

Oxford City Council

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Oxford City Level 2 Strategic Flood Risk Assessment

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1 Introduction

Wallingford HydroSolutions (WHS) Ltd has been commissioned by Oxford City Council (OCC) to undertake a Level 2 Strategic Flood Risk Assessment (SFRA) in accordance with the National Planning Policy Framework (NPPF)¹, Planning Practice Guidance (PPG)² and associated guidance from the Environment Agency (EA).

Oxford City Council has carried out a sequential test of sites within its administrative area. The results of which show that a number of sites may need to be located in Flood Zone 2, Flood Zone 3a and Flood Zone 3b. Table 1 list the full names of the site assessed and their locations are displayed in Figure 1.

This Level 2 SFRA includes a detailed assessment of flooding at each of the sites based on available model data, flood defence information, surface water flood mapping, historical flood data, geological data, reservoir flood mapping and flood warning areas. The assessments also include guidance for the preparation of site-specific Flood Risk Assessments (FRAs), including information about the use of SuDS and the need for mitigation measures. From this information the appropriateness of development on the sites and likelihood of passing the Exception Test (where required) has been determined.

This document details the methodology applied; the specific site assessments are provided in Appendix 1 which include the results of the flood risk analysis along with the conclusions and recommendations reached for each of the sites.

The EA have raised concerns on several other sites not considered for level 2 assessment. Appendix 2 provides justification on why these sites did not require a level 2 SFRA.

Table 1- Level 2 SFRA Sites

SHLAA Reference*	Site
008a	Bertie Place Recreation Ground
11	Canalside Land, Jericho
14	Templars Square
16	Cowley Marsh Depot
028a	Kassam Stadium
028b	Overflow carpark at Kassam Stadium site
028c	Ozone Leisure Complex & Minchery Farmhouse
70	Island Site
76	Oxpens
81	Worcester Street Car Park and Public House
117	Land surrounding St Clement's Church
389	Land at Meadow Lane
516	474 Cowley Road
586	Osney Mead
588	Oxford Science Park
613, 614, 615	Botley Road sites around Cripsey Road including River Hotel and Westgate Hotel
616	St Thomas and Osney Warehouse
624	Land south of Frideswide Square

* Note, the SFRA refers to SHLAA reference, the final local plan reference for these sites will likely differ.

¹ Ministry of Housing Communities & Local government (2024) National Planning Policy Framework
https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

² UK Government (2025) Planning practice guidance- Flood risk and coastal change
<https://www.gov.uk/guidance/flood-risk-and-coastal-change>

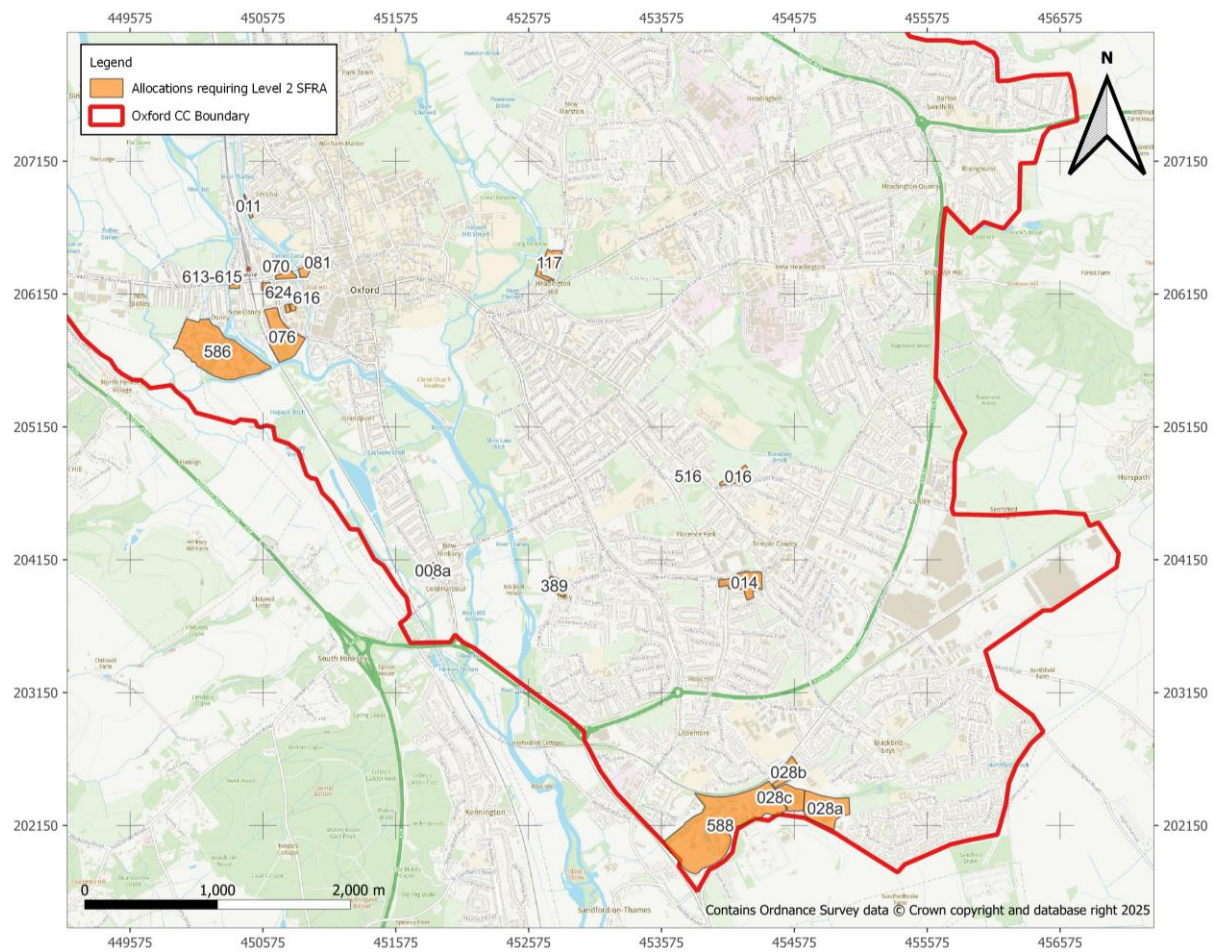


Figure 1- Site Locations Plan

2 Methodology

2.1 Sources of Data

This Level 2 SFRA presents an assessment of the risk of flooding from all relevant sources at each of the sites. To inform this, existing information and model data have been identified and collated for different sources of flooding. Specifically, the latest national and available detailed model data for Oxford City have been incorporated into the site-specific assessments, along with details on flood defences, surface water flooding, groundwater conditions, reservoir flooding and flood warning areas.

The main sources of data used to inform this SFRA include:

- EA Fluvial Flood Map for Planning (FMfP)- Flood Zones^{3 4} – to quantify baseline (Flood Zone 3a & Flood Zone 2) and climate change (1.0% AEP + CC & 0.1% AEP +CC) fluvial flood extents.
- EA Fluvial FMfP 3.3% Defended Flood Extents^{5 6} – to quantify baseline (Flood Zone 3b) and climate change (3.3% AEP + CC) fluvial flood extents.
- Hydraulic modelling data for the River Thames and tributaries (2018⁷, 2021⁸, 2023⁹) – to assess fluvial flood risk from the River Thames and major tributaries. Data includes depth, velocity and hazard information along with undefended 3.3% AEP extents and defended climate change extents.
- Risk of flooding from Rivers and Seas (ROFRS) Depth data – to obtain depth information at sites at significant fluvial flood risk where no detailed modelling is available (i.e. outside of Thames model extent).
- EA Surface Water Flood Maps^{10 11} – to quantify the baseline and climate change pluvial flood extents.
- Risk of flooding from Surface Water (ROFSW) Depth data – to obtain depth information for sites at significant pluvial flood risk.
- EA Reservoir Flood Mapping^{12 13} – to quantify reservoir flood extents in a wet and dry day scenario
- EA Historical Flood Map¹⁴ and Recorded Flood Outlines¹⁵ – to review historical flood events at or in the vicinity of sites.

