

**www.oxford.gov.uk**



*Flood Risk Sequential*  
*Test of Sites*

**Oxford Local Plan**  
**2045**

2026

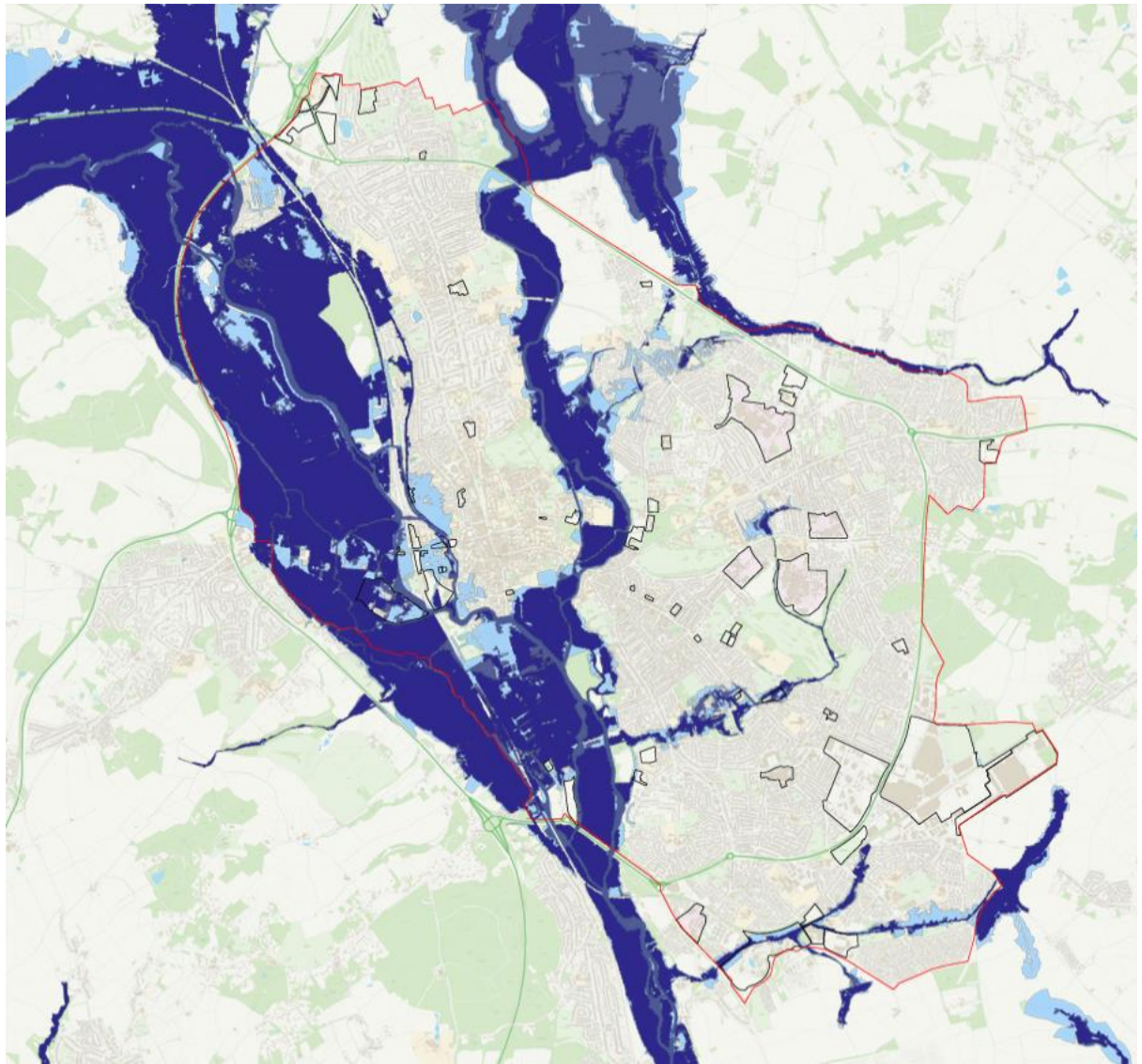
## 1. Introduction

1.1 With two rivers running through it, and a high water table, Oxford has large areas of land that are at risk of flooding. A Level 1 Strategic Flood Risk Assessment (SFRA) for the city was completed in January 2026 to provide detailed information on flood risk to inform the Local Plan 2045. The SFRA presents information about different sources of flood risk and shows variations in flood risk across the city. Variation in flood risk from fluvial sources has been classed according to probability.

1.2 Figure 1 below maps the flood zones in Oxford (based on fluvial flood risk):

- Flood Zone 1 has a low probability of flooding
- Flood Zone 2 a medium probability of flooding
- Flood Zone 3a a high probability of flooding and Flood Zone 3b is functional flood plain.

1.3 The SFRA shows that some of the development sites being considered through the Submission Draft Oxford Local Plan 2045 are in Flood Zones 2 or 3. It is important to identify whether those developments can be directed to other parts of Oxford that are at less risk of flooding, this is called the Sequential Test.



#### Legend

- Oxford CC boundary
- Proposed Site Allocations

#### EA Flood Map for Planning

- Flood Zone 2 (0.1% - 1.0% AEP)
- Flood Zone 3a (>1.0% AEP)
- Flood Zone 3b (represented by the EA 3.3% AEP defended extent informed by the River Thames (2018) model)

Contains Ordnance Survey data © Crown copyright and database 2025. Contains public sector information licensed under the Open Government Licence v3.0.



