Elmbridge Borough Council Level 2 Strategic Flood Risk Assessment

Elmbridge Borough Council

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Quality information

Prepared by	Checked by	Verified by	Approved by
Lauren Lewis Apprentice	Joanne Somerton Principal Flood Risk Consultant	Sarah Littlewood Principal Consultant	Sarah Littlewood Project Manager

Revision History

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Prepared for:

Elmbridge Borough Council

Prepared by:

AECOM Infrastructure and Environment UK Limited
Midpoint, Alencon Link
Basingstoke
Hampshire RG21 7PP
United Kingdom

T: +44(0)1256 310200
aecom.com

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1. Introduction

1.1 Project Background

1.1.1 "Flood risk" is a combination of the probability and the potential consequences of flooding. Areas at risk of flooding are those at risk of flooding from any source, now or in the future. Sources include rivers and the sea, direct rainfall on the ground surface, rising groundwater, overwhelmed sewers and drainage systems, reservoirs, canals and lakes and other artificial sources. Flood risk also accounts for the interactions between these different sources.

1.1.2 The National Planning Policy Framework[1] (NPPF) and associated Planning Practice Guidance (PPG) for Flood Risk and Coastal Change[2] set out the active role Local Planning Authorities (LPAs) should take to ensure that flood risk is understood and managed effectively and sustainably throughout all stages of the planning process. The NPPF outlines that Local Plans should be supported by a Strategic Flood Risk Assessment (SFRA) and LPAs should use the findings to inform strategic land use planning.

1.1.3 The overall approach of the NPPF to flood risk is broadly summarised in Paragraph 165 *(formerly paragraph 159, NPPF 2021)*:

"Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere".

1.1.4 NPPF Paragraph 173 *(formerly paragraph 167, NPPF 2021)* states:

"When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location,

b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment,

c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate,

d) any residual risk can be safely managed, and

e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan".

1.1.5 Elmbridge Borough Council (BC) are preparing a New Local Plan which contains the overall vision and framework for future development in the area, addressing needs and opportunities in relation to housing, the economy, community facilities and infrastructure, as well as providing a basis for conserving and enhancing the natural and historic environment, mitigating and adapting to climate change, and achieving well designed places. The emerging New Local Plan will set out planning policies and proposals for how communities and places in the Borough will develop over a period of up to 15 years.

1.1.6 AECOM has been commissioned by Elmbridge BC to prepare a **Level 2 SFRA** to inform the ongoing preparation of the emerging New Local Plan. This report and associated appendices form the Level 2 SFRA for Elmbridge BC.

[1] Department for Levelling Up, Housing and Communities. Updated December 2023. *National Planning Policy Framework*. https://www.gov.uk/government/publications/national-planning-policy-framework--2
[2] Department for Levelling Up, Housing and Communities. Ministry of Housing, Communities and Local Government. Updated August 2022. *Planning Practice Guidance: Flood Risk and Coastal Change.* http://planningguidance.planningportal.gov.uk/blog/guidancygfyufe/flood-risk-and-coastal-change/

1.2 Level 1 SFRA

1.2.1 The purpose of a **Level 1 SFRA** is to collate and analyse the most up to date readily available flood risk information for all sources of flooding and provide an overview of flood risk issues across the Borough. The **Level 1 SFRA** considers the risk of flooding now and in the future as a result of climate change.

1.2.2 In order to assess the risk of flooding from rivers (and the sea), the NPPF uses Flood Zones, which describe the risk of flooding from low to high probability. Table 1 in the PPG (Flood Risk and Coastal Change) defines the Flood Zones, and this is reproduced in Table 1-1.

Table 1-1 Flood Zones Definitions (PPG Flood Risk and Coastal Change Table 1)

Flood Zone	Definition
Flood Zone 1	Land having a less than 0.1% annual probability of river or sea flooding.
Flood Zone 2	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding.
Flood Zone 3a	Land having a 1% or greater annual probability of river flooding; or land having a 0.5% ir greater annual probability of sea flooding.
Flood Zone 3b	Land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: • Land having a 3.3% AEP of greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively, or • Land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). LPAs should identify in their SFRAs areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. It is not separately distinguished from Flood Zone 3a on the Flood Map for Planning (Rivers and Sea).

