and reduce the need to travel. Delivering new homes to standards set out in the Development Plan will provide new residential amenity and access to open space and public realm.	Population, Human Health
4. Provision of essential infrastructure. To ensure that the necessary infrastructure is planned or in place to meet current or likely future demands.	Necessary infrastructure (such as green infrastructure, water and sewerage infrastructure, decentralised heating, etc.) will be provided or planned before redeveloping the site.	Population, Human Health, Material Assets
5. Equality and diversity. To tackle poverty and social exclusion and ensure equitable outcomes for all communities, particularly protected equality groups.	Development of the site will improve the environmental conditions of the locality through removal of a vacant and decaying building and delivery of employment floorspace to modern standards. New development delivered to high accessibility standards should improve accessibility for all groups in society.	Population, Human Health
6. Housing. Ensuring everyone has the opportunity for an affordable decent home, quiet enjoyment of that home and the protection of local amenity.	Site will provide new housing improving access to good quality housing and delivered to high sustainability standards. Provision of affordable housing will increase the range and affordability of housing and assist in tackling homelessness and overcrowding. The tenure and mix of housing provided will be provided to meet identified requirements ensuring Lambeth residents with more opportunities to access better quality homes.	Population, Human Health, Material Assets
7. Liveability and place. To design and sustain liveable, mixed-use physical and social environments that promotes long-term social cohesion, sustainable lifestyles, safety and security, and a sense of place.	Delivering new homes to standards set out in the Development Plan will provide new residential amenity and access to open space and public realm which will promote social cohesion and a sense of place. Accessibility standards will combine with the above to provide child-friendly buildings and places.	Population, Human Health, Material Assets, Landscape, Cultural Heritage (including architectural

SustA Objective	Community benefits against the objectives	SEA topic requirement
		and archaeological heritage)
ENVIRONMENTAL		
8. Built and historic environment. Improve the quality, attractiveness, character and sustainability of the built environment through high quality design and protection of open space, valued views and designated and non-designated historic assets.	Redevelopment of the site will improve the visual attractiveness of the built environment and through delivery to high sustainability standards will improve the sustainability of the environment more generally. Current site contains two large grain buildings and one smaller building on the road. Redevelopment will continue the streetscene and improve attractiveness from existing.	Landscape, Cultural Heritage (including architectural and archaeological heritage)
9. Transport and travel. Integrate planning and transport decisions, to reduce the need to travel, reduce reliance on the private car and the overall level of road traffic whilst prioritising walking, cycling and use of public transport.	Provision of car-free development and cycle parking standards will enhance active travel rates in the borough. Provision of on-site employment will also provide employment opportunities in the local area.	Population, Air, Human health, Climatic factors
10. Biodiversity. To protect, enhance and promote existing habitats and biodiversity, and to bring nature closer to people where possible.	Site is not within a biodiversity designation. Application of the urban greening factor will provide a biodiversity net gain and wider environmental enhancement on the site which is currently limited in value. Urban greening will also bring people close to nature and application of Development Plan open space and public realm, and private amenity standards will also improve access to such amenity.	Biodiversity, Flora, Fauna, Landscape, Soil, Water
11. Green infrastructure. To create, manage and enhance green infrastructure.	Application of the urban greening factor will provide a biodiversity net gain and wider environmental enhancement on the site which is currently limited in value. Urban greening will also bring people close to nature and application of Development Plan open space and public realm, and private amenity standards will also improve access to such amenity.	Biodiversity, Flora, Fauna, Landscape, Soil, Water, Climatic Factors
12. Climate change and energy. Minimise energy consumption and increase	Building to high sustainability standards including the policy requirement of the London Plan with respect to reduction in CO2 emissions will	Climatic Factors,

SustA Objective	Community benefits against the objectives	SEA topic requirement
energy efficiency and the use of renewable energy. Reduce greenhouse gases and prepare for the unavoidable effects of climate change throughout the life of the development.	minimise energy consumption and promote energy efficiency. This will be a considerable improvement to existing which is large warehouse, decaying building and mid-century hospital building with poor sustainability standards.	Materials Assets
13. Water resources and flood risk management. To protect and manage water resources (including groundwater) and to minimise flood risk.	Given that the site is located in flood zone 3 the design of the development, including the inclusion of mitigation measures such as sustainable drainage will be key to managing flood risk. Building to high sustainability standards including the policy requirement of the London Plan and the Lambeth Local Plan with respect to water efficiency and water supply measures, water quality improvements.	Water, Climatic Factors
14. Waste. Ensure that Lambeth manages its waste in a sustainable manner, minimising the production of waste and increasing re-use, recycling, remanufacturing and recovery rates.	Provision of on-site waste management processes will contribute towards minimisation of waste and making reuse and recycling easy for residents and visitors. This will also assist in meeting the London Plan apportionment and self-sufficiency targets. This should also support the development of an efficient, low carbon economy (including new green technologies) that minimise unsustainable resource use.	Population, Material Assets
15. Air quality. To improve air quality and limit exposure to poor air quality.	Delivery of car-free development will reduce the amount of vehicle movements to and within the site. Building to high sustainability standards including the policy requirement of the London Plan with respect to reduction in CO2 emissions will minimise energy consumption and promote energy efficiency, with implications for air quality.	Human health, Air, Climatic Factors
ECONOMIC		
16. Local economy. To encourage and accommodate sustainable economic growth and employment opportunity.	Development of the site will be required to re-provide industrial floorspace which should support local job opportunities.	Population, Material Assets
17. Regeneration and efficient use of land. To ensure new development makes efficient	Redevelopment of the site will provide regeneration benefits and make the most efficient use of the land. This will make the best use of	Material Assets, Soil