Figure 1 - Flood map showing risk of river flooding in Oxford (WHS, 2025)

1.4 Paragraph 172 of the National Planning Policy Framework (NPPF) states that all plans should apply a sequential approach to determine the suitability of land for development in flood risk areas. The aim is to identify land for development that is in the lowest possible flood risk zone as far as is reasonably possible, taking into account all sources of flood risk and the current and future impacts of climate change. Additional guidance on how local authorities should apply the sequential approach and Sequential Test is provided in the National Planning Practice Guidance (PPG). This background paper illustrates how the sequential approach has been applied to the sites being considered for allocation in the Submission Draft Oxford Local Plan 2045. As part of the sequential approach, the Sequential

Test is used to test if there are any reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding.

### **Sequential Test Methodology**

1.5 When developing site allocation policies, the Sequential Test should be applied if any of the potential sites are outside of Flood Zone 1. Before allocating sites in higher risk flood zones, it must be demonstrated that there are no reasonable alternative sites available in areas with a lower probability of flooding that would be appropriate to the type of development or land use proposed. When considering the allocation of sites beyond Flood Zone 1, wherever possible the most vulnerable uses (such as police and ambulance stations and basements dwellings) should be located in the lowest flood risk areas and the least vulnerable uses (such as outdoor sports and recreation) should be located in the areas with a higher risk of flooding<sup>1</sup>. It is also important that within each flood zone, new development should be directed to the parts of the sites that have the lowest probability of flooding from all sources as indicated by the SFRA. The methodology in Figure 2 below was used to apply the sequential test.

---

<sup>1</sup> Annex 3: Flood risk vulnerability classification (NPPF) (2023)

### *Stage A: Identify the need for development*

To assess whether land is needed for development, and whether any land is needed beyond Flood Zone 1, it is important to identify the development needed to achieve the aims, objectives and strategy of the Submission Draft Oxford Local Plan 2045.

### *Stage B: Identification of the fluvial flood risk of potential development sites*

This stage identifies all the reasonably available sites being considered for development at the Preferred Options stage and the flood risk zone for each site as determined by the SFRA (Level 1).

### *Stage C: Application of the Sequential Test*

At this stage the potential development capacities of the proposed sites are estimated, and consideration is given to whether development needs can be met entirely in Flood Zone 1. Where there are insufficient sites available in Flood Zone 1 to meet identified development needs, sites in Flood Zone 2 are considered (with regard given to the flood risk vulnerability of proposed land uses). Only where there are insufficient sites available to meet development needs in Flood Zones 1 and 2 are sites in Flood Zone 3 considered (again with regard given to the flood risk vulnerability of proposed land uses). Where sites are proposed in Flood Zones 2 and 3, consideration is given to whether there are opportunities to swap 'less vulnerable' land uses proposed in low flood risk areas with 'more vulnerable' land uses proposed in higher flood risk areas.

### *Stage D: Assess risk of flooding from other sources*

Information about sources of flooding other than fluvial flooding is acknowledged and the significance assessed. The Environment Agency has published information on the susceptibility of broad areas to surface water flooding, which are shown in the SFRA. Often this data is of lower quality and accuracy than that of fluvial flooding and it can inform the Sequential Test to a lesser degree.

### *Stage E: The Exceptions Test*

Any proposals for the development of sites in Flood Zone 3a proposed for 'more vulnerable' uses such as housing will also require the Exception Test. The Exception Test will be carried out to inform the site allocations in the Draft Local Plan.

*Figure 2: Sequential Test Methodology (adapted from guidance within the NPPF and PPG)*

## 2. Stage A: Identifying the need for development

### **The Local Plan 2045 Spatial Strategy: amount and types of development**

2.1 Oxford's economy is a key driver in the wider Oxfordshire economy and the city plays a vital role in the regional and national economies. The universities and hospitals are key to the success of the knowledge economy in Oxford and many of the research and development locations are closely linked, with healthcare and innovation also being a major strength.

2.2 Significant population growth is expected over the plan period to 2045, however, the city's continuing housing crisis through the lack of housing availability, choice and affordability is a significant challenge for its future development. The housing crisis is having negative impacts on the ability of businesses and service providers to attract and retain staff. The housing crisis is also affecting the ability to maintain mixed and balanced communities. Key objectives of the Local Plan 2045 are to build on the city's economic strengths and to deliver as much housing as possible, all the while ensuring that the environment is central to everything we do, ensuring Oxford remains a pleasant place to live, work and visit, making best use of resources and protecting and enhancing the city's unique historic environment and green setting.

2.3 Oxford is generally a sustainable location for housing development as it is the employment and destination centre for the wider Oxfordshire area and provides key health, education, leisure, cultural, and community services. Oxford also has well established public transport and cycle networks.

2.4 The evidence base for the LP2045 assesses these needs for development in more detail. Historically Oxford has been unable to meet its calculated housing need. The last round of Local Plan's in Oxfordshire aimed to meet the needs assessed in the 2014 Oxfordshire Housing Market Assessment, updated for Oxford in 2018. Oxford's total capacity for housing was less than its calculated need. So unmet need was taken by the other districts' local plans (full details are set out within the Housing Need, Requirement and Mix Background Paper 001). The Oxford Strategic Housing Land Availability Assessment (January 2026) shows that the current capacity is 9,267 dwellings for the Local Plan period 2025-2045 (including a 10% buffer to applicable sites). This shows that Oxford's total capacity for housing is still less than its calculated need of 21,740 dwellings 2025-2045.

2.5 The need for employment sites is assessed in the Oxford Employment Land Needs Assessment (ELNA 2025) as 412,460sqm. The report concludes that currently over 500,000 sq m of space is either being delivered, progressing through the planning system or is coming forward on allocated land. This figure exceeds, by some margin, the entirety of the city's current combined office and R&D stock (360,000 sq m), and its delivery (in whole or in part) represents a 'seismic' shift in the economic baseline of the city. Therefore, it continues to be the case that through the new Local Plan, the city will need to identify potential further sources of employment floorspace supply beyond what is currently committed in quantitative terms. The Local Plan 2045 does not allocate any new sites for employment space but aims to support Oxford's economic growth by supporting the intensification and modernisation of existing employment sites and supporting the delivery of additional Class E uses (including employment uses) within the city and district centres.