1.2.3 The Level 1 SFRA Report provides guidance on:

- The application of the Sequential Test when allocating future development sites to inform the Local Plan, as well as by developers promoting development on windfall sites. The Sequential Test is the decision-making process whereby future development is steered towards areas of lowest flood risk.
- Managing and mitigating flood risk, the application of sustainable drainage systems (SuDS), and the preparation of site-specific Flood Risk Assessments (FRAs).
- Potential flood risk management objectives and policy considerations which may be developed and adopted by the LPA as formal policies within their emerging Local Plan.

1.2.4 A Level 1 SFRA[3] was prepared for Elmbridge BC in 2019 and is currently being updated.

1.3 Level 2 SFRA

1.3.1 The Environment Agency guidance 'How to prepare a strategic flood risk assessment'[4] states that where a **Level 1 SFRA** shows that land outside areas at risk of flooding now or in the future cannot appropriately accommodate all the necessary development, it may be necessary to increase the scope of the assessment to a **Level 2 SFRA** to provide the information necessary for application of the Exception Test, where appropriate. A **Level 2 SFRA** should consider the detailed nature of the flood characteristics within a flood zone including, where possible:

- flood probability,
- flood depth,
- flood velocity,

[3] AECOM, February 2019, Elmbridge BC Level 1 SFRA. https://www.elmbridge.gov.uk/planning/planning-policy-and-guidance/strategic-flood-risk-assessment-sfra
[4] Environment Agency, March 2022, *How to prepare a strategic flood risk assessment* https://www.gov.uk/guidance/local-planning-authorities-strategic-flood-risk-assessment

- rate of onset of flooding; and
- duration of flood.

1.3.2 This more detailed information about the nature of flood risk in the Borough enables users to:

- apply the Sequential Test by identifying the severity and variation in risk *within* medium and high flood risk areas,
- establish whether proposed site allocations or windfall sites, on which the emerging Local Plan will rely, are capable of being made safe throughout their lifetime without increasing flood risk elsewhere, and
- begin to consider the application of the Exception Test, where relevant.

Exception Test

1.3.3 The purpose of the Exception Test is to ensure that, where it may be necessary to locate development in areas at risk of flooding, new development in Flood Zone 2 and Flood Zone 3 is only permitted if it can be demonstrated that:

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

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

1.3.4 Both elements of the Exception Test should be satisfied for development to be allocated or permitted.

1.3.5 Table 2 in the PPG Flood Risk and Coastal Change (reproduced in Table 1-2) identifies when the Exception Test is required. It is noted that some types of development are not permitted, regardless of the application of the Exception Test.

1.3.6 Full details of the vulnerability classifications for different types of development can be found in Table 2[5] of the PPG Flood Risk and Coastal Change.

Table 1-2 Flood risk vulnerability and Flood Zone 'incompatibility' (PPG Table 2)

Vulnerability Classification		Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Flood Zone	1	✓	✓	✓	✓	✓
	2	✓	Exception Test Required	✓	✓	✓
	3a	Exception Test Required [a]	×	Exception Test Required	✓	✓
	3b	Exception Test Required [b]	×	×	×	✓ [b]

✓ - Exception Test is not required × - Development should not be permitted

"a" In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.
"b" In Flood Zone 3b (functional floodplain) essential infrastructure that has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

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

[5] *Planning Practice Guidance (PPG) flood risk and coastal change. Table 2: Flood risk vulnerability and flood zone 'incompatibility'* https://www.gov.uk/guidance/flood-risk-and-coastal-change#table2

1.4 Report Structure

Datasets and Consultation

1.4.1 To inform the development of the Level 2 SFRA, flood risk datasets have been provided by the Environment Agency, Surrey County Council (in their role as the Lead Local Flood Authority (LLFA)), and Elmbridge BC. Section 2 of this Report provides information on the datasets used.

Mapping

1.4.2 Appendix A of this Report provides Borough wide mapping of flood risk datasets to enable comparison of the flood risk across the study area.

Site Screening to support Sequential Test

1.4.3 A number of factors are influencing the spatial strategy in the Elmbridge Borough and a large pool of potential allocation sites has been under consideration during the preparation of the emerging New Local Plan.