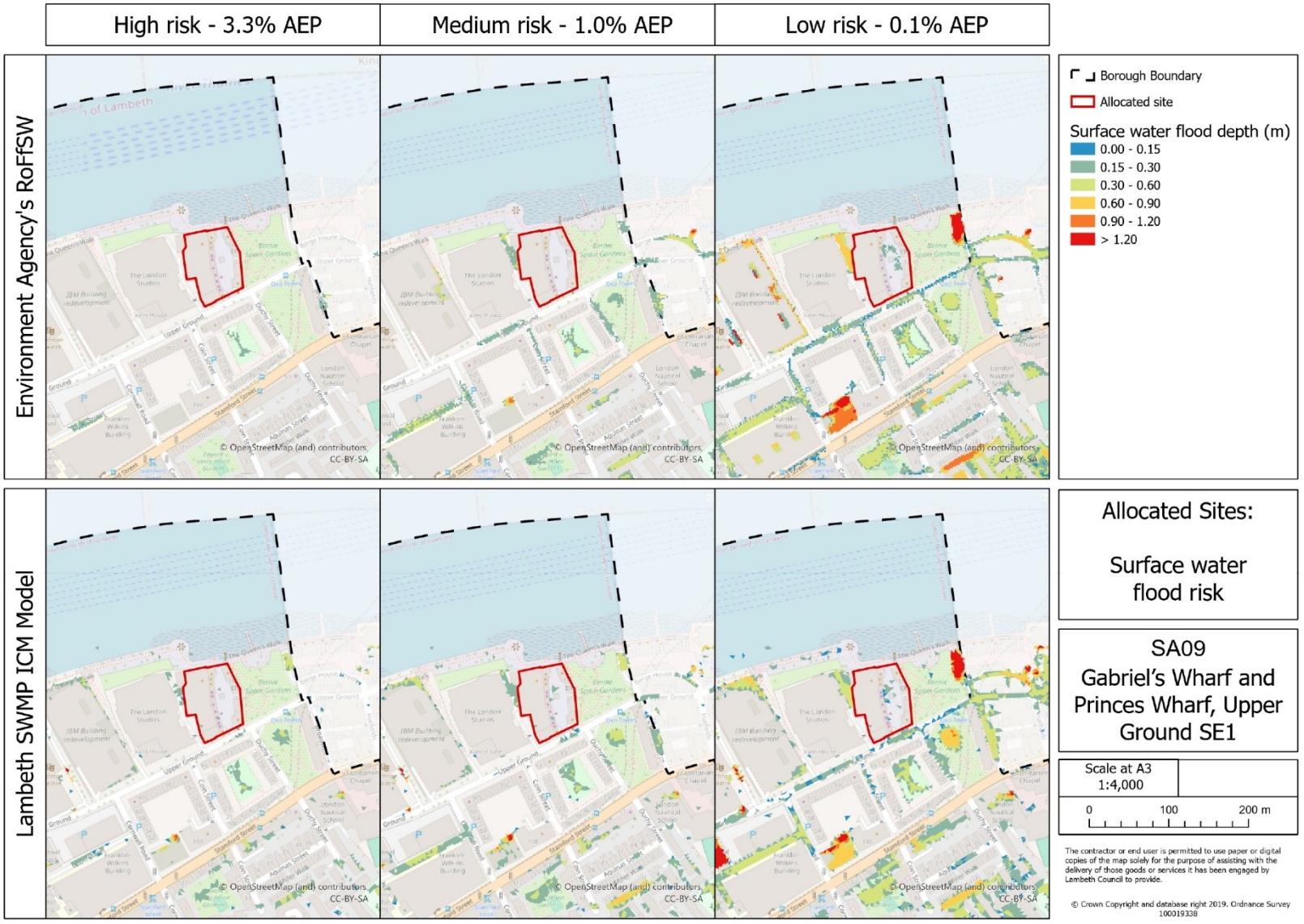
SustA Objective	Community benefits against the objectives	SEA topic requirement
use of land through the re-use of previously developed land, existing buildings and infrastructure, taking into account constraints such as contaminated land.	brownfield land. Redevelopment of the vacant and derelict building on site will provide environmental enhancement.	
18. Tackling worklessness. Increase the amount of and access to employment generating activities and offer all residents the opportunity for rewarding, well-located and satisfying employment.	Re-provision of employment opportunities will strengthen the local economy and provide local access to employment as well as providing housing near areas of work. Development on the site is likely to trigger the Local Plan requirement for production of a site-specific Employment and Skills Plan (ESP). This will improve local job opportunities and opportunities and facilities for formal, informal and vocational learning for young people.	Population, Material Assets

SA7 – 6-12 Kennington Lane and Wooden Spoon House - Map of Thames Tidal Breach Hazard Mapping (Source: Lambeth LLFA)