### **Other uses**

2.6 In addition to delivering new homes and employment space, it is important that the Oxford Local Plan 2045 ensures that the infrastructure, services, and facilities needed to support new development and a growing population are in place. The Oxford Local Plan 2045 aims to focus town centre uses in our city and district centres. These are areas that are highly accessible mobility hubs and include a broad range of facilities including shops, hospitality, community and leisure facilities. As most housing growth in Oxford will be

delivered through small sites, there are limited opportunities for entirely new schools to be provided. The Oxford Local Plan 2045 therefore aims to support Oxfordshire County Council as the Education Authority to meet school provision requirements by growing existing schools. The Oxford Local Plan 2045 also aims to protect and enhance a network of multi-functional green spaces across Oxford.

## **The Local Plan 2045 Spatial Strategy: locating new development**

### **Previously Developed Land**

2.7 The Oxford Local Plan 2045 focuses on delivering new development by intensifying the use of previously developed land. This is not only best practice but is essential in a constrained urban environment like Oxford. The Plan seeks to identify sites that are underused (for example low-rise buildings and unused spaces, or sites in a use that does not make most efficient use of land, such as large surface-level car parks). The redevelopment of these sites will help to accommodate the development needs of the city in a sustainable and efficient way; locating new development alongside existing uses, facilities, and public transport connections.

2.8 The Oxford Local Plan 2045 strategy is to allow some development in Flood Zone 3b which is brownfield (previously developed land), either small-scale household extensions or redevelopment of sites that does not increase the footprint of the existing building within Flood Zone 3b. Very high standards of flood mitigation designed to demonstrably decrease flood risk compared to the current situation would be required to ensure that development would not reduce flood storage or lead to increased risk of flooding elsewhere and to ensure its occupants are not put at risk. Evidence would be required to demonstrate that any development would have a neutral or positive effect on water retention and storage. This approach has been developed with the Environment Agency and is explained further in Background Paper 7 (Flood Risk, SuDS and Drainage).

### **Greenfield Sites**

2.9 The Oxford Local Plan 2045 aims to protect the majority of green spaces, as evidence indicates they provide a variety of benefits (such as recreational and health, biodiversity provision, adaptation to climate change and improvements in air quality). A hierarchical approach has been taken to green spaces with those identified as 'core' receiving the strongest protections and their loss would not be deemed appropriate in any circumstances. Those identified as 'supporting' could be lost if it is reprovided elsewhere in the green infrastructure network, with all other spaces benefitting from protections which already exist through national policy and their loss would have to meet the tests for loss of open space as set out in paragraph 104 of the NPPF<sup>2</sup>. This approach acknowledges the demands on space that the city is constantly subject to and it recognises that to help meet the development needs of Oxford, some green spaces could potentially be reprovided in another part of the network, where a more fitting use can be demonstrated for the site.

---

2

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1182995/NPPF\\_Sept\\_23.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1182995/NPPF_Sept_23.pdf)

2.10 An updated Green Belt Assessment of Additional Sites (2025) has been undertaken to inform the Oxford Local Plan 2045. A further 17 parcels previously assessed in 2017 and 2023 which remain (in whole or in part) in the Green Belt were also reviewed to establish whether they would meet the criteria for categorisation as grey belt. Using that methodology, the assessment concluded that 12 of the 25 new parcels, and part of one other (split into two for assessment purposes) have been identified as grey belt. After reviewing the previously assessed parcels, 3 were identified as grey belt. [Paragraph 001](#) (Reference ID: 64-001-20250225) of the PPG supports the position that grey belt parcels are not all developable. As the Oxford Local Plan 2045 has developed, they have been considered alongside other parts of the Green Belt, which are not grey belt, to see if any of them warrant further consideration. 22 of the 25 new parcels have been identified as not having the *potential* to fundamentally undermine the purposes (taken together) of the remaining Green Belt, when considered across the area of the plan. Of the previously reviewed sites, 13 of the 17 parcels, and part of two others (split into smaller parcels for assessment purposes) have also been assessed as not having the *potential* to fundamentally undermine the five purposes of the remaining Green Belt within the plan area. The sites that have been identified can be found in Tables 4.1 and 4.2 of the Oxford Local Plan Green Belt Assessment of Additional Sites (LUC, 2025).

#### **Oxford City Centre and District Centres**

2.11 The Oxford Local Plan 2045 seeks to focus town centre uses in our city and district centres. These are areas that are highly accessible mobility hubs and include a broad range of facilities including shops, hospitality, community and leisure facilities.

### **3. STAGE B: IDENTIFICATION OF THE FLOOD RISK OF POTENTIAL DEVELOPMENT SITES**

3.1 The sites for potential site allocations have been identified and assessed through a multi-stage process. The starting point was the SHLAA (which incorporates Calls for Sites and other sources of sites). Sites have then been tested and refined via assessments including Sustainability Appraisal, testing deliverability, and testing against the plan strategy and objectives. This three-stage site assessment process resulted in 62 sites that were considered suitable and were considered further for allocation in the OLP2045.

3.2 The level of flood risk on each of these sites has been assessed using the flood zone maps prepared as part of the SFRA. The table in Appendix 1 to this Background Paper lists each site with its level of identified flood risk. It should be noted that flood zones are not mutually exclusive because they overlap. Any area that is in Flood Zone 3b is also in Flood Zone 3a and Flood Zone 2, and any land in Flood Zone 3a is also in Flood Zone 2. Sites are classed as being within the highest risk flood zone present on the site.