1.4.4 A high level sieving exercise has been undertaken to identify:

- Proportion of the site in each Flood Zone as shown on the Flood Map for Planning and Reduction in Risk of Flooding from Rivers and Sea due to Defences.
- Flood Warning Area, Flood Priority Area and Recorded Flood Outline in which the site is located.
- The sites proximity to the nearest Main River and Ordinary Watercourse.
- Sewer flood records based on the site's postcode area.
- River Management, Operational and Body catchment in which the site is located.
- Groundwater Management, Operational and Body catchment in which the site is located.
- The sites Bedrock and Superficial Geology and Susceptibility to Groundwater Flooding status.
- Proportion of the site at high, medium or low risk of surface water flooding, based on the Risk of Flooding from Surface Water map. The low risk of flooding from surface water layer can be used as an indication of future flood risk.
- Proportion of the site at risk of reservoir inundation.

1.4.5 This information was provided to Elmbridge BC in an MS Excel Workbook to enable the application of the sequential approach to their site selection.

1.4.6 Elmbridge BC have undertaken the Sequential Test for 199 sites and have identified 37 sites for consideration within this Level 2 SFRA.

Site Assessment Proformas

1.4.7 AECOM have undertaken an assessment of flood risk for each of the 37 sites that were identified to be within Flood Zone 2 and/or Flood Zone 3. These are included in Appendix B. The purpose of the Level 2 SFRA is to assess the flood risk posed to the sites and inform the Exception Test, as described in Section 3.

1.5 Future Updates

1.5.1 SFRAs are intended to be living documents which are kept up to date as information on flood risk management changes.

1.5.2 The Environment Agency SFRA guidance[4] states that in order to remain up to date, it may be necessary to update a SFRA to incorporate any changes to:

- the predicted impacts of climate change on flood risk,
- detailed flood modelling - such as from the Environment Agency or lead local flood authority,
- the local plan, spatial development strategy or relevant local development documents,
- local flood management schemes,
- flood risk management plans,
- local flood risk management strategies, and
- national planning policy or guidance.

1.5.3 In addition, the SFRA may also need to be reviewed after any significant flood event.

1.5.4 It is noted that future changes to modelling, planning guidance, or climate change impacts may alter the level of risk posed to a specific site. The most up-to-date flood risk data must be used throughout the planning process to inform ongoing site planning and development design.

2. Datasets

2.1 Overview

2.1.1 The following datasets and sources of information have been obtained to inform the Level 2 SFRA.

2.2 River Modelling Outputs

2.2.1 As part of the Environment Agency's national programme of coastal and fluvial modelling studies, hydraulic models have been developed for the Main Rivers in the Borough including the River Thames, River Rythe, Dead River, River Mole and River Wey. These are described in turn in the sections, along with a summary of the outputs that have been used to inform the Level 2 SFRA site assessments.

Climate Change Allowances

2.2.2 The Environment Agency's online guidance 'Flood risk assessments: climate change allowances'[6] sets out the climate change allowances for peak river flows that should be considered. The allowances vary by management catchment which are sub-catchments of river basin districts. The management catchments of relevance to the Elmbridge study area are 'Maidenhead and Sunbury', 'Mole, and 'Wey and tributaries', as shown in Table 2-1.

2.2.3 A range of allowances are provided based on percentiles[7]. The guidance states that for SFRAs the *central* and *higher central* allowances should be used. When preparing site specific FRAs, the allowance that should be considered is based on the Flood Zone and the vulnerability classification of the development. For example, where More Vulnerable or Less Vulnerable development is proposed in Flood Zones 2 or 3a, the *central* allowance should be applied.

2.2.4 The allowances that have been used within this Level 2 SFRA are detailed in the following sections. These take into account the allowance specified in the guidance (as noted in Table 2-1) as well as considering what modelled flood extents are available within the hydraulic models received from the Environment Agency.