³ EA (2025) *Flood Map for Planning – Flood Zones* <https://environment.data.gov.uk/dataset/04532375-a198-476e-985e-0579a0a11b47>

⁴ EA (2025) *Flood Map for Planning – Climate Change Extents (defended and undefended)* <https://environment.data.gov.uk/dataset/610d6830-0637-4f5b-b6ce-61f5fa5635d3>

⁵ EA (2025) *Flood Map for Planning – 3.3% AEP defended (present day)* <https://environment.data.gov.uk/dataset/56fb30ae-f20d-490a-9149-a94f3e640261>

⁶ EA (2025) *Flood Map for Planning – 3.3% AEP defended (Climate Change)* <https://environment.data.gov.uk/dataset/b9418b89-aa59-4153-91dd-470f473152dd>

⁷ CH2M (2018) *Oxford Baseline Hydraulic Modelling*

⁸ Jacobs (2022) *Oxford Flood Alleviation Scheme Modelling*

⁹ WHS (2023) *Updated Climate Change (Gloucestershire and the Vale management catchment) Model Runs*

¹⁰ EA (2025) *Risk of Flooding from Surface Water* <https://environment.data.gov.uk/dataset/b5aaa28d-6eb9-460e-8d6f-43caa71fbc0e>

¹¹ EA (2025) *Risk of Flooding from Surface Water – Climate Change 1* <https://environment.data.gov.uk/dataset/e5b38de2-99b3-44ee-b10c-b244926878ef>

¹² EA (2025) *Reservoir Flood Extents - Wet Day (National)* <https://environment.data.gov.uk/dataset/d81646cf-37e5-4e71-bbcb-b7d5b9ca3a1c>

¹³ EA (2025) *Reservoir Flood Extents - Dry Day (National)* <https://environment.data.gov.uk/dataset/c66ee97f-49d2-454e-9a19-d48a47bd22ad>

¹⁴ EA (2025) *Historic Flood Map*, <https://www.data.gov.uk/dataset/76292bec-7d8b-43e8-9c98-02734fd89c81/historic-flood-map>

¹⁵ EA (2025) *Recorded Flood Outlines*, <https://www.data.gov.uk/dataset/16e32c53-35a6-4d54-a111-ca09031eaaaf/recorded-flood-outlines>

- EA flood defence structures¹⁶ – to assess existing formal and informal flood defences present at or in the vicinity of sites.
- British Geological Survey (BGS) geoviewer¹⁷ – To determine local bedrock and its expected permeability informing assessment of groundwater flood risk.
- Soils map¹⁸ – To determine local soil and its expected permeability informing assessment of groundwater flood risk.

At each of the sites assessed a comparison has been made between i). the EA's nationally available FMfP extents and ii). hydraulic modelling data held for the watercourses within Oxford. In many locations the hydraulic modelling data informs the FMfP and the flood extents are identical. However, following the release of the updated National Flood Risk Assessment (NaFRA) in early 2025, there are cases where the new national model replaces or is combined with existing modelling data leading to differences.

The data applied to assess flood risk at each site is detailed in the site reports (see Appendix 1) and a technical note is provided in Appendix 3 which gives reasons why one dataset was favoured over another.

2.2 Assessment of Flood Risk

For each site, all relevant sources of flood risk have been considered. It should be noted that sewer flooding has not been assessed directly. Thames Water has provided DG5 sewer flood incident data, which is presented within the Level 1 SFRA. However, as this dataset is reliant on incident reporting and is provided for broad postcode areas, it was deemed inappropriate to assign a definitive sewer flood risk to individual sites based on this information.

Initially the assessment focuses on flood extent, flood defence, site geology and flood warning information. Based on this initial assessment, the primary flood risk in terms of fluvial or surface water flooding is identified for further assessment. Where both sources are considered significant, fluvial and surface water flood risks are both examined in greater detail.

This detailed assessment considers the characteristics of the design flood event (i.e. the 1.0% Annual Exceedance Probability (AEP) event plus climate change). The assessment includes the use of relevant modelling data to evaluate:

- The speed of onset
- Flood depth
- Flood velocity
- Overall flood hazard (ZUK0) and potential impacts
- Access and Egress

For sites at risk of fluvial flooding from the River Thames and its tributaries (including the River Cherwell and the backwaters through Oxford City Centre), the River Thames and Tributaries model has been used. Model outputs for the 1.0% AEP plus 26% climate change event have informed the assessment. Where sites are partially located within Flood Zone 3b, the higher central allowance event (1.0% AEP plus 41% climate change) has also been evaluated.

¹⁶ EA (2025) AIMS Spatial Flood Defences (inc. standardised attributes) <https://www.data.gov.uk/dataset/cc76738e-fc17-49f9-a216-977c61858dda/aims-spatial-flood-defences-inc-standardised-attributes>

¹⁷ BGS (2025) *BGS Geology Viewer*, <https://geologyviewer.bgs.ac.uk/>

¹⁸ Cranfield Soil and Agrifood Institute (2025) *Soils map*, <http://www.landis.org.uk/soilsmap/>

For sites outside the River Thames and Tributaries model domain, namely those affected by the Boundary Brook, Northfield Brook, and Littlemore Brook, the RoFRS depth data for the 1.0% AEP + Climate Change event has been used. Although detailed models exist for these watercourses, they are over a decade old and were deemed not to meet the standard required to inform the latest Flood Modelling for Planning (FMfP) update (January 2025).

For sites at risk of pluvial flooding, RoFSW depth data for the 1.0% AEP + Climate Change event has been used, as no detailed surface water modelling currently exists in the vicinity of the sites assessed.

It should be noted that the climate change allowances used in both the RoFSW and RoFRS are based on the 2050's epoch (2041-2069) and reflect the median estimate of rainfall and peak flow increases respectively. If the development has a lifetime beyond this time period, a site-specific FRA should consider the climate change impacts for the 2080's epoch (2075-2125).

Following a review of flood risk, flood defences and the identification of access/egress routes, an assessment was made on whether a future site-specific FRA would be able to show that the site can be allocated for development. The assessment takes into account the NPPF's flood risk vulnerability and flood zone compatibility classifications shown in Table 2. Flood hazard during the design flood event is also considered in relation to the scale of development proposed. In this context, any mitigative actions required to meet the Exception Test (see section 2.4). are outlined including ground raising and compensatory storage.

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

Flood Zones	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	✓

Note, to determine final finished floor levels and the specific volume of compensatory storage required a modelling assessment would be needed incorporating information on the site layout. The layouts for each site are not available at this stage and would typically be determined at the planning stage. Therefore, at this stage the assessment reviews the likely degree of ground raising required (if any) based on the baseline flood levels. From this information a qualitative assessment of potential offsite impacts and compensatory storage requirements is undertaken.

The site assessments also include guidance for the preparation of site specific FRAs, including information about the use of SuDS and any other actions required at the planning stage considering the overall flood risk at the site.

2.3 Exception Test

The NPPF outlines the use of the Exception Test for determining whether a particular development is suitable within areas vulnerable to flooding. The Exception Test is required if a development is:

- Highly vulnerable and in Flood Zone 2
- Essential infrastructure in Flood Zone 3a or 3b
- More vulnerable in Flood Zone 3a

The Exception Test comprises the following two requirements, which the NPPF states must be passed for development to go ahead:

- It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk.
- It must demonstrate that 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.

This Level 2 SFRA provides a high-level review of the second part of the Exception Test considering the likelihood of each of the sites passing this element. This has considered i) the safety of future occupants in terms of finished floor levels and safe access/egress, ii) whether the scale of development is appropriate with respect to off site impacts and iii) whether flood risks onsite can be reduced.