## **4. STAGE C: APPLICATION OF THE SEQUENTIAL TEST**

### **Calculating potential housing capacities on sites in the Submission Draft Oxford Local Plan 2045**

4.1 At Stage A it was identified that Oxford has a very high need for new housing and that one of the objectives of the Oxford Local Plan 2045 is to deliver homes to meet housing needs in the city. Where sites have been identified to be allocated for residential uses, or for a mix of uses that includes residential, an estimate of the housing capacity as assessed in the SHLAA (2026) is provided in Appendix 1. It should be noted that the figures presented in Appendix 1 do not take into account housing from windfall sites (169 dwellings per annum (2028/29 to 2045)). Also note that some sites in Appendix 1 have either already commenced construction or have been built out.

4.2 Student accommodation and care homes are also counted in the housing land supply. Where sites have been allocated or developed for student accommodation, the number of student rooms is divided by 2.5 (the national ratio set out in the Housing Delivery Test<sup>3</sup>) to provide the “dwelling equivalent” figure, whilst self-contained accommodation under Use Class C3 is counted as 1:1. For care homes, the dwelling equivalent figure is reached by dividing the number of rooms by the national ratio of 1.8<sup>4</sup>.

### **Estimating the amount of housing that could be delivered in each flood zone and comparison with Local Plan housing requirements**

4.3 Appendix 1 lists the potential sites by flood risk zone. Figure 3 summarises the information in Appendix 1 and shows the quantum of housing development that can be provided on sites in Flood Zone 1, and whether this provides enough housing to meet the housing requirement, or whether sites in higher risk areas need to be considered.

---

<sup>3</sup> <https://www.gov.uk/government/publications/housing-delivery-test-2021-measurement/housing-delivery-test-2021-measurement-technical-note>

<sup>4</sup> *ibid*

<b>Flood Zone</b>	<b>Cumulative capacity of sites considered for allocation in the Local Plan 2045 (Appendix 1)</b>	<b>Cumulative capacity from identified sites across the flood zones</b>
<b>Flood Zone 1</b>	3,919	3,993
<b>Flood Zone 2</b>	105	4,098
<b>Flood Zone 3a</b>	307	4,405
<b>Flood Zone 3b (brownfield)</b>	1,283	5,688

*Figure 3: Potential capacity from identified sites per flood zone*

4.4 The number of new homes that could be delivered on sites in Flood Zone 1 is estimated to be around 3,993 dwellings, which would not meet the housing need of 21,740, as identified at Stage A. The next step is to consider the capacity within Flood Zones 1 and 2 combined. The number of new homes that are expected to be delivered in Flood Zone 2 is 105, giving a cumulative total of 4,098 dwellings which would also not meet Oxford's housing need. Therefore, the next step is to consider sites in Flood Zone 3a to help meet the housing need. There are 307 dwellings expected to be delivered from sites in Flood Zone 3a, leading to a cumulative total of 4,405. The final step is to consider brownfield sites in Flood Zone 3b (see Background Paper 9a on Flood Risk to explain the approach to brownfield FZ3b). This is necessary due to the limited number of sites that are available in Oxford and the significant housing need. This brings the cumulative total from identified sites to 5,688 dwellings.

#### **Potential to locate more vulnerable uses on lower flood risk sites**

4.5 Sites in Flood Zone 1 are suitable for all types of development and can be said to pass the sequential test. If allocations are needed on sites outside of Flood Zone 1, another important part of the sequential test is identifying whether sites in lower flood risk zones where less vulnerable uses are proposed that could be swapped to sites in higher flood risk zones so that the more vulnerable uses could be accommodated on sites of the lowest flood risk.

4.6 Appendix 1 shows the flood risk vulnerability classification of proposed uses for sites in Flood Zone 1. It shows that the majority of the preferred uses for sites in Flood Zone 1 are more vulnerable uses (mostly residential development). Where a less vulnerable use is the preferred use, consideration is given as to whether a more vulnerable use (especially residential development) could be accommodated instead, especially given the pressing need for housing. However, the allocations align with the Plan strategy and reflect landowner aspirations. Housing is generally prioritised. Sites in Flood Zone 1 without an expectation of housing are sites in other uses that the landowner has put forward for intensification within those same uses, as is the case for Flood Zone 2 and 3a.

## 5. STAGE D: ASSESS RISK OF FLOODING FROM OTHER SOURCES

5.1 The PPG states that, for the purposes of applying the NPPF, flood risk should be interpreted as a combination of the probability and the potential consequences of flooding from any source, now or in the future<sup>5</sup>. Sources include from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers and drainage systems, and from reservoirs, canals and lakes and other artificial sources. Within each flood zone, surface water and other sources of flooding also need to be taken into account in applying the sequential approach to the location of development.

5.2 The Flood Zones identified in the SFRA and subsequently applied in Appendix 1 are based on flood risk from fluvial sources. The SFRA identifies fluvial sources as the primary source of flood risk in Oxford in terms of both flooding extent and the number of properties at risk. However, it is important that the risk of flooding from other sources is also considered (although data for other flood risk sources may not be as reliable). Appendix 1 does also set out surface water flood risk.

5.3 In addition to fluvial flood risk, the SFRA also considers:

- Ordinary watercourses
- Surface water flooding
- Reservoir flooding
- Oxford canal
- Ground water flooding, and
- Sewers and drainage systems.

- Ordinary watercourses

These include most watercourses that are not designated as a main river and include but are not limited to other rivers, streams, ditches and drains etc. These watercourses are not included in the existing hydraulic models for Oxford. To assess flood risk from these watercourses, the Environment Agency's flood maps are used, although their surface water mapping has to be used in conjunction with their fluvial mapping, as the latter does not typically show flood extents for catchments less than 3km<sup>2</sup>. It should be noted that not all the conveyance area of ordinary watercourses is explicitly modelled nor structures such as culverts in most cases. Therefore, the mapping usually provides a conservative assessment of the flood risk from ordinary watercourses and should not be used as definitive mapping.