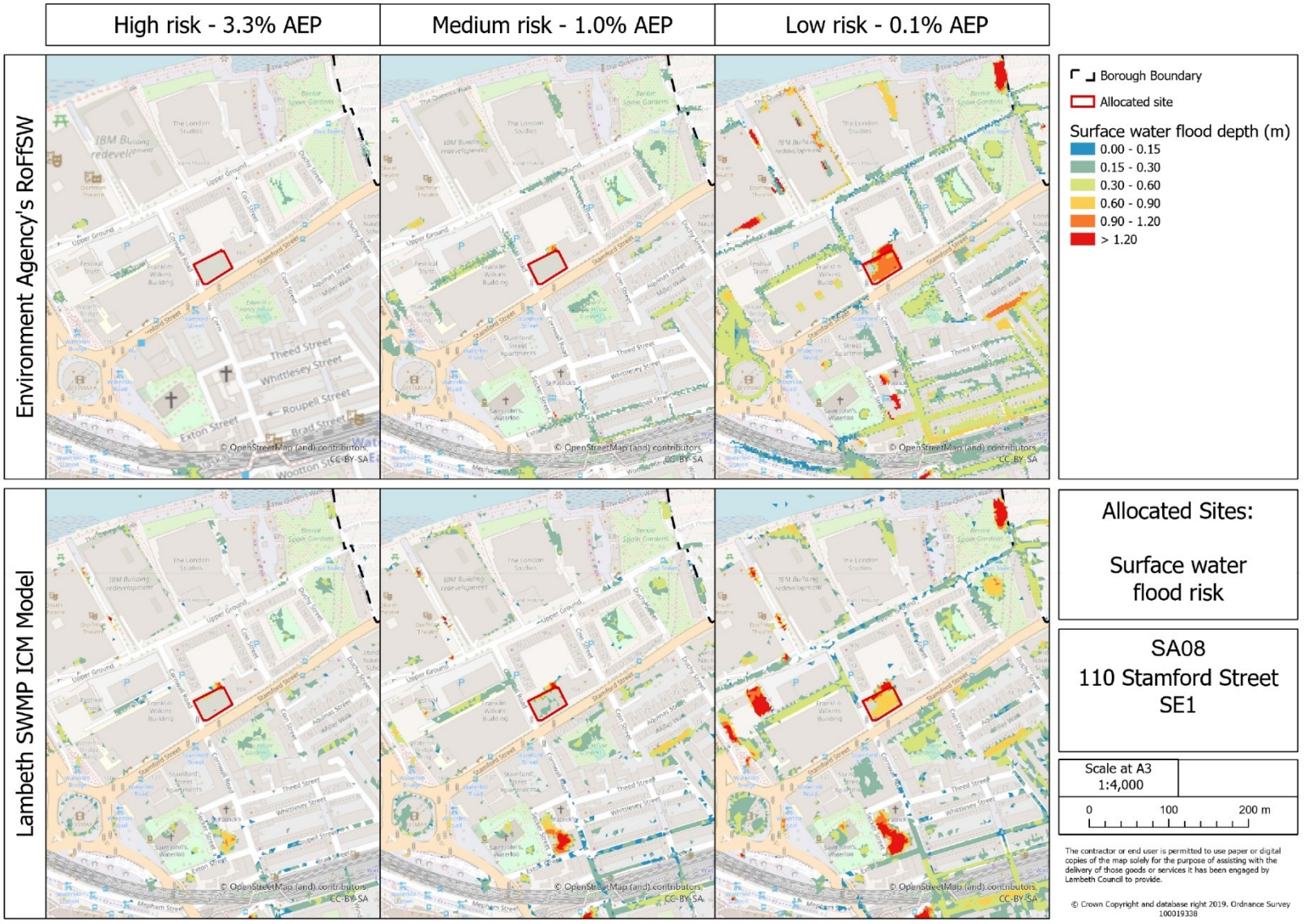


APPENDIX 2 MAPPING OF SURFACE WATER FLOOD RISK

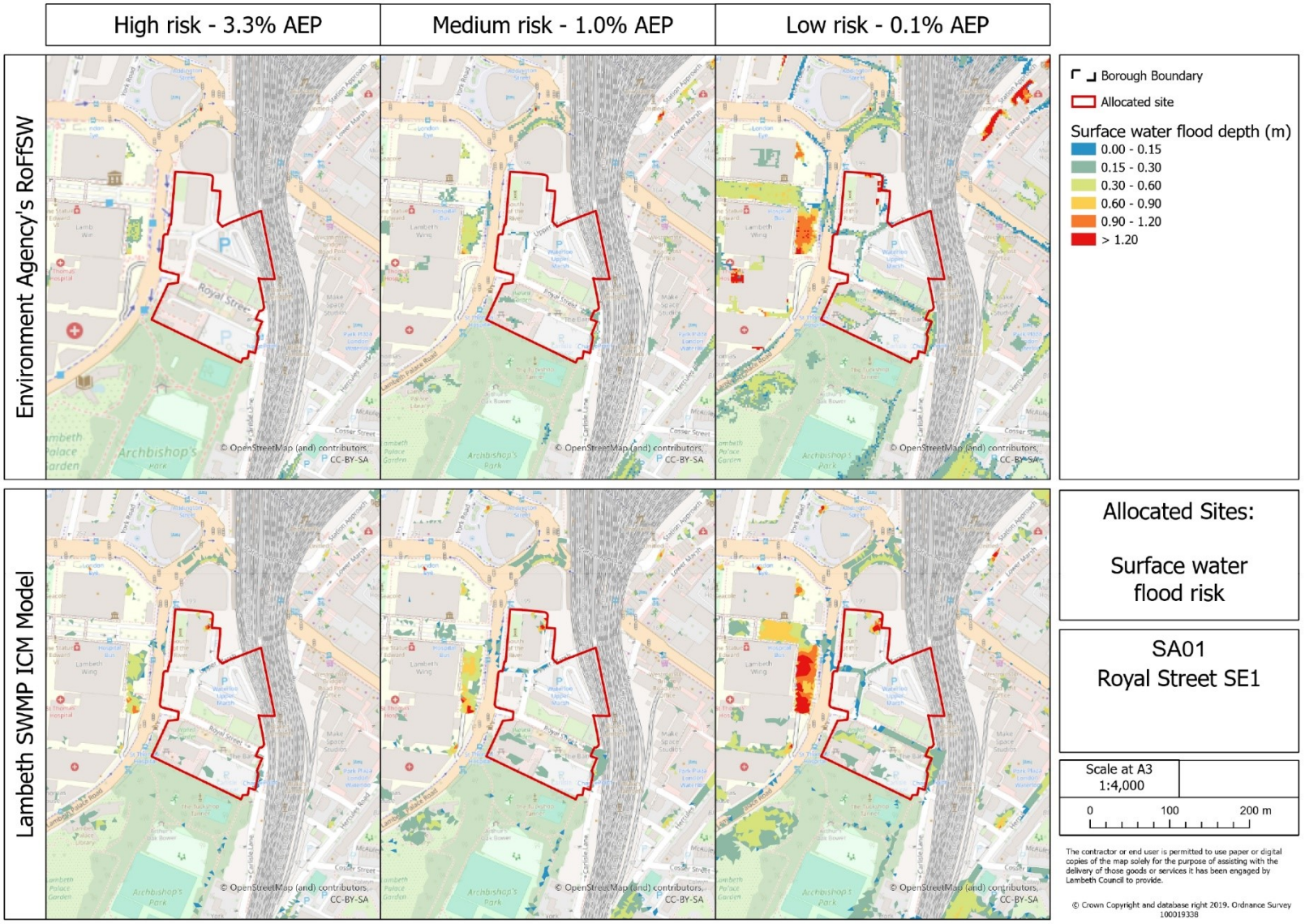
SA9 – Gabriel's Wharf and Prince's Wharf - Map of Surface water flood risk (Source: Lambeth LLFA)



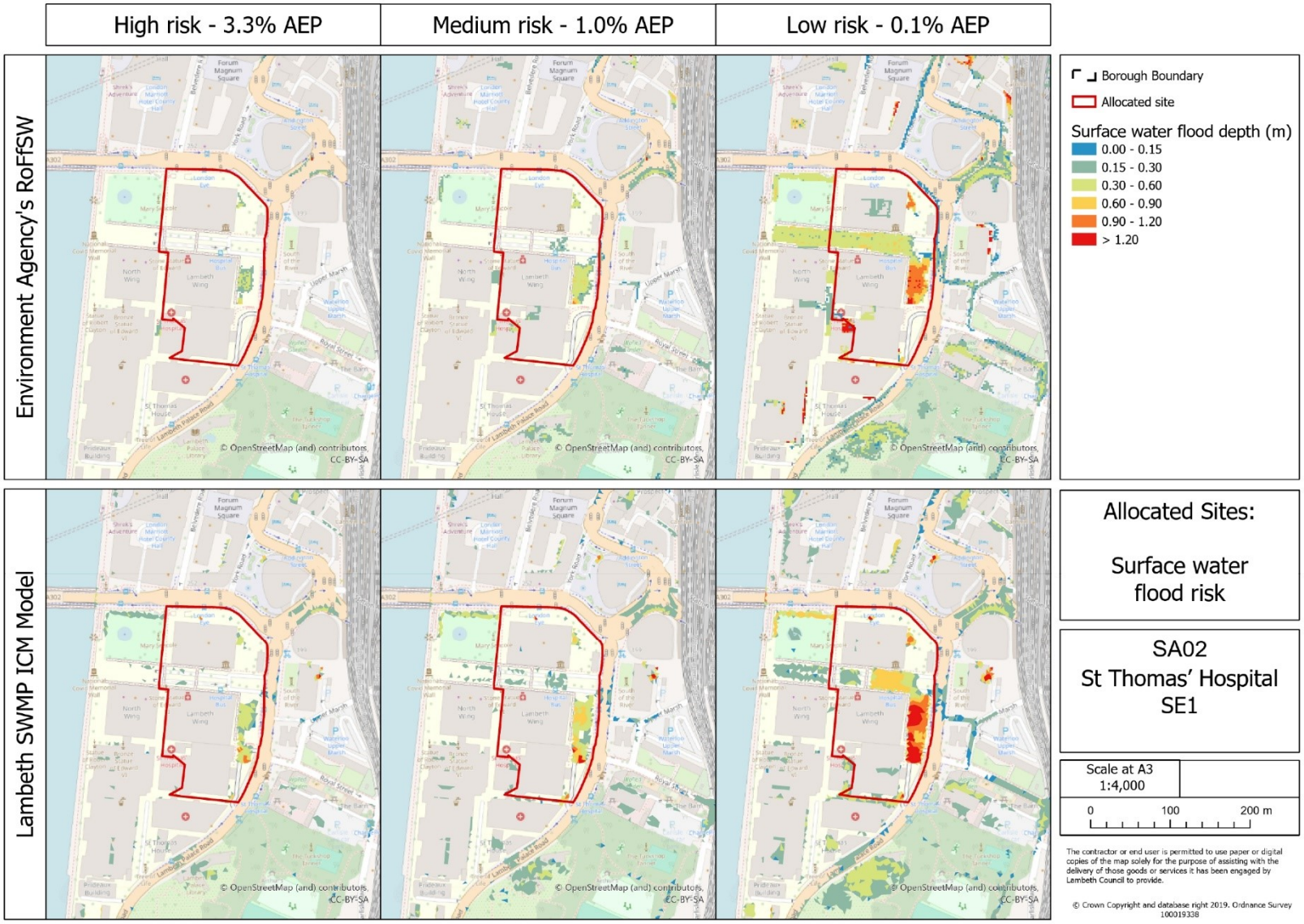
SA8 – 110 Stamford Street - Map of Surface water flood risk (Source: Lambeth LLFA)