The layouts for each site are not available at this stage and would typically be determined at the planning stage. If the sites are allocated, a site-specific FRA will need to be undertaken at the planning application stage to provide a more detailed assessment of flood risk and design mitigation measures where required to ensure that the development is safe for its lifetime.

Appendix 1 – Site Specific Assessments

Appendix 1 is in a separate document

Appendix 2 – Justification for sites not requiring a Level 2 SFRA

Justification for Sites not requiring a Level 2 SFRA

Sites with a small proportion of land in Fluvial Flood Zones

The Environment Agency (EA) identified four sites (SHEELA reference: 012, 021, 075a/b and 113) where a small part of land lies within Flood Zone 2 and expressed some concern as to why these had not been put through a more detailed Level 2 assessment. The reasons for this are explained for each site below.

Churchill Hospital (012)

As can be seen from Figure 1, a very tiny amount of Flood Zone 2 is present towards the north western corner of the site. Given the overall size of the site and the negligible extent of Flood Zone 2 within the site boundary, it is considered feasible to locate any proposed development entirely outside areas of flood risk. On this basis, it was deemed disproportionate to undertake a more detailed assessment under a Level 2 assessment. Any residual risk will be assessed at the planning stage with a site-specific Flood Risk Assessment (FRA).

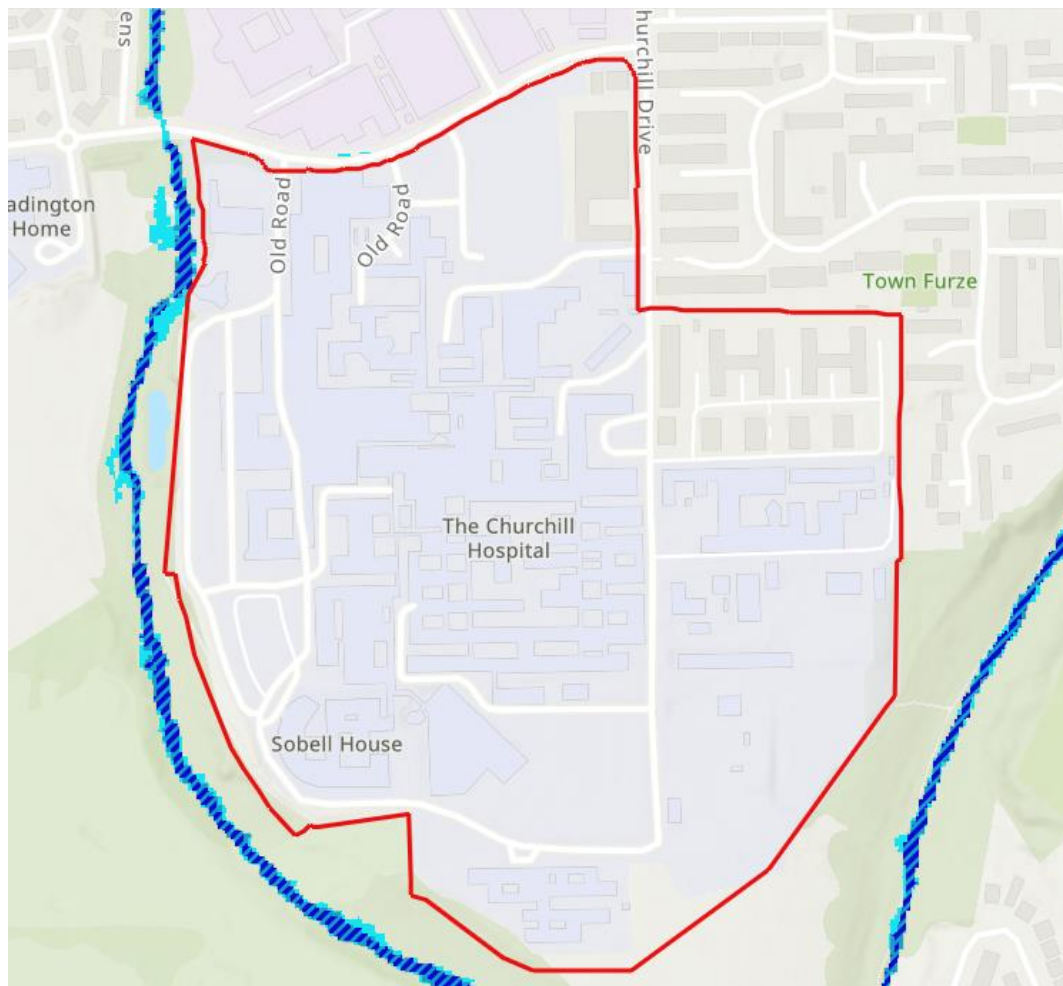


Figure 1- Fluvial Flood Mapping at Churchill Hospital (012)

Faculty of Music (021)

Figure 2 indicates that a very small area in the south-eastern corner of the site lies within Flood Zone 2. As this area is adjacent to the Trill Mill Stream, the required 10 m buffer between the watercourse and any new development would mean that all development will be located outside of the flood zone. Any residual risk from the watercourse will be managed through the draft site allocations policy, which requires any flood risk to be addressed through a site-specific FRA. Considering all of the above, it was deemed disproportionate to undertake a more detailed assessment under a Level 2 assessment.



Figure 2- Fluvial Flood Mapping at Faculty of Music (021)

Oxford Railway Station and Becket Street Car Park (075 (a, and b))

Figure 3 shows that a very small proportion of the site lies within Flood Zone 2, mainly along the southern edge of the northern parcel and the eastern edge of the southern parcel. Given the overall size of the site and the negligible extent of Flood Zone 2 within the site boundary, it is considered feasible to locate any proposed development entirely outside areas of flood risk. On this basis, it was deemed disproportionate to undertake a more detailed assessment under a Level 2 assessment. Any residual risk will be assessed at the planning stage with a site-specific FRA.



Figure 3- Fluvial Flood Mapping at Faculty of Music (021)

Redbridge Paddock (113)

Figure 4 shows that a very small proportion of the site lies within Flood Zone 2 and 3a, mainly along the northern and southern edges of the site. Given the overall size of the site and the negligible extent of Flood Zone 2 within the site boundary, it is considered feasible to locate any proposed development entirely outside areas of flood risk. On this basis, it was deemed disproportionate to undertake a more detailed assessment under a Level 2 assessment.

It is noted that the mapping indicates a potential access route to the site, the Southern Bypass Road as lying within Flood Zone 3b. This is due to it crossing a watercourse, it should be noted that in reality the road is significantly elevated above the river so the mapping does not give an accurate representation of flood risk, which is expected to be negligible.

Any residual risk to the site and its access will be assessed at the planning stage with a site-specific FRA.