- Surface water flooding

This type of flooding is often the result of high peak rainfall intensities and insufficient capacity in the sewer network. Surface water flooding is a significant flood risk in an urban area like Oxford due to the high proportion of impermeable surfaces that cause a significant increase in runoff rates and consequently the volume of water that flows into the sewer network.

---

<sup>5</sup> <https://www.gov.uk/guidance/flood-risk-and-coastal-change#planning-and-flood-risk> - Paragraph: 001  
Reference ID: 7-001-20220825

Although managing the risk of flooding from surface water is the responsibility of Lead Local Flood Authority (in this case Oxfordshire County Council), the Environment Agency have produced the updated Flood Map for Surface Water (uFMfSW) under their strategic role in England. This combines the Environment Agency's nationally produced surface water flood mapping and appropriate locally produced maps from the County Council. The map is intended to be the best single source of information on surface water flooding, incorporating the latest Environment Agency modelling techniques and local data. Some caution is required though, as the SFRA indicates that there are some assumptions and limitations involved with the data, therefore the maps should only be used at the strategic planning level. However, all sites greater than 1 hectare or in Flood Zone 2 or above will be required to produce a site-specific Flood Risk Assessment to assess the risk from surface water flooding at the detailed planning application stage.

- Reservoir flooding

In 2021, the Environment Agency published updated maps showing the flood risk associated with reservoirs. Dam breach and flood modelling techniques were used to produce a new national set of reservoir flood maps for England. The maps show two flooding scenarios, including a 'dry-day' and a 'wet-day'. The 'dry-day' scenario predicts the flooding that would occur if the dam or reservoir failed when rivers are at normal levels. The 'wet day' scenario predicts how much worse the flooding might be if a river is already experiencing an extreme natural flood. Three reservoirs have been identified which could impact Oxford City; one in Banbury and two in Farmoor.

The modelled extents tend to lie along the River Thames and River Cherwell. The two Farmoor reservoirs impact the River Thames whilst the Banbury Flood Alleviation Scheme impacts the River Cherwell and River Thames downstream of the confluence between the two watercourses. Areas affected within the Thames floodplain include parts of Wolvercote, New Botley, Osney, Grandpont and New Hinksey. Areas affected within the Cherwell floodplain include limited parts of Summertown, New Marston, Headington, St Clements and Iffley.

Whilst these areas are shown to be at risk, reservoir failure is a rare event with a very low probability of occurrence. Current reservoir regulation, which has been further enhanced by the Flood and Water Management Act 2010, aims to ensure that all reservoirs are properly maintained and monitored to detect and repair any problem. Therefore, the risk of reservoir flooding should not influence the site allocations process.

- Oxford Canal

Given the proximity of the Oxford Canal to other watercourses in Oxford city centre, flooding from the canal should be recognised as a potential risk. However, the Canal and River Trust have recorded no historical breaches or incidents of overtopping within the city limits.

- Ground water flooding

This type of flooding is defined as the emergence of groundwater at ground level. There are limited local data with respect to groundwater flooding. However, for a strategic level

assessment of the potential for groundwater flooding, the British Geological Survey UK Geoviewer has been used to determine the bedrock across the study area, with the Landis Soils map used to determine the soils present. There is a lack of reliable data relating to groundwater flooding and therefore it is difficult to make any site-specific judgements on this issue alone.

- Sewers and drainage systems (Thames Water)

Sewer flooding often occurs because of an existing drainage system having insufficient capacity to drain rainfall, consequently causing the release of water at manholes. Sewer flooding can also occur should there be a fault/failure at an existing drainage system. The SFRA retains the assumption that the surface water flood risk from the surface water sewer network in Oxford is low. It is suggested that foul sewer flooding is primarily a result of operational issues such as sewer blockages, although there are areas where sewers are overloaded during significant rainfall events. There is insufficient data available to assess the flood risk resulting from sewers and drainage systems to individual sites.

## 6. STAGE E: THE EXCEPTIONS TEST

6.1 The Exception Test, as set out in paragraph 178 of the NPPF<sup>6</sup> (2024), is a method to demonstrate and help ensure that flood risk to people and property will be managed satisfactorily, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

6.2 There are two parts to the Exceptions Test:

- i. It must be shown that the development would provide wider sustainability benefits to the community that outweigh the flood risk; and
- ii. It must be shown that 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. A SFRA (Level 2) is required to inform this assessment.

6.3 The PPG sets out when the Exception Test should be applied. Figure 4 below is taken from the PPG<sup>7</sup> and illustrates that development of sites in Flood Zone 3a proposed for more vulnerable uses such as housing will require an Exceptions Test. In addition, where previously developed sites in Flood Zone 3b are proposed, an exceptions test will also be required. The Level 2 SFRA includes more detailed site-specific analysis and mapping to indicate whether a site is likely to be able to pass the Exceptions Test. This has been done for all sites which are allocated in Flood Zones 2 or 3, and indicates that all those sites are likely to pass the Exceptions Test as applicable at the planning application stage.

---

6

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1182995/NPPF\\_Sept\\_23.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1182995/NPPF_Sept_23.pdf)

<sup>7</sup> <https://www.gov.uk/guidance/flood-risk-and-coastal-change#para79>

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

Key:

✓ Exception test is not required

X Development should not be permitted

*Figure 4: Flood risk vulnerability and flood zone ‘incompatibility’*

## 7. Conclusion

7.1 This paper sets out the Sequential approach and Sequential Test that has been applied to the site allocations in the OLP2045, in order to direct development to the areas of lowest flood risk possible, in accordance with national planning policy.

7.2 The physical constraints in Oxford, and the lack of new sites for new development, mean that it has not been possible to direct all site allocations to Flood Zone 1: There are site allocations, including for residential development, in higher flood risk zones. This is particularly the case where there is existing development on brownfield sites which – if redeveloped – could offer wider sustainability benefits. In those instances, additional flood risk assessment would be required at the planning application stage and mitigation measures applied accordingly, to minimise risk as far as possible.