Table 2-1 Peak river flow allowances for management catchments in Elmbridge (based on a 1981 to 2000 baseline)

Management Catchment	Allowance category	Total potential change anticipated for '2020s' (2015 to 2039)	Total potential change anticipated for '2050s' (2040 to 2069)	Total potential change anticipated for '2080s' (2070 to 2125)
Maidenhead and Sunbury	Central (50th)	14%	17%	35%
	Higher Central (70th)	19%	25%	47%
	Upper End (95th)	32%	45%	81%
Mole	Central (50th)	11%	6%	12%
	Higher Central (70th)	16%	12%	26%
	Upper End (95th)	27%	26%	40%
Wey and tributaries	Central (50th)	10%	9%	24%
	Higher Central (70th)	15%	17%	36%
	Upper End (95th)	28%	36%	71%

[6] Environment Agency, Published February 2016, Updated May 2022. Flood risk assessments: climate change allowances. https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances

[7] A percentile describes the proportion of possible scenarios that fall below an allowance level. The 50th percentile is the point at which half of the possible scenarios for peak flow fall below it, and half fall above it. The central allowance is based on the 50th percentile; higher central allowance is based on the 70th percentile; upper end allowance is based on the 95th percentile.

River Thames

2.2.5 The Environment Agency's latest model of the Lower Thames was *primarily* developed by JBA Consulting between 2013 and 2020. The model development is recorded in the Lower Thames and Jubilee River Modelling Report (2020), also known as the Thames Hurley to Teddington 2019 model and report[8].

2.2.6 WSP Binnies have been undertaking flood modelling of the Lower Thames since 2014 as part of their involvement in the River Thames Scheme (RTS). As part of this work, modifications and improvements have been made to the Lower Thames model. This includes the latest set of Lower Thames model runs in 2021-2022. The study area for this set of results is the River Thames and its floodplain from Datchet to Teddington. These model outputs are based on the river as it is now, without the RTS included. The modelling undertaken is documented in the Lower Thames Flood Modelling Report[9]. Modelling of the RTS design development is reported separately.

2.2.7 It is noted that the intention is that the WSP Binnies report supplements the JBA Modelling Report, rather than repeating the content contained within it and therefore both are referenced in this Level 2 SFRA. The two modelling reports (by JBA Consulting and WSP Binnies) should be read in conjunction to gain a full understanding of the latest Lower Thames flood model.

2.2.8 Modelling has been undertaken for events where the River Thames represents the main source of flooding (**Thames dominated**) and, conversely, when the tributaries are the key source of flooding (**Tributary dominated**).

2.2.9 The following scenarios were undertaken for both the Thames dominated and Tributary dominated models:

- **Defended scenarios** for the following Annual Exceedance Probability (AEP) events: 50%, 20%, 10%, 5%, 3.33%, 2%, 1.33%, 1%, 0.5% and 0.1%. The 3.3% AEP flood extents have been used as the starting point from which to delineate Flood Zone 3b Functional Floodplain for Elmbridge BC, as mapped in **Appendix A Figure 1** and the site assessments in **Appendix B**.
- **Climate change scenarios**: Increases in peak flows of 10%, 20%, 25%, 35% and 81% have been applied to the defended 1% AEP modelled event. Modelling results for the full suite of new allowances, as set out in Table 2-1, are not currently available. It is not currently within the scope of this SFRA to re-run the Lower Thames model to account for the new climate change allowances. Datasets are available for the central (35%), and upper end (81%) allowances for the Maidenhead and Sunbury management catchment. There is no appropriate dataset available for the higher central allowance (47%) therefore the upper end has been used as a conservative approach.
- **Undefended scenarios** for the 1% and 0.1% AEP events (to inform the development of Flood Zones 3 and 2 respectively on the Flood Map for Planning (Rivers and Sea)[10]).

2.2.10 The following outputs were produced from the hydraulic modelling: maximum flood extents, maximum depth grids, maximum velocity grids, maximum hazard rating grids and maximum water level grids.

2.2.11 Flood 'hazard' categorises the danger to people for different combinations of flood water depth and velocity. The derivation of these categories is based on the methodology set out by Defra in their Flood Risk Assessment Guidance for New Development FD2320/TR2[11] using the following equation:

*Flood Hazard Rating = ((v+0.5)*D) + DF Where v = velocity (m/s), D = depth (m), DF = debris factor*

2.2.12 The resulting values are grouped into hazard ratings as shown in Table 2-2.

[8] JBA Consulting, July 2020, Lower Thames, Jubilee River and River Ash Modelling Study. *(Referred to as the Thames: Hurley to Teddington model).*
[9] WSP Binnies, November 2023, Lower Thames Flood Modelling Report. *(Referred to as the Thames: Datchet to Teddington model).*
[10] EA Flood Map for Planning https://flood-map-for-planning.service.gov.uk/
[11] Defra and Environment Agency (2005) FD2320/TR2 Flood Risk Assessment Guidance for New Development.