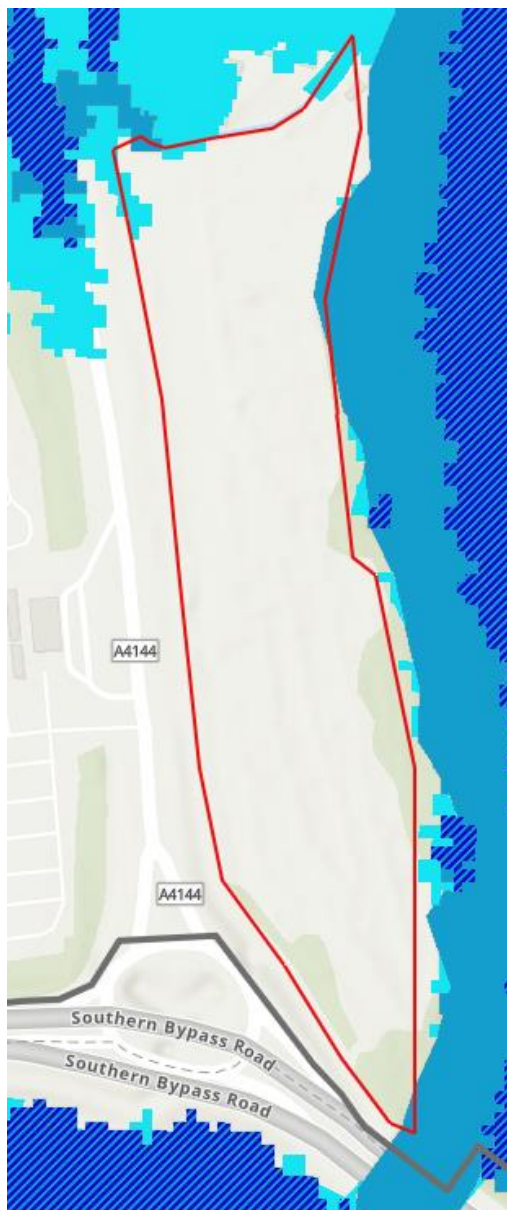


Figure 4- Fluvial Flood Mapping at Redbridge Paddock (113)

Sites containing or close to ordinary watercourses

The EA has identified 10 sites that are wholly located within Flood Zone 1 but either contain, or are adjacent to, an Ordinary Watercourse. Given the relatively low level of flood risk at these sites, the preparation of a full Level 2 SFRA was considered disproportionate. However, a high-level assessment has been undertaken, including a review of the EA's Surface Water Flood Maps which provide a representation of flood risk from these watercourses. A summary of the assessment for each site is provided below.

Oxford North remaining phases (001a1)

The EA has identified an ordinary watercourse adjacent to the northern boundary of the site. The surface water flood risk mapping indicates that small patches of high flood risk appear towards the centre and south of the site, with a more significant area towards the northern corner of the site, south of Red Barn Farm Cottage. This latter area is likely associated with the ordinary watercourse. Overall, the at-risk areas shown in the surface water mapping account for a very small proportion of the site and it should be possible to locate all development outside of significant flood risk areas. Any residual risk to the site will be assessed at the planning stage with a site-specific FRA.

Pear Tree Farm (001e)

The EA has identified an ordinary watercourse within the site which appears to be present centrally and towards the upper western boundary of the site. The surface water flood risk mapping indicates that large patches of high flood risk appear within the northern half of the site. Given that this accounts for a significant proportion of the site, it is recommended that a site-specific FRA should be included within any policy allocation so that the flood risk can be investigated further.

Churchill Hospital (012)

An ordinary watercourse lies in fairly close proximity to the northwest and east of the site and the EA have noted that it runs through the site. The surface water flood risk mapping indicates that small patches of medium and high flood risk appear in isolated areas across the site. However, none of these are widespread or concentrated in areas around the watercourse. The fluvial mapping does appear to capture flood risk from the watercourse, which is limited to a very small portion of the site in the northeast.

Considering all of the above, it should be possible to locate all development outside of flood risk areas. Any residual risk to the site will be assessed at the planning stage with a site-specific FRA.

Elsfield Hall, Elsfield Way (20b2)

The EA has identified an ordinary watercourse running adjacent to the north of the site. A site visit confirms that an ordinary watercourse is not present at the surface, although it may have been culverted. The surface water flood risk mapping indicates no presence of surface water flood risk at this site. In this regard, flood risk is not considered a barrier to development at this site.

John Radcliffe Hospital (27)

The EA has identified an ordinary watercourse running adjacent and through the west sections of the site. The surface water flood risk mapping indicates at risk areas along this watercourse, however they are very constrained and will not affect the scale of development proposed. Any residual risk to the site will be assessed at the planning stage with a site-specific FRA.

Littlemore Mental Health Centre (33)

The EA has identified an ordinary watercourse running through the site. The surface water flood risk mapping indicates that small patches of medium and high flood risk appear across the site. There are little patches located along the watercourse (towards the northwest of the site) but these represent a very small area. Slightly larger patches appear to be where there are existing buildings present. Overall, the total area effected is very small and does not present a barrier to development. Any residual risk to the site will be assessed at the planning stage with a site-specific FRA.

Thornhill Park (phase 2) (38a2)

The EA has identified an ordinary watercourse running adjacent to the (east of) the site. The surface water flood risk mapping indicates that very small patches of medium and high flood risk appear across the northern part of the site. These are located away from the watercourse and due to the watercourse very small scale, it is not considered to pose a major risk. The surface water extents in general are also very limited.

Considering all of the above, it should be possible to locate all development outside of flood risk areas. Any residual risk to the site will be assessed at the planning stage with a site-specific FRA.

Unipart Site (120)

The EA has identified an ordinary watercourse running through and adjacent to the site. The surface water flood risk mapping indicates that isolated patches of medium and high flood risk appear across the site, mainly adjacent to the curtilages of existing buildings. Some areas are located along the watercourse; however, these are present when it is outside of the site. Overall, the surface water extents are also limited, and it should be possible to locate all development outside of flood risk areas. Any residual risk to the site will be assessed at the planning stage with a site-specific FRA.

Ruskin Field (463)

The EA has identified an ordinary watercourse running through the site. The surface water flood risk mapping indicates that small patches of medium and high flood risk appear close to the watercourse. However, it accounts for a very small proportion of the overall site and it should be possible to locate all development outside of flood risk areas. Any residual risk to the site will be assessed at the planning stage with a site-specific FRA.

MINI Plant, Oxford (497)

The EA has identified an ordinary watercourse running through and adjacent to the site. The surface water flood risk mapping indicates that patches of medium and high flood risk appear across the site. There are little patches located along the watercourse (towards the north central part of the site) but these represent a very small area. Significantly larger patches do appear on the high-risk mapping but these mainly appear to be confined to where there are existing building present. Any residual risk to the site will be assessed at the planning stage with a site-specific FRA.

Appendix 3 – Flood Map for Planning and Modelling Data Review

Flood Map for Planning and Modelling Data Review

Introduction

At each of the sites assessed in the Oxford Level 2 Strategic Flood Risk Assessment (SFRA) a comparison has been made between i). the EA's nationally available Flood Map for Planning (FMfP) extents and ii). hydraulic modelling data held for the watercourses within Oxford. In many locations the hydraulic modelling data informs the FMfP and the flood extents are identical. However, following the release of the updated National Flood Risk Assessment (NaFRA) in early 2025, there are cases where the new national model replaces or is combined with existing modelling data leading to differences.

Following this exercise, a decision has been reached at each site upon the best data to assess flood risk. This technical note details the methods applied and the key findings.

Modelling Data available

The bullet points below summarise the hydraulic modelling data available for watercourses which affect the sites assessed in the level 2 SFRA.

- Hydraulic modelling data for the River Thames and tributaries (2018¹, 2021²)
- Hydraulic modelling data from the Northfield and Littlemore Brook (2011³)
- Hydraulic modelling data for the Boundary Brook (2010⁴)

This data was compared with the latest flood extents in the FMfP. This showed that for the majority of events the outputs from the Thames model aligned with the FMfP; indicating that it informs the FMfP. Where differences were observed, they are only for certain events or in specific locations. They tended to be very minor and are thought to be due to post-processing of the FMfP extents.

In terms of the Northfield and Littlemore Brook model and the Boundary Brook model the FMfP extents differ significantly. It is thought that the new national model now informs the FMfP along these watercourses. The decision to use the new national model is likely based on the age of the existing model data and potential limitations. For example, the boundary brook model is 1D only so flow routing across the wider floodplain is not represented.

Approach for Flood Extents

For sites affected by the Northfield, Littlemore and Boundary Brooks, the FMfP extents are used exclusively. This includes the extents for flood zone 2 and 3, the 3.3% defended extents and climate change extents. The FMfP extents pick up flooding within and close to the channel in more detail and include extents for the upper reaches which are not included in the older detailed models. Furthermore, the Boundary Brook model was never run for a 3.3% AEP event so has no data with which to inform Flood Zone 3b.