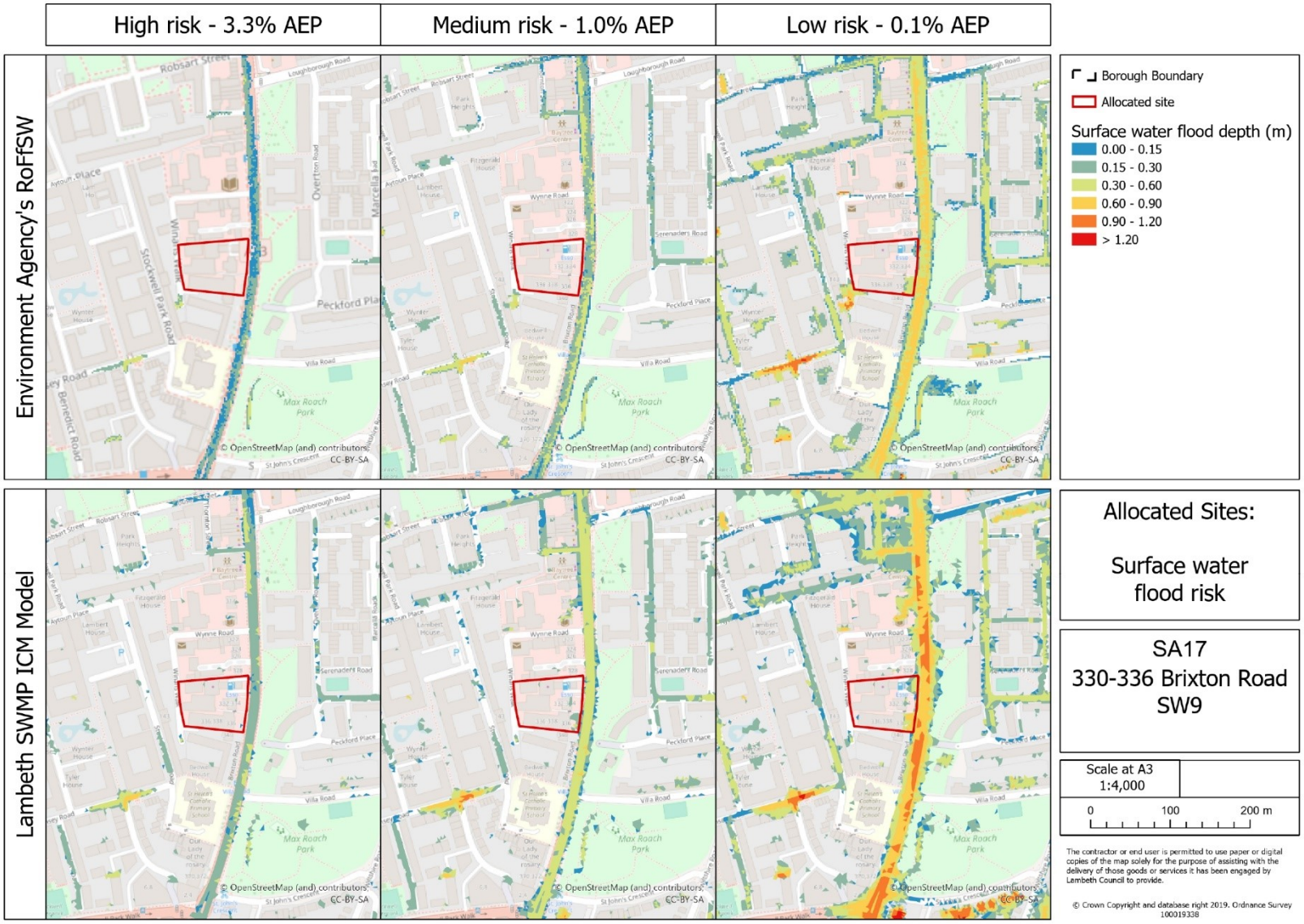
SA1 – Royal Street - Map of Surface water flood risk (Source: Lambeth LLFA)