Table 2-2 Flood Hazard Categories

Flood Hazard		Description
Low	HR < 0.75	Caution – Flood zone with shallow flowing water or deep standing water
Moderate	0.75 ≥ HR ≤ 1.25	Dangerous for some (i.e., children) – Danger: flood zone with deep or fast flowing water
Significant	1.25 > HR ≤ 2.0	Dangerous for most people – Danger: flood zone with deep fast flowing water
Extreme	HR > 2.0	Dangerous for all – Extreme danger: flood zone with deep fast flowing water

2.2.13 The following outputs from the River Thames modelling have been used in this Level 2 SFRA.

2.2.14 **Appendix A Figure 2** shows the Lower Thames: *Thames dominated* maximum flood extents for the defended 1% AEP event including climate change scenarios. **Appendix A Figure 3** shows the Lower Thames: *Tributary dominated* maximum flood extents for the defended 1% AEP event including climate change scenarios. These are also included within the site assessments in **Appendix B**.

2.2.15 **Appendix A Figure 4** shows the maximum hazard rating for the Lower Thames: *Thames dominated* design event (1% AEP plus a 35% central allowance for climate change). **Appendix A Figure 5** shows the maximum hazard rating for the Lower Thames: *Tributary dominated* design event (1% AEP plus a 35% allowance for climate change). These are also included within the site assessments in **Appendix B.**

2.2.16 **Appendix A Figure 6** shows the maximum hazard rating for the Lower Thames: *Thames dominated* upper end climate change allowance scenario (1% AEP plus an 81% allowance for climate change). **Appendix A Figure 7** shows the maximum hazard rating for the Lower Thames: *Tributary dominated* upper end climate change allowance event (1% AEP plus an 81% allowance for climate change). The upper end has been displayed due to the absence of an appropriate dataset for the higher central climate change allowance (47%).

2.2.17 Section 11.8 of the WSP Binnies Lower Thames Modelling Report provides a discussion of the results from the Lower Thames modelling with regard to the risk of flooding on the Lower River Mole. The Lower Mole defences are thought to provide a high standard of protection, so the model results have been questioned when flooding is shown. Improvements have been made to the model which partly addresses this, but some queries remain. Section 11.8 of the Lower Thames Modelling Report discusses this aspect further and concludes that, on detailed inspection, the model results and the high confidence in the standard of protection afforded by the Lower Mole defences, the approach used to set the model inflows is leading to an overly conservative approach and an overestimation of flooding from the Mole.

2.2.18 As noted on page 88 of the Report, a meeting was held between technical experts from the Environment Agency, WSP Binnies and JBA. The following approach was agreed:

- For *River Thames dominated floods*, the predicted flood extents for the River Mole from the 2021 model will not be used **upstream of the A309 Hampton Court Way**. Results downstream of this road are primarily due to flooding from the River Thames, whereas upstream flooding is primarily from the River Mole (and River Ember). The approach used to set the model inflows is leading to an overly conservative approach and an overestimation of flooding from the Mole. (This approach is consistent with what was agreed for the JBA 2019 model).
- For *River Thames tributary dominated floods*, the model predictions are reasonable and can be used unchanged. These represent the best estimate of flood risk on the Lower Mole **between Island Barn and Hampton Court Way**. The rest of the Lower Mole is best represented by the Lower Mole model.

2.2.19 As a result, both the Lower Thames (*Thames dominated*) and Lower Thames (*Tributary dominated*) results have been modelled within this SFRA.

- Lower Thames (*Thames Dominated*) – relevant for sites along the Thames frontage and on the Mole downstream of the A309 Hampton Court Way.
- Lower Thames (*Tributary Dominated*) – relevant for sites along the Mole between Island Barn and Hampton Court Way.
- Lower Mole (described below) – for sites along the River Mole upstream of Island Barn.

2.2.20 The Environment Agency have provided a shapefile highlighting which model or models should be used in the Lower Mole/Thames area. It is indicated within the site assessments in **Appendix B** which model(s) have been used to assess each site.