In terms of the River Thames as mentioned the extents are identical in most cases with only slight differences for certain events and locations. As the FMfP flood zones are obligatory for planning they are used at all sites. However, the 3.3% extents and the climate change extents for have been reviewed on a site-by-site basis.

In general, a precautionary approach has been adopted, with the dataset showing the greatest flood extent at each site selected. Where the 3.3% AEP extents are close to identical, the detailed modelling dataset has been used. This is because it provides undefended flood extents, which are not available in the FMfP. Where available, the undefended scenario is considered to be a better

¹ CH2M (2018) *Oxford Baseline Hydraulic Modelling*

² Jacobs (2022) *Oxford Flood Alleviation Scheme Modelling*

³ EA (2011) *Northfield & Littlemore Brook Hydraulic Model*

⁴ EA (2010) *Boundary Brook Hydraulic Model*

representation of Flood Zone 3b. It should be noted that the impact of defences on flood extents in Oxford is very small due to limited flood defence infrastructure.

Approach for Flood Depths

To assess fluvial flood risk in more detail at some sites depth data for the design 1.0% AEP plus central climate change event was required. For sites in Flood Zone 3b, an assessment of the 1.0% AEP plus higher central climate change event was also required. Note, the FMfP only provides extent data for the 1.0% AEP plus central climate change event. For sites impacted by the River Thames, depth data from the Thames model could be used. The model aligns with the FMfP and also contains flood data for both climate change events.

For sites impacted by the Littlemore Brook, Northfield Brook or Boundary Brook, a different approach was necessary as the existing modelling data is not used by the FMfP. In general the approach adopted has been to use the Risk of Flooding from Rivers and Seas (RoFRS) dataset. Whilst depth data is not available for the FMfP climate change extents, it is available for the RoFRS climate change extents. The two datasets are very similar, however when assessing climate change the FMfP considers the 2080s epoch (2070-2125), whereas the RoFRS is based on the 2050's epoch (2041-2069). The RoFRS extents were reviewed and where they were very similar to the FMfP extents, the RoFRS depth data was considered suitable for the purposes of the SFRA.

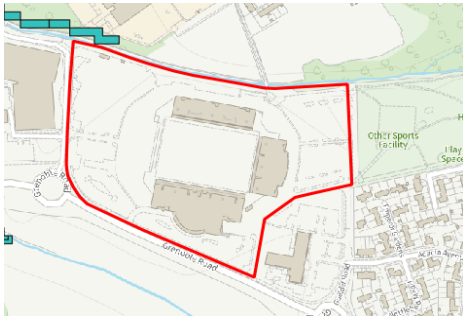
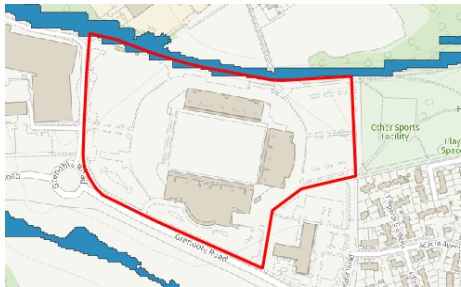
In cases where differences were significant LIDAR topographical data was used to estimate the flood level associated with the FMfP climate change extents. This flood level was then extrapolated across the relevant site to determine probable flood depths.

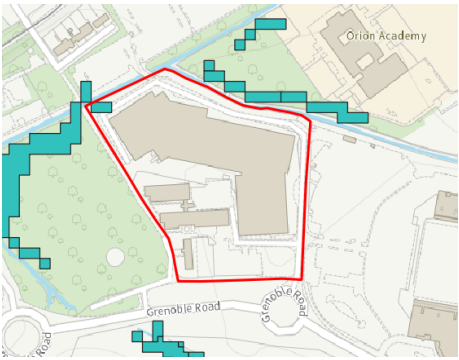
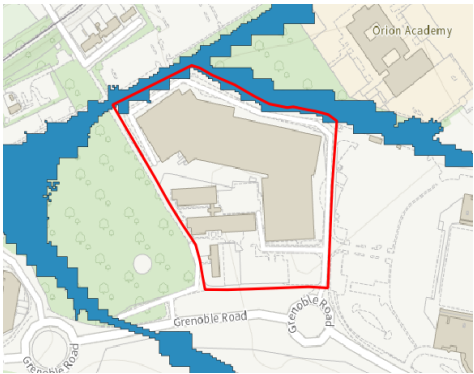
Site by Site Review

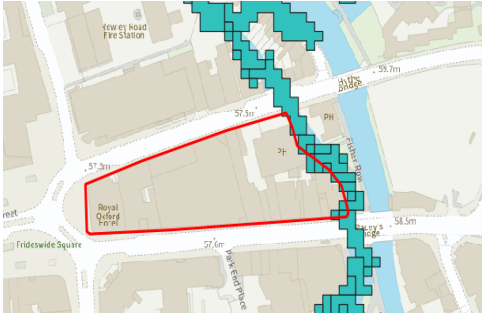
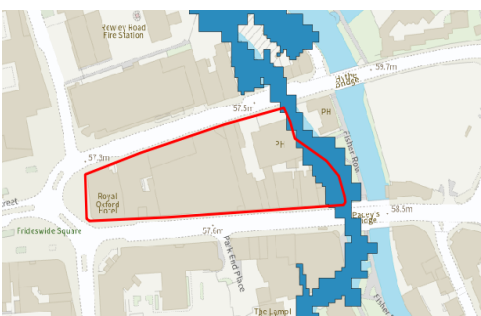
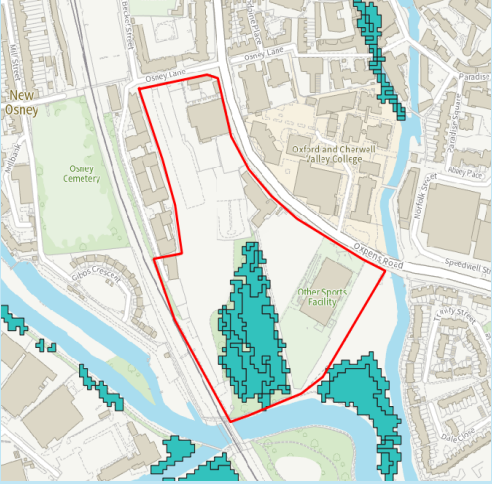
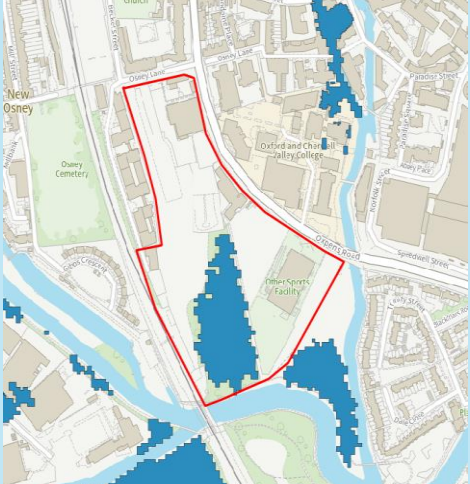
The tables overpage provide a summary of the review process at each site. Table 1 considers the 3.3% AEP extent whilst Table 2 considers the 1.0% AEP + Climate Change extent.