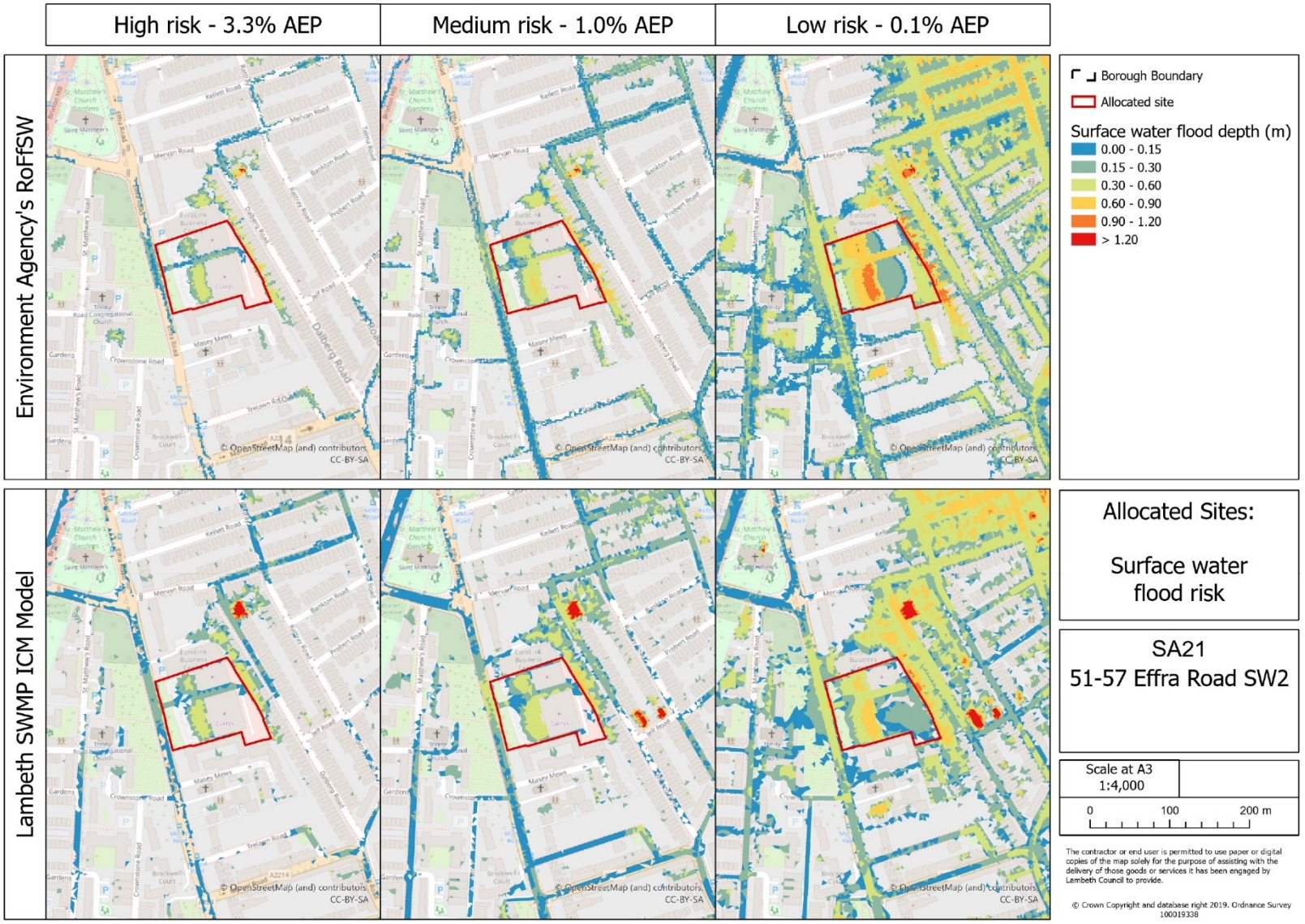
SA2 – St Thomas' Hospital - Map of Surface water flood risk (Source: Lambeth LLFA)



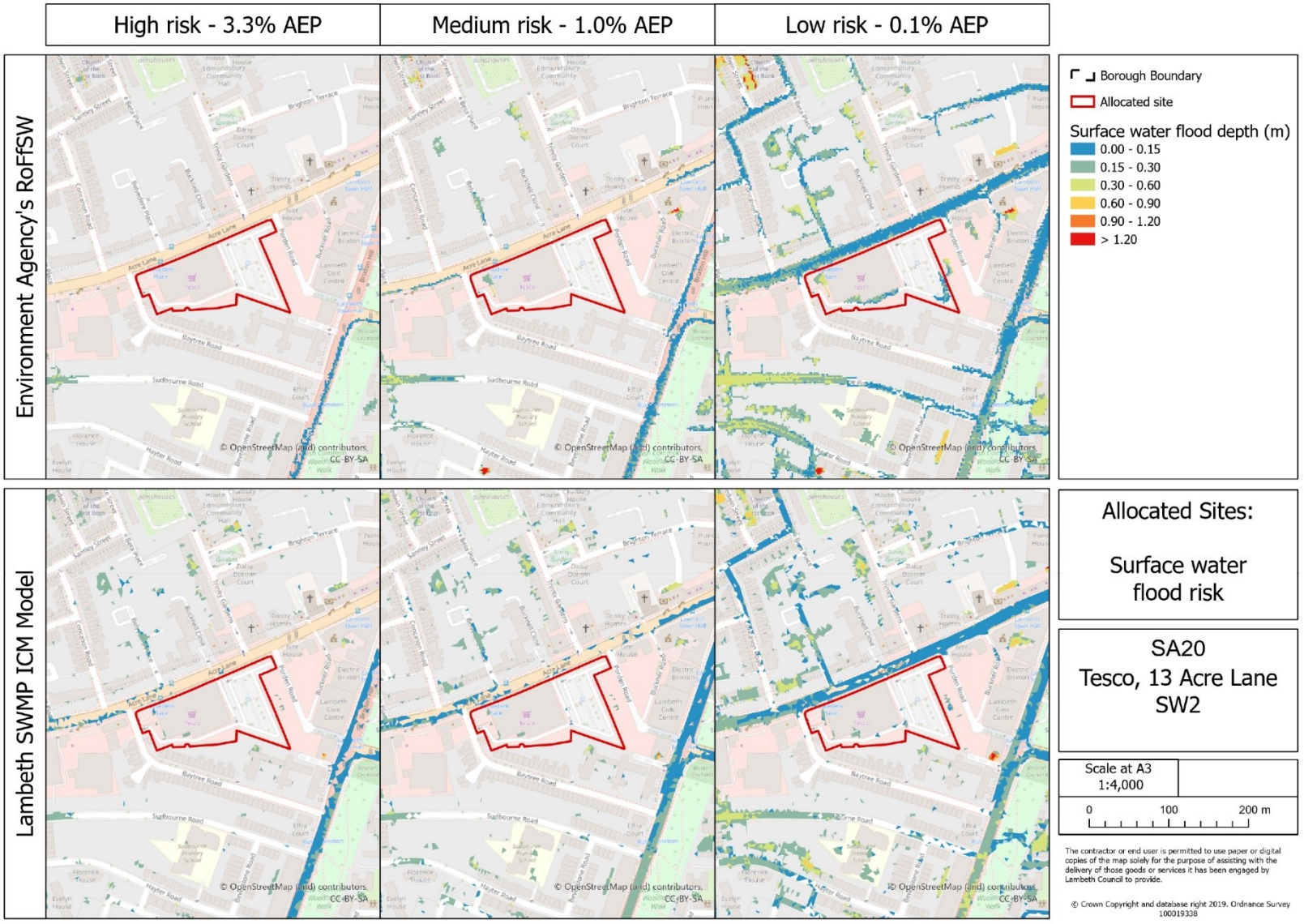
SA17 – 330-336 Brixton Road - Map of Surface water flood risk (Source: Lambeth LLFA)