River Wey

2.2.21 Modelling of the Lower Wey was supplied by the Environment Agency from the River Wey Flood Alleviation Schemes: Lower Wey (Byfleet/Weybridge) Baseline Modelling[12]. The Lower Wey model extends from Guildford to the confluence with the Thames at Weybridge. The model is a 1D-2D linked model.

2.2.22 The following scenarios were undertaken:

- **Defended scenarios** for the following AEP events: 20%, 5%. 3.33%, 2%, 1.33%, 1%, 0.5% and 0.1%. The 3.3% AEP flood extent has been used as the starting point from which to delineate Flood Zone 3b Functional Floodplain for Elmbridge BC, as mapped in **Appendix A Figure 1** and the site assessments **in Appendix B**.
- **Climate change scenarios**: 10%, 15%, 25%, 35% and 70% increases in peak flows applied to the defended 1% AEP modelled event based on Environment Agency (Adapting to Climate Change: Advice for Flood and Coastal Erosion Risk Management Authorities)[13] guidance. Modelling results for the full suite of new allowances, as set out in Table 2-1, are not currently available. It is not currently within the scope of this SFRA to re-run the Middle Mole model to account for the new climate change allowances. Available datasets for the central (24%), higher central (36%) and upper end (71%) allowances for the Wey and tributaries management catchment are suitable reference points.
- **Undefended scenarios** for the 1% and 0.1% AEP events (to inform the development of Flood Zones 3 and 2 respectively on the Flood Map for Planning (Rivers and Sea)[10]).

2.2.23 The following outputs were produced from the hydraulic modelling: maximum flood extent, maximum depth grids, maximum velocity grids, maximum hazard rating grids and maximum water level grids.

2.2.24 **Appendix A Figure 8** shows the Lower Wey maximum flood extents for the defended 1% AEP event including climate change scenarios. This is also included within the site assessments in **Appendix B**.

2.2.25 **Appendix A Figure 9** shows the maximum hazard rating for the design event (1% AEP plus a 25% central allowance for climate change). This is also included within the site assessments in **Appendix B**.

2.2.26 **Appendix A Figure 10** shows the maximum hazard rating for the higher central climate change allowance (1% AEP plus a 35% allowance for climate change).

River Mole

2.2.27 Modelling for the River Mole within Elmbridge BC is covered by two models, the Middle Mole and the Lower Mole.

[12] Capita AECOM, September 2019, River Wey Flood Alleviation Schemes: Lower Wey (Byfleet/Weybridge) Baseline Modelling Report
[13] Environment Agency, April 2016, Adapting to climate change: guidance for risk management authorities
https://www.gov.uk/government/publications/adapting-to-climate-change-for-risk-management-authorities

Middle Mole

2.2.28 Modelling of the Middle Mole was supplied by the Environment Agency from the Leatherhead and Middle Mole Flood Alleviation Scheme[14]. The model covers the Middle Mole and twelve of its tributaries. The model is a 1D-2D linked model.

2.2.29 The following scenarios were undertaken for:

- **Defended scenarios** for the following AEP events: 50%, 20%, 5%, 3.33%, 2%, 1.33%, 1% and 0.1%. The 3.3% AEP flood extent has been used as the starting point from which to delineate Flood Zone 3b Functional Floodplain for Elmbridge BC, as mapped in **Appendix A Figure 1** and the site assessments in **Appendix B**.
- **Climate change scenarios**: 25%, 35% and 70% increases in peak flows applied to the defended 1% AEP modelled event. Modelling results for the full suite of new allowances, as set out in Table 2-1, are not currently available. It is not currently within the scope of this SFRA to re-run the Middle Mole model to account for the new climate change allowances. The modelled 25% scenario has been used as a conservative outline for both the central allowance (12%) and higher central allowance (20%).
- **Undefended scenarios** for the 5%, 1%, 1%+25% climate change, 1%+35% climate change , 1%+70% climate change and 0.1% AEP events. The 1% and 0.1% AEP events have been used to inform the development of Flood Zones 3 and 2 on the Flood Map for Planning (Rivers and Sea)[10].

2.2.30 The following outputs were produced from the hydraulic modelling: maximum flood extents, maximum depth grids, maximum velocity grids, maximum water level grids and maximum hazard rating grids. Modelled flood extents have been derived from multiple storm durations.