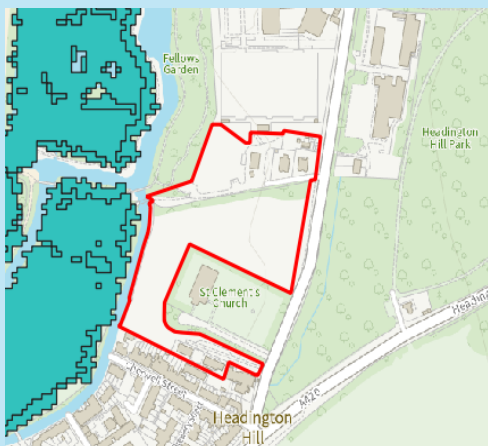
Table 1- Review of 3.3% AEP Extents at each Level 2 Site

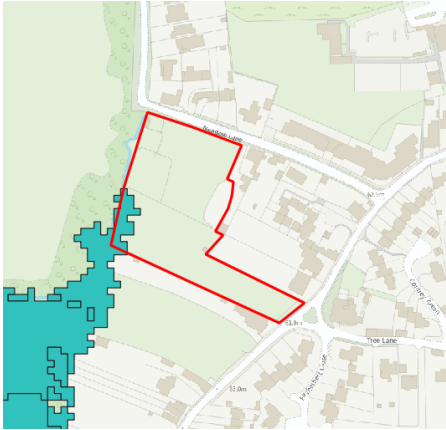
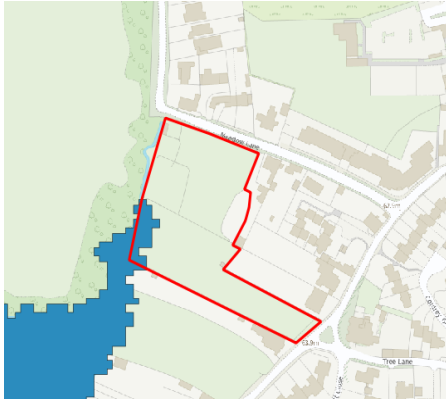
Site Ref	Site Name	Hydraulic Modelling Data	Flood Map for Planning	Decision
008a	Bertie Place Recreation Ground			Close to identical flood extents at the site. Opt for FMfP as flooding to the west of site not fully captured in modelling data.
11	Canalside Land, Jericho			Extents close to identical and similar proportion of site flooded. Opt for hydraulic modelling data as undefended.

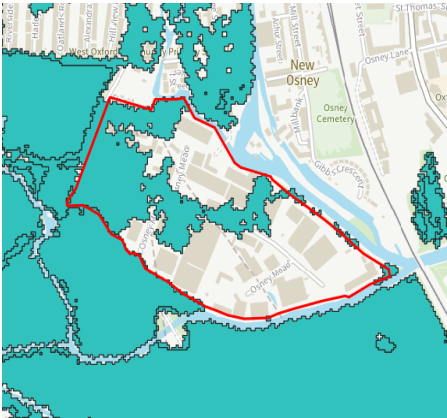
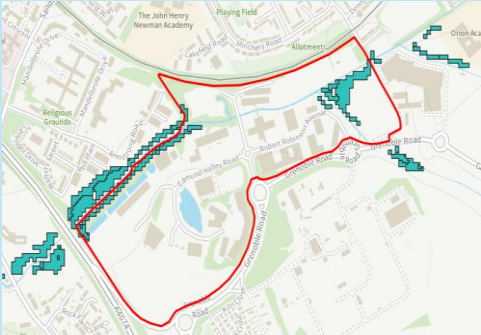
16	Cowley Marsh Depot	Not available.		FMfP extents are selected, 3.3% AEP extents are not available from the Boundary Brook hydraulic model.
028a	Kassam Stadium			FMfP extents are selected, these pick up flooding within and close to the channel in more detail and include extents for the upper reaches which are not included in the older detailed models.
028b	Overflow carpark at Kassam Stadium site			FMfP extents are selected, these pick up flooding within and close to the channel in more detail and include extents for the upper reaches which are not included in the older detailed models.

028c	Ozone Leisure Complex & Minchery Farmhouse			FMfP extents are selected, these pick up flooding within and close to the channel in more detail and include extents for the upper reaches which are not included in the older detailed models.
31	Manor Place			FMfP extents are selected. Whilst these are defended, they show a slightly greater extent in areas around the site. This guarantees a precautionary approach to flood risk.

70	Island Site			FMfP extents are selected. Whilst these are defended, they show a slightly greater extent at the site and in areas around the site. This guarantees a precautionary approach to flood risk.
76	Oxpens			Extents close to identical and similar proportion of site flooded. Opt for hydraulic modelling data as undefended.

81	Worcester Street Car Park and Public House			Extents close to identical and similar proportion of site flooded. Opt for hydraulic modelling data as undefended.
117	Land surrounding St Clement's Church			Extents close to identical and similar proportion of site flooded. Opt for hydraulic modelling data as undefended.

389	Land at Meadow Lane			Extents close to identical and similar proportion of site flooded. Opt for hydraulic modelling data as undefended.
516	474 Cowley Road	Not available.		FMfP extents are selected, 3.3% AEP extents are not available from the Boundary Brook hydraulic model.

586	Osney Mead			FMfP extents are selected. Whilst these are defended, they show a slightly greater extent at the site and in areas around the site. This guarantees a precautionary approach to flood risk.
588	Oxford Science Park			FMfP extents are selected, these pick up flooding within and close to the channel in more detail and include extents for the upper reaches which are not included in the older detailed models.