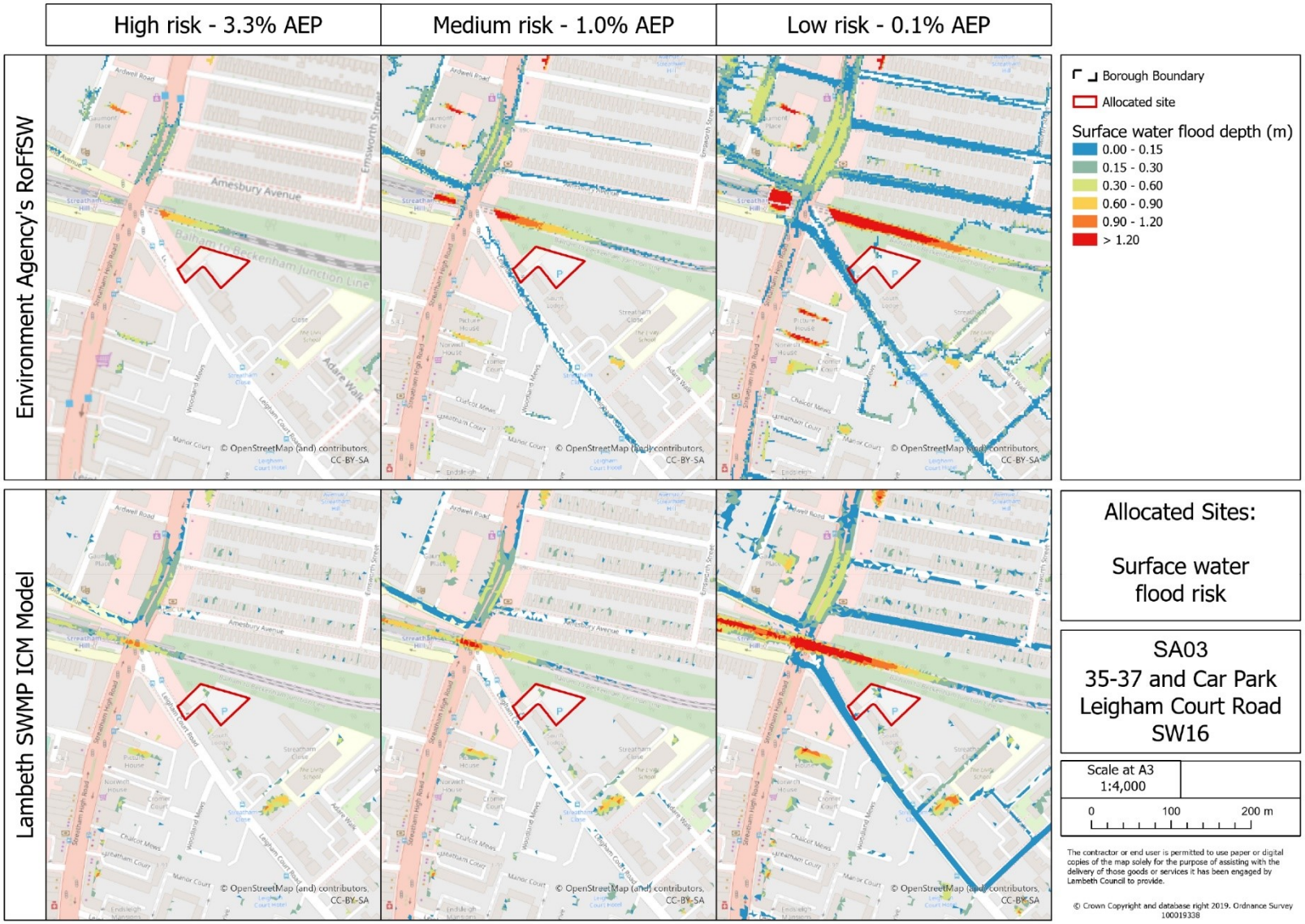
SA21 – 51-57 Effra Road - Map of Surface water flood risk (Source: Lambeth LLFA)



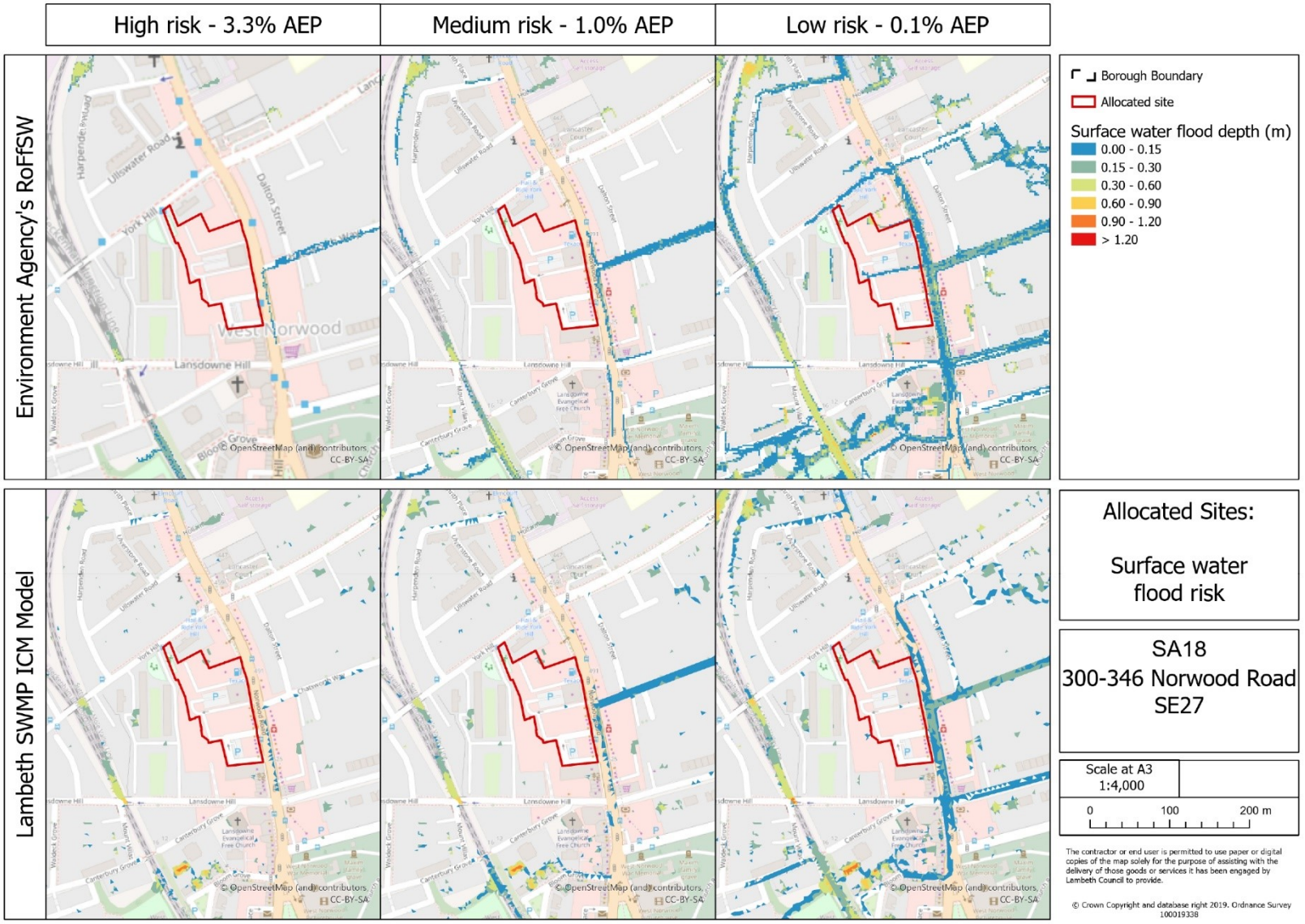
SA20 –Tesco, 13 Acre Lane - Map of Surface water flood risk (Source: Lambeth LLFA)