2.2.31 **Appendix A Figure 8** shows the Middle Mole maximum flood extents for the defended 1% AEP event including climate change scenarios. This is also included within the site assessments in **Appendix B**.

2.2.32 **Appendix A Figure 11** shows the maximum hazard rating for the design event (1% AEP plus a 25% climate change allowance) for the 24 hour storm. The 24 hour storm event has been used as it indicates the most widespread hazard across Elmbridge. The 12 hour storm indicated more widespread hazard near Cobham and Stoke D'Abernon Railway Station compared to the 24 hour storm, however this does not impact any of the sites considered within this Level 2 SFRA. This is also included within the site assessments in **Appendix B**.

Lower Mole

2.2.33 Modelling of the Lower Mole was supplied by the Environment Agency from the Lower Mole Flood Risk Study[15]. The catchment area covers four main rivers: the Lower Mole, Ember, Dead River and the Leathe. The model is a 1D-2D linked model.

2.2.34 The following scenarios were undertaken:

- **Defended scenarios** for the following AEP events: 20%, 5%, 1.33%, 1%, 0.5% and 0.1%. Due to the absence of the 3.33% AEP flood extent, the 1.33% flood extent has been used as the starting point from which to delineate Flood Zone 3b Functional Floodplain for Elmbridge BC. This has been mapped in **Appendix A Figure 1** and the site assessments in **Appendix B**.
- **Climate change scenarios**: a 20% increase in peak flows applied to the defended 1% AEP modelled event. Modelling results for the full suite of new allowances, as set out in Table 2 1, are not currently available. It is not currently within the scope of this SFRA to re-run the Lower Mole model to account for the new climate change allowances. As noted in Table 2-1, the higher central allowance for the Mole management catchment is 20%. The 20% allowance has been used as a conservative outline for the central allowance (12%) within this Level 2 SFRA.
- **Undefended scenarios** for the 1%, 0.5% and 0.1% AEP events. The 1% and 0.1% AEP events have been used to inform the development of Flood Zones 3 and 2 on the Flood Map for Planning (Rivers and Sea)[10].

[14] CH2M, October 2018, Leatherhead and Middle Mole Flood Alleviation Scheme
[15] Halcrow Group Limited, March 2009, Lower Mole Flood Risk Study.

2.2.35 The following outputs were provided with the hydraulic modelling: maximum flood extents and .dat files for depth, velocity, flow and water level. No hazard information was provided. Due to updated modelling available for the Dead River (described in next section), clipped flood extents for the Lower Mole have been provided by the Environment Agency. Lower Mole maximum depth grids used within this SFRA have been clipped to match this extent. **It is noted that the Lower Mole is not indicated to come out of bank during the defended 1% AEP event.**

2.2.36 **Appendix A Figure 8** shows the Lower Mole maximum flood extent for the defended 1% AEP event including a 20% allowance for climate change. This is also included within the site assessments in **Appendix B**.

2.2.37 Maximum depth grids have been extracted from the depth .dat file and have been mapped in **Appendix A Figure 12** for the design event (1% AEP plus a 20% allowance for climate change) in the absence of hazard ratings. This is also included within the site assessments in **Appendix B**.

Dead River Modelling

2.2.38 Modelling of the Dead River was supplied by the Environment Agency from the Dead River and Surbiton Stream Flood Risk Management (FRM) Study[16]. Additional climate change scenario runs were performed in 2017[17]. The model is a 1D-2D linked model.

2.2.39 No formal defences were identified for the study and therefore the defended and undefended model scenarios are the same. The following scenarios were undertaken:

- **Defended scenarios** for the following AEP events: 20%, 5%, 2%, 1.33%, 1%, 0.5%, 0.4% and 0.1%. Due to the absence of the 3.33% AEP flood extent, the 2% AEP flood extent has been used as the starting point from which to delineate Flood Zone 3b Functional Floodplain for Elmbridge BC. This has been mapped in **Appendix A Figure 1** and the site assessments in **Appendix B**.
- **Climate change scenarios**: a 20% increase in peak flows applied to the defended 1% AEP modelled event as agreed with an Environment Agency Project Manager in 2013. The 25%, 35% and 70% increases in peak flows applied to the defended 1% AEP modelled event