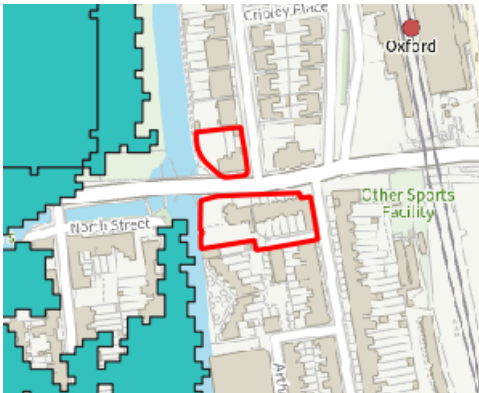
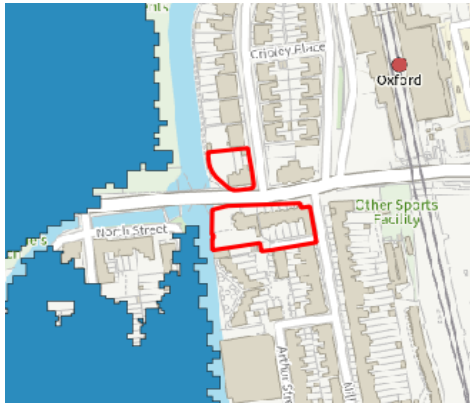
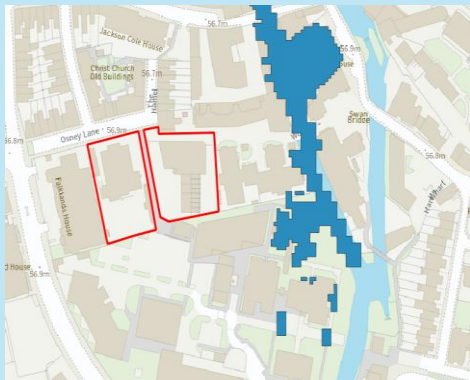
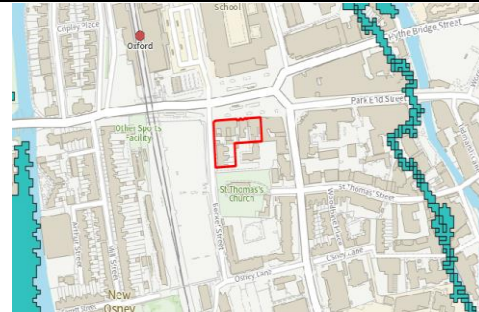
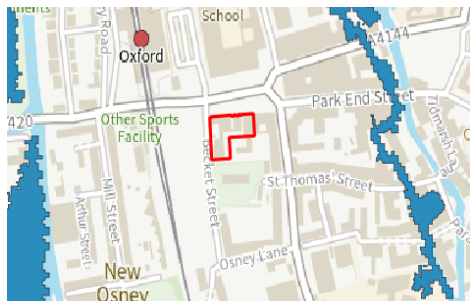
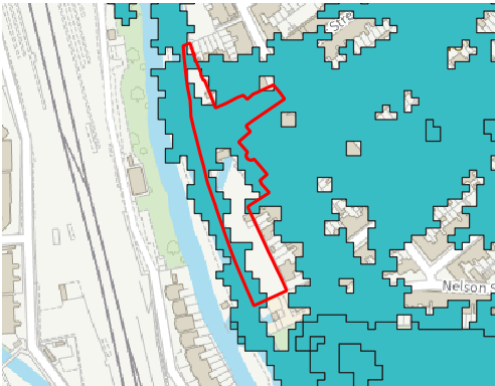
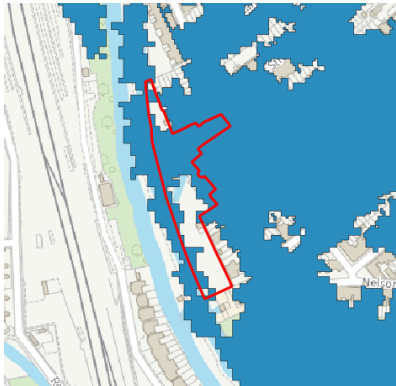
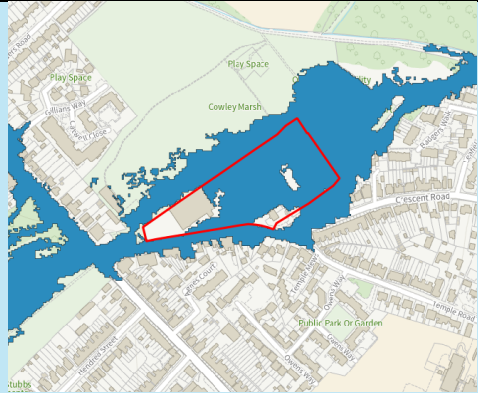
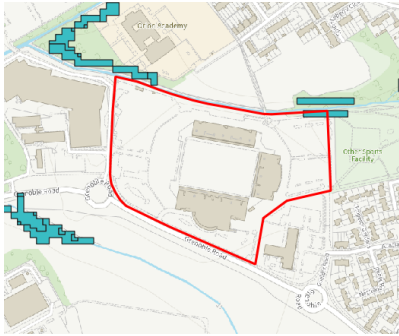
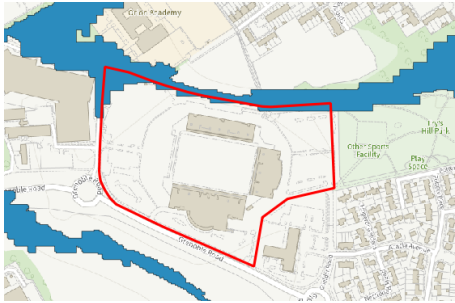
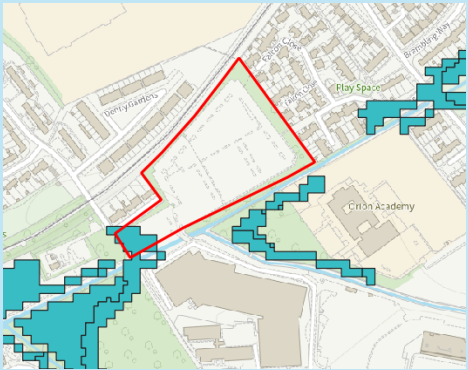
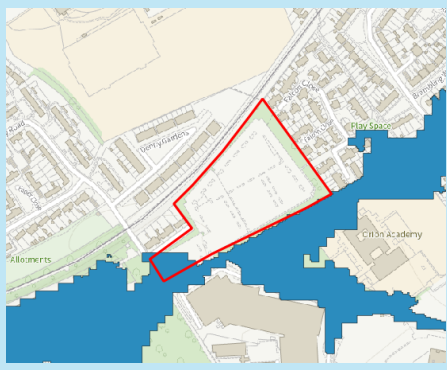
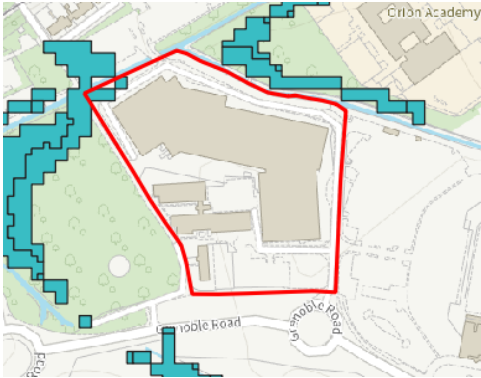
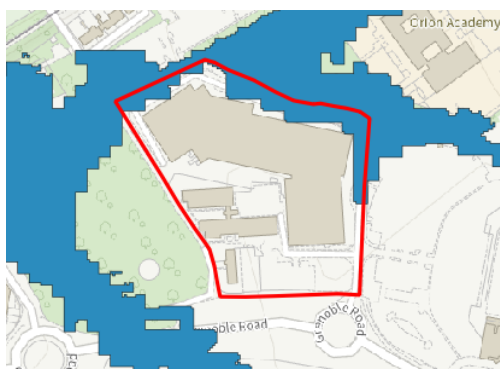
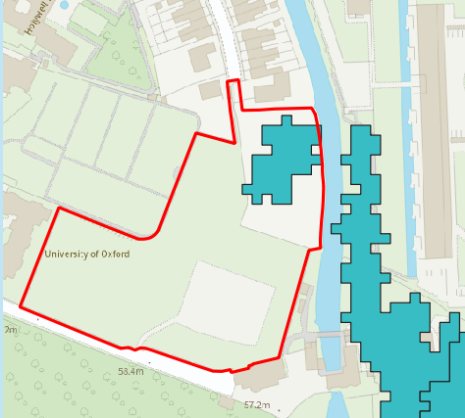
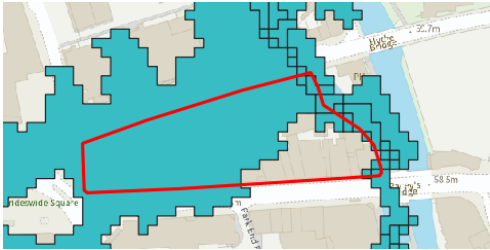
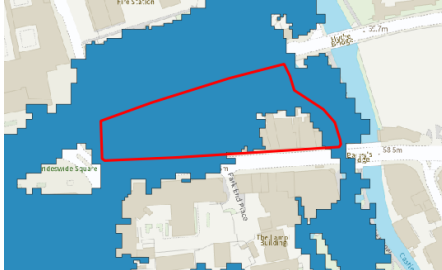
613, 614, 615	Botley Road sites around Cripsey Road including River Hotel and Westgate Hotel			FMFP extents are selected. Whilst these are defended, they show a slightly greater extent in areas around the site. This guarantees a precautionary approach to flood risk.
616	St Thomas and Osney Warehouse			Extents close to identical and similar proportion of site flooded. Opt for hydraulic modelling data as undefended.
624	Land south of Frideswide Square			Use national mapping. Defended but shows slightly worst-case extent so guarantees precautionary approach, even if site is outside of flood extents.