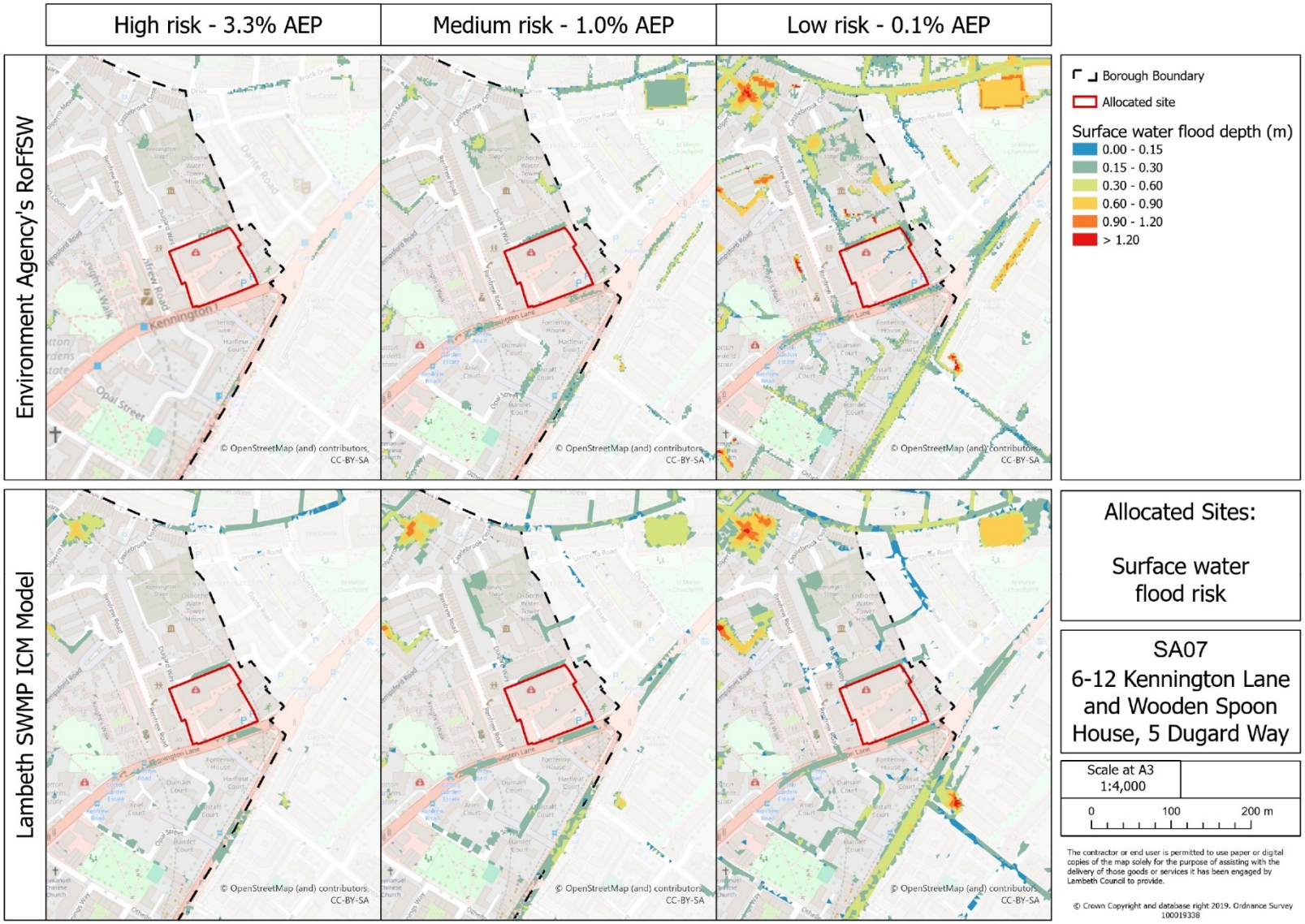
SA3 – 35-37 and Car Park Leigham Court Road - Map of Surface water flood risk (Source: Lambeth LLFA)