## Appendix 1

SHLAA ref	Site	Site area (ha)	Flood Zone	Flood zone with climate change allowances	Surface water flood risk	Proposed use	Flood risk vulnerability classification of proposed use	Opportunities to swap allocation to a use with a different vulnerability?	Potential site housing capacity*
<b>Flood Zone 1</b>									
1a1	Oxford North remaining phases	13.28	1	1	Patches more prevalent towards the northern part of the site.	Mixed use - housing and employment	Mix of more vulnerable and less vulnerable uses	Part of the allocation is already for a more vulnerable use.	161
1a2	Oxford North Phase 1A & Canalside Parcel	10.15	1			Mixed use - housing and employment	Mix of more vulnerable and less vulnerable uses	Part of the allocation is already for a more vulnerable use. Commercial Phase 1A completed 2025.	319
1b	Land North of Goose Green	1.29	1			Housing	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	24
1c	Red Barn Farm	0.96	1	1	Southern portion of the site is impacted by surface water flood risk.	Employment	Less vulnerable	No – landowner has no intention to develop this site for housing.	0
1e	Pear Tree Farm	2.54	1	1	Majority of site is impacted by surface water flood risk.	Housing	More vulnerable	Allocation already for a more vulnerable use.	111
2a2	Barton Park - Phase 2	2.29	1			Housing	More vulnerable	Allocation already for a more vulnerable use.	92
006b	Banbury Road University Sites - Parcel B	1.26	1	1	Patches of surface water flood risk present within site.	Student accommodation and academic institutional	Mix of more vulnerable and less vulnerable uses	Part of the allocation is already for a more vulnerable use. The less vulnerable use allows the University to combine some of its existing	54



								facilities onto one site, thereby achieving efficient use of land.	
9	Blackbird Leys Central Area	2.21	1			Mixed use - housing and employment	Mix of more vulnerable and less vulnerable uses	Majority of site is already under construction, and part of the allocation is already for a more vulnerable use.	
14	Templars Square	3.88	1	1	Patches of surface water flood risk present, particularly towards the south western area around Hockmore Street and central area to the east.	Residential-led mixed use development	Mix of more vulnerable and less vulnerable uses	Part of the allocation is already for a more vulnerable use. The site is located within Cowley Centre District Centre. The Local Plan 2045 strategy is to encourage a range of uses in district centres that contain active frontages to support and enhance the vibrancy of the centre for local communities.	500
17	Crescent Hall	0.9	1	1	Surface water flood risk present, and more prevalent within the south eastern half of the site, towards Hollow Way.	Student accommodation	More vulnerable	Allocation already for a more vulnerable use.	75
18	Diamond Place and Ewert House	1.85	1	1	Surface water flood risk present within site, particularly over the existing car park.	Mixed use - housing, employment and community uses.	Mix of more vulnerable and less vulnerable uses	A significant part of the allocation already expected to be for a more vulnerable use. The site is located within Summertown District	135

								Centre. The Local Plan 2045 strategy is to encourage a range of uses in district centres that contain active frontages to support and enhance the vibrancy of the centre for local communities.	
20b2	Elsfield Hall, Elsfield Way	0.39	1	1	Very small patches of surface water flood risk adjacent to the northern and western boundaries of the site.	Housing	More vulnerable	Allocation already for a more vulnerable use.	27
24	Government Buildings and Harcourt House	2.37	1	1	Patches of surface water flood risk around the southern half of the lower parcel.	Mixed use academic development including residential accommodation for staff and students	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	68
26	Jesus College Sports Area - Site B Herbert Close Tennis Courts	0.55	1	1	Very small patch of surface water flood risk along north eastern edge of site.	Postgraduate accommodation	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	16
27	John Radcliffe Hospital	27.75	1	1	Surface water flood risk present throughout site, and more	Hospital related uses and employer-linked affordable	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	595

					prevalent around the hospital buildings to the north west and south east.	housing			
32	Lincoln College Sports Ground	0.8	1	1	Small patches of surface water flood risk towards western part of site	Housing including graduate accommodation	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	24
33	Littlemore Mental Health Centre, Sandford Road	6.6	1	1	Patches of surface water flood risk present throughout site.	Hospital use, and associated residential development which may include employer-linked housing or student accommodation	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	60
38a2	Thornhill Park (Phase 2)	3.39	1	1	Small patches of surface water flood risk to the north of the site close to the London Road and a couple of smaller patches further south.	Residential-led mixed use redevelopment	Mix of more vulnerable and less vulnerable uses	A significant part of the allocation already expected to be for a more vulnerable use.	402
39	Northfield Hostel, Sandy Lane West	0.7	1			Housing	More vulnerable	Site under construction and is already for a more vulnerable use.	
42	Nuffield Orthopaedic	8.38	1	1	South-east quarter of site	Intensification of site for	More vulnerable	Allocation already for a more vulnerable use in	0

	Centre (NOC				has a large area of surface water flood risk, with smaller patches interspersed across rest of site.	continued healthcare uses.  Site is not available for residential.		Flood Zone 1.	
49	Oxford University Press Sports Ground, Jordan Hill	3.66	1	1	Large patch of surface water flood risk along the upper side of the eastern perimeter, with small patches along the southern perimeter.	Housing and public open space	Mix of more vulnerable, and water compatible uses	Allocation already for a more vulnerable use in Flood Zone 1. (Housing led development).	90
52	Railway Lane, Littlemore	0.97	1			Housing	More vulnerable	Site under construction and is already for a more vulnerable use.	90
54	Ruskin Campus	1.86	1	1	Surface water flood risk present, particularly towards eastern end of site.	Academic institutional uses, student accommodation and housing development	Mix of more vulnerable and less vulnerable uses	Allocation already for a more vulnerable use in Flood Zone 1.	30
61	Union Street Car Park	0.24	1	1	Surface water flood risk runs along the length of Collins Street, forming the northern boundary of the site and	Housing including student accommodation	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	15