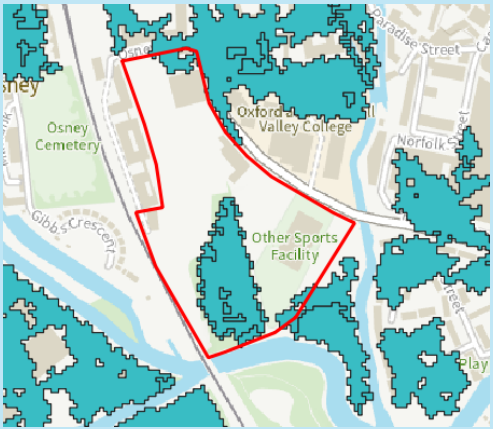
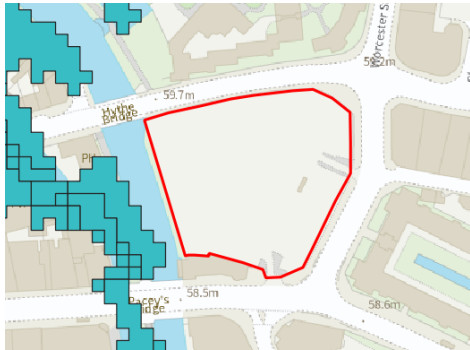
Table 2- Review of 1.0% AEP plus Climate Change Extents at each Level 2 Site

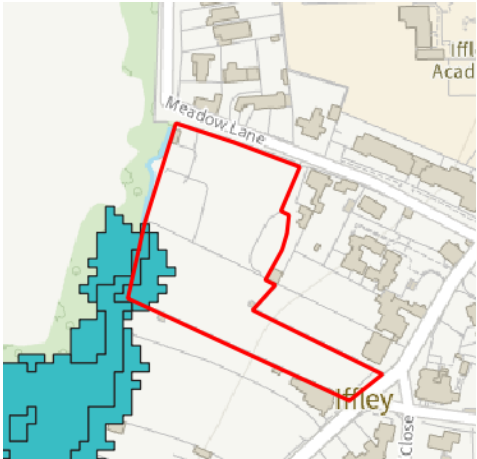
Site Ref	Site Name	Hydraulic Modelling Data	Flood Map for Planning	Decision
008a	Bertie Place Recreation Ground			Extents are close to identical at the site. FMfP used to inform extent mapping as it captures flooding to the west of the site. However, given similarity confident to use SFRA depth data and higher central extent to inform more detailed analysis of flood risk.
11	Canalside Land, Jericho			Extents are close to identical, confident to use SFRA depth data and higher central extent to inform more detailed analysis of flood risk.

16	Cowley Marsh Depot	Not available.		Climate Change extents for latest allowances not available in Boundary Brook model. FMfP extents used with extrapolation using LIDAR data applied to estimate flood depths.
028a	Kassam Stadium			FMfP extents show greater extent, capturing flooding within and close to the channel in more detail. To assess flood depth RoFRS data has been used.

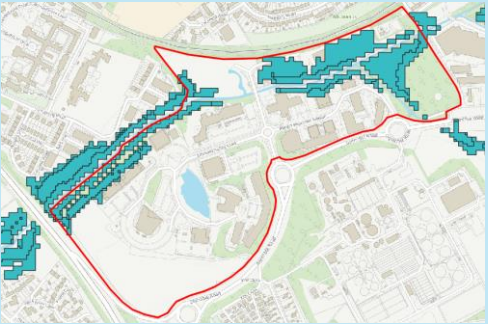
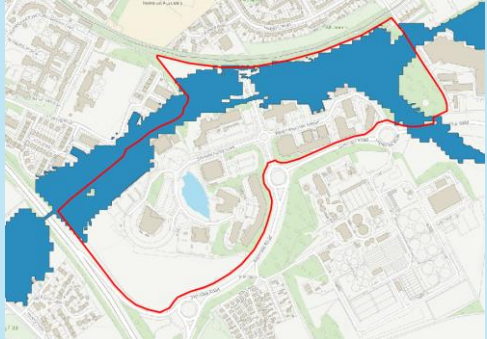
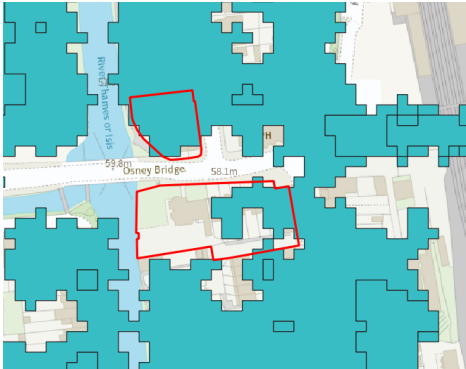
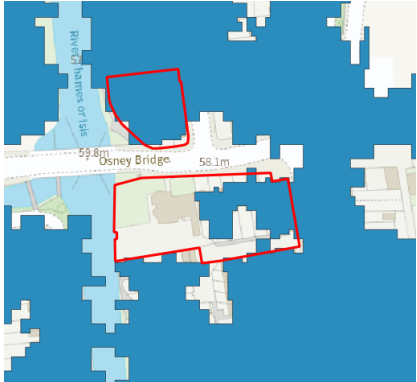
028b	Overflow carpark at Kassam Stadium site			FMfP extents show greater extent, capturing flooding within and close to the channel in more detail. To assess flood depth RoFRS data has been used.
028c	Ozone Leisure Complex & Minchery Farmhouse			FMfP extents show greater extent, capturing flooding within and close to the channel in more detail. To assess flood depth RoFRS data has been used.

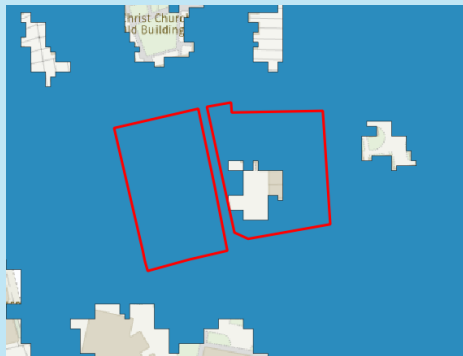
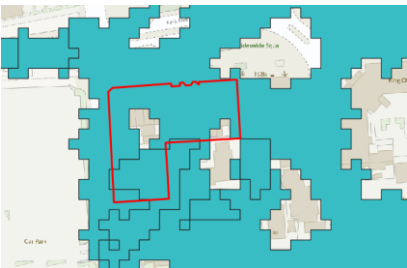
31	Manor Place			FMfP extent is slightly greater so used to inform extent mapping. Hydraulic modelling extent remains similar enough to use in detailed assessment of flood depths.
70	Island Site			FMfP extent is slightly greater so used to inform extent mapping. Hydraulic modelling extent remains similar enough to use in detailed assessment of flood depths.

76	Oxpens			Extents are close to identical, confident to use SFRA depth data and higher central extent to inform more detailed analysis of flood risk.
81	Worcester Street Car Park and Public House			Extents are close to identical, confident to use SFRA depth data and higher central extent to inform more detailed analysis of flood risk.

117	Land surrounding St Clement's Church			Hydraulic model extent is slightly greater so used to inform extent mapping. Both extents remain similar enough to use in detailed assessment of flood depths.
389	Land at Meadow Lane			FMfP extents are greater due to representation of upper reaches of river channel. These are used for extent mapping. For detailed assessment of flood depths, whilst the extents differ, the Thames model is still considered representative of the primary flood risk to the site. It also contains data for both climate change scenarios (i.e. central and higher central)

516	474 Cowley Road	Not available.		Climate Change extents for latest allowances not available in Boundary Brook model. FMfP extents used with extrapolation using LIDAR data applied to estimate flood depths.
586	Osney Mead			Extents are close to identical, confident to use SFRA depth data and higher central extent to inform more detailed analysis of flood risk.

588	Oxford Science Park			Extents differ likely due to representation of river channel. Recommend that section 4 assess 1D flood levels in the SFRA model and the national extents against available LIDAR. This should give idea of likely depth at the site.
613, 614, 615	Botley Road sites around Cripsey Road including River Hotel and Westgate Hotel Sites			Extents are close to identical, confident to use SFRA depth data and higher central extent to inform more detailed analysis of flood risk.

616	St Thomas and Osney Warehouse			FMfP extent is slightly greater so used to inform extent mapping. Hydraulic modelling extent remains similar enough to use in detailed assessment of flood depths.
624	Land south of Frideswide Square			FMfP extent is slightly greater so used to inform extent mapping. Hydraulic modelling extent remains similar enough to use in detailed assessment of flood depths.