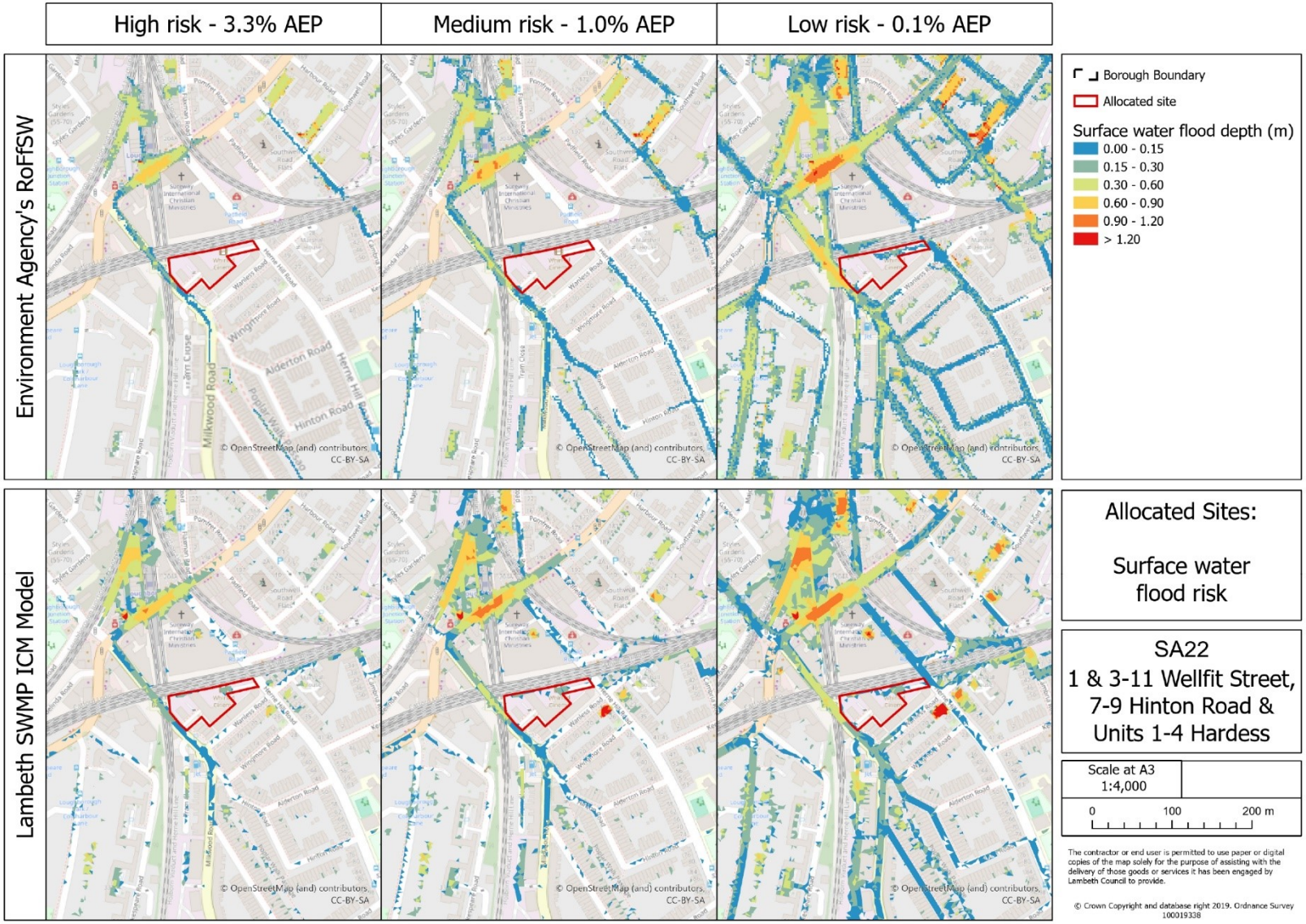
SA18 – 300-346 Norwood Road SE27 - Map of Surface water flood risk (Source: Lambeth LLFA)



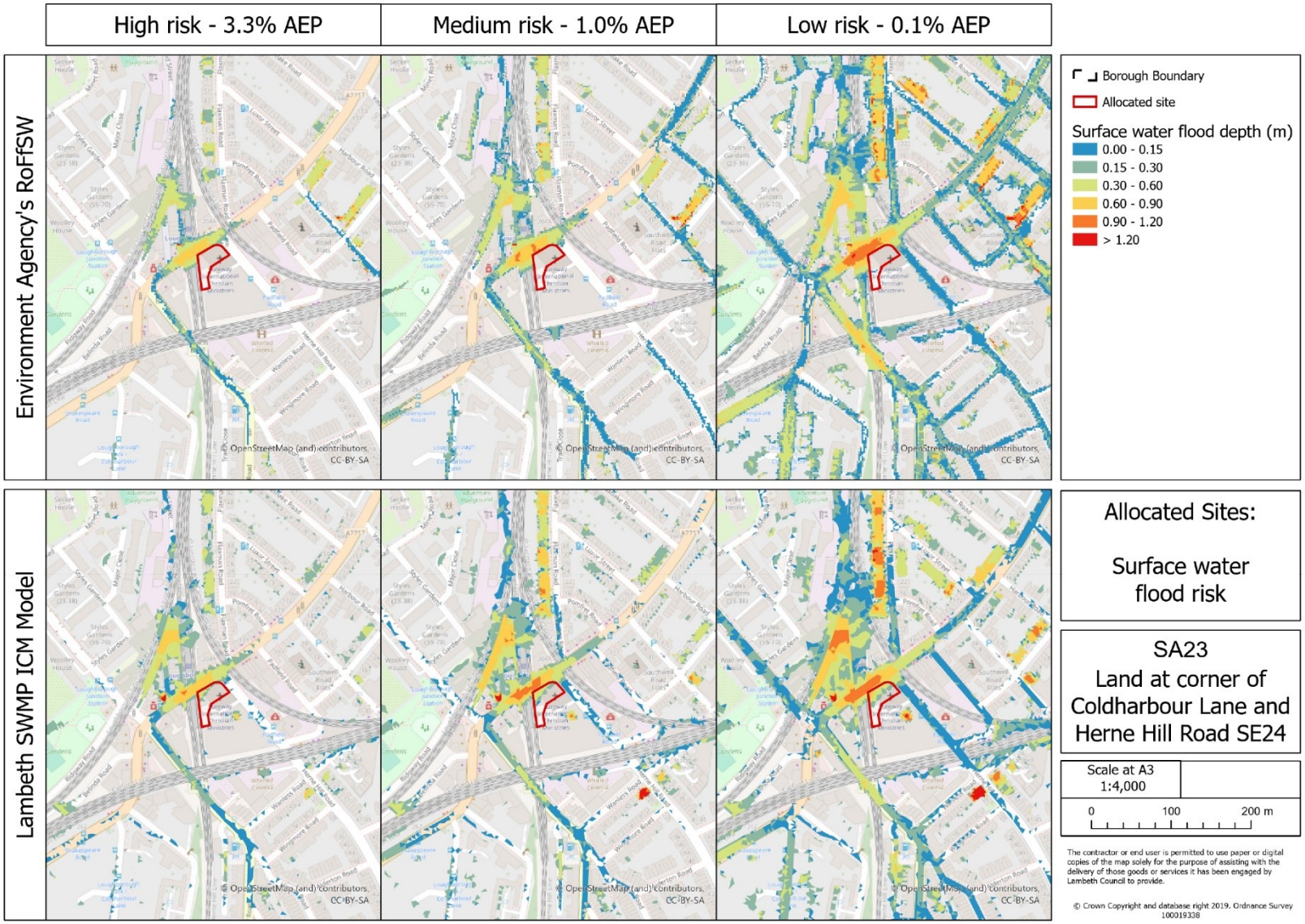
SA7 – 6-12 Kennington Lane and Wooden Spoon House, 5 Dugard Way - Map of Surface water flood risk (Source: Lambeth LLFA)



SA22 – 1&3-11 Wellfit Street, 7-9 Hinton Road & Units 1-4 Hardess Street - Map of Surface water flood risk (Source: Lambeth LLFA)



SA23 – Land at corner of Coldharbour Lane and Herne Hill Road - Map of Surface water flood risk (Source: Lambeth LLFA)



SA24 – Kings College Hospital, Denmark Hill - Map of Surface water flood risk (Source: Lambeth LFA)