					extending down the eastern and western boundaries.				
62	University of Oxford Science Area & Keble Road Triangle	12.43	1	1	Patches of surface water flood risk dotted across the four parcels that make up the site. Larger areas cover much of the north-western triangular parcel and part of the south-east parcel.	Academic and research uses only	Less vulnerable	No - landowner has no intention to develop this site for housing.	0
63	Warneford Hospital	8.67	1	1	Patches of surface water flood risk more prevalent in the south-west of the site with some smaller patches around the north-east boundaries.	Hospital and medical related B1a and B1b and housing including key worker housing	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	74
65	West Wellington Square	0.88	1	1	Surface water flood risk to the south-west corner of site and also near the eastern boundary.	Mixed use including housing, student accommodation and academic institutional	Mix of more vulnerable and less vulnerable uses	Allocation already for a more vulnerable use in Flood Zone 1.	13
69	County Hall	0.33	1			Retain or	Less vulnerable	No - landowner has no	0

						redevelop for economic use		intention to develop this site for housing.	
95a2	Between Towns Road (incl. 17, 17b and Cowley Conservative Club)	0.32	1			Student accommodation	More vulnerable	Site under construction and is already for a more vulnerable use.	78
104	Former Iffley Mead Playing Field	2.04	1	1	Very small patch of surface water flood risk on the south eastern boundary.	Housing	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	84
107	St Frideswide Farm	3.95	1			Housing	More vulnerable	Site under construction and is already for a more vulnerable use.	134
110	Speedwell House (west part)	0.15	1			Intensify and retain for employment (offices)	Less vulnerable	No - landowner has no intention to develop this site for housing.	0
112a1	Hill View Farm	4.25	1			Housing	More vulnerable	Site under construction and is already for a more vulnerable use.	159
112b1	Land West of Mill Lane	1.99	1			Housing	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	80
114d	Marston Paddock (Fishers Vale)	0.83	1			Housing	More vulnerable	Site under construction and is already for a more vulnerable use.	40
114e	Marston Paddock Extension	0.51	1			Housing	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	20
120	Unipart Site	30.63	1	1	Patches of surface water flood risk present throughout site.	Economic	Less vulnerable	No - established employment site, no landowner intention to develop residential.	0

124	Slade House	1.31	1	1	Patches of surface water flood risk present, particularly towards the east of the site.	Improved health-care facilities and/or residential development, including employer-linked affordable housing	Mix of more vulnerable and less vulnerable uses	Allocation already for a more vulnerable use in Flood Zone 1.	0 (against little more)
204	East Oxford Bowls Club	0.3	1	1	Surface water flood risk located predominantly inside the north western, south eastern and south western perimeter of site.				10
234	Jesus College Sports Area - Site A Playing Field	0.8	1	1	Small patches of surface water flood risk towards southern and western corners of site.				24
289	Sandy Lane Recreation Ground	5.15	1	1	Surface water flood risk is across majority of the site.				300
346	Former Bartlemas Nursery School, 269 Cowley Road	0.24	1						
354b	Underhill Circus Garages	0.06	1						
356	276 Banbury Road	0.35	1						

428	Rectory Centre	0.21	1	1	Patch of surface water flood risk in south eastern corner of site.				0 (against littlemore)
437	Wood Centre for Innovation	0.41	1						
439	Oxford Brookes Marston Road Campus	1.18	1	1	A significant proportion of the site is at risk from surface water flooding.				42
440	1 Pullens Lane	0.42	1	1	No surface water flood risk present on site.				
448b	Macclesfield House	0.2	1						
456	242-254 Banbury Road	0.18	1						
463	Ruskin Field	3.51	1	1	Patches of surface water flood risk present in close proximity to watercourse.				28
497	MINI Plant, Oxford	69.9	1	1	Large patches of surface water flood risk present, particularly centrally and towards the western corner of site.				0
515a	Eastpoint Business Park	1.51	1						



515b	Nuffield Industrial Estate, Ledgers Close	1.76	1						
520a	Knights Court and surrounding buildings	0.52	1						
520b	244 Barns Road	0.09	1						
560	Headington Hill Hall and Clive Booth Student Village	10.3	1						
569	Green Templeton College	1.6	1						
574	Manzil Way Resource Centre	0.75	1	1	Surface water flood risk present throughout site, particularly around the main buildings.				0 (against littlemore)
579	Radcliffe Observatory Quarter (ROQ) Site	4.29	1	1	Surface water flood risk in the northern part of the site adjacent to Green Templeton College and also on the eastern part of the site.				
587	ARC Oxford	35.4	1	1	Patches of surface water flood risk present across site.				0

598	Site of Millway Close	0.64	1			Housing	More vulnerable	Site under construction and is already for a more vulnerable use.	4
602	Halliday Hill/ Westlands Drive	0.34	1			Housing	More vulnerable	Allocation already for a more vulnerable use in Flood Zone 1.	15
608	220-226 Iffley Road	0.23	1						
609	St Stephen's House (17 Norham Gardens)	0.25	1						
610	Tamesis (45-53 Iffley Road)	0.14	1						
611	1-3 Cambridge Terrace	0.10	1						
618	3, 3A, 4, 5 and 6 South Parade	0.18	1						
622	Land to the rear of 60 Old Road	0.12	1						
625	East Oxford Community Centre	0.19	1						
626	East Oxford Games Hall	0.05	1						
629	Wood Farm Health Centre	0.12	1						
631	49 - 51 Jeune Street	0.05	1						
647	Fairfield 115 Banbury Road	2.47	1						
648	Northbrook House	0.29	1						
654	Crown & Thistle PH	0.08	1						
655	13-15 Oxenford House, Magdalen Street	0.04	1						
656	The Bungalow Sandy Lane	0.06	1						

657	Clarendon Centre	0.74	1						
658	Land off Harolde Close	0.74	1						
659	16 Quarry Road	0.11	1						
660	2 Harberton Mead	0.4	1						
661	2 New High Street	0.03	1						
662	46-51 St Clements, 2-4 Caroline Street	0.07	1						
663	26 Cave Street	0.16	1						
664	Jowett Walk (South)	0.12	1						
667	Former Headington Coop, 152 London Road	0.21	1						
668	Cranbrook House, 287-291 Banbury Road	0.07	1						
669	6-25 Pusey Lane	0.13	1						
679	Mansfield College	1.12	1						
<b>Total in Flood Zone 1</b>									

SHLAA ref	Site	Site area (ha)	Flood Zone	Flood zone with climate change allowances	Surface water flood risk	Proposed use	Flood risk vulnerability classification of proposed use	Opportunities to swap allocation to a use with a different vulnerability?	Potential site housing capacity*
Flood Zone 2									
12	Churchill Hospital	22.74	2	2	Several patches of surface water flood risk present within site.				0 (against JR)
21	Faculty of Music	0.33	2	2 (now entire site)	Surface water flood risk present on the eastern, southern and western boundaries, with narrow corridor extending into site from the west.				23
43	Old Road Campus	6.41	2	2	Patches of surface water flood risk present throughout site.				
075 (a and b)	Oxford Railway Station and Becket Street Car Park	2.56	2	3b	Surface water flood risk present within site, with the largest patches around the station building in the northern				52

[illegible]

SHLAA ref	Site	Site area (ha)	Flood Zone	Flood zone with climate change allowances	Surface water flood risk	Proposed use	Flood risk vulnerability classification of proposed use	Opportunities to swap allocation to a use with a different vulnerability?	Potential site housing capacity*
Flood Zone 3a									
31	Manor Place	1.24	3a	3a	Patches of surface water flood risk to the east of the site, noticeably towards the south eastern corner.				43
81	Worcester Street Car Park and Public House	0.51	3a	3b	Surface water flood risk present from south west to north east across the site and towards the southern corner.				0 (against Island site)
113	Redbridge Paddock	3.64	3a	3b	A few very small patches of surface water flood risk within site.				200
117	Land surrounding St Clement's Church	2.31	3a	3a	Surface water flood risk to the south of the church and along the eastern perimeter of the site.				50

[illegible]

SHLAA ref	Site	Site area (ha)	Flood Zone	Flood zone with climate change allowances	Surface water flood risk	Proposed use	Flood risk vulnerability classification of proposed use	Opportunities to swap allocation to a use with a different vulnerability?	Potential site housing capacity*
Flood Zone 3b									
2a4	Barton Park - Phase 4	7.43	3b	3b					
008a	Bertie Place Recreation Ground	0.67	3b	3b	Small patch of surface water flood risk towards western boundary of site.	Housing	More vulnerable	Allocation already for a more vulnerable use.	25
11	Canalside Land, Jericho	0.49	3b	3b	Patches of surface water flood risk towards centre/ north east of site.	Mixed use including housing	Mix of more vulnerable, less vulnerable and water compatible uses	Allocation already for a more vulnerable use.	0
16	Cowley Marsh Depot	1.71	3b	3b	Large patches of surface water flood risk within central area of site.	Housing	More vulnerable	Allocation already for a more vulnerable use.	83
28a	Kassam Stadium	6.52	3b	3b	Patches of surface water flood risk, particularly around the main building.				290
28b	Overflow carpark at Kassam Stadium site	2.29	3b	3b	Patch of surface water flood risk towards far				100



					eastern corner of site.				
28c	Ozone Leisure Park & Minchery Farmhouse	3	3b	3b	Patches of surface water flood risk, particularly south of the stadium.				0
66	Windale House	0.78	3b	3b					
70	Island Site	0.65	3b	3b	Large patches of surface water flood risk towards western part of site, extending along the northern perimeter.				59
76	Oxpens	6.3	3b	3b	Patches of surface water flood risk present within site, with the largest patches located towards the eastern end.				450
122	New Barclay House, 234 Botley Road	1.04	3b	3b					
389	Land at Meadow Lane	0.99	3b	3b	Surface water flood risk present towards western	Housing	More vulnerable	Allocation already for a more vulnerable use.	29

					boundary of site.				
496	Blackwells, Beaver House, Hythe Bridge Street	0.44	3b	3b					
499a	Former Jewsons unit and yard, Lamarsh Road	0.7	3b	3b					
499b	Former Builders Yard, Lamarsh Road	0.44	3b	3b					
586	Osney Mead	17.8	3b	3b	Areas of surface water flooding scattered across the site.				247
588	Oxford Science Park	27.33	3b	3b	Various patches of surface water flood risk present within site.				0
593	Knights Road	2.25	3b	3b		Housing	More vulnerable	Site under construction and is already for a more vulnerable use.	
607a	135-137 Botley Road	1.04	3b	3b					
607b	Botley Road Retail Units	2.44	3b	3b					
607c	Units 1,1a 195 Botley Road	1.2	3b	3b					
607d	Units 2-5, 195 Botley Road	0.43	3b	3b					
607f	165-167 Botley Road	0.29	3b	3b					
607g	Meadowside Retail	1.35	3b	3b					

	Park								
642	Maltfield House, 26 Maltfield Road	0.2	3b	3b					
673	The Works, Crescent Road	0.06	3b	3b					
<b>Total in Flood Zone 3b</b>									

\*There are sites included in the potential capacity which have been completed since 01 April 2020. The portion of any site that has been completed after this date has been included in the capacity calculation to ensure this aligns with the same base date as the housing need identified in the HENA. During this site identification process, there are some sites that would have commenced construction, thereby not needing to be allocated in the Local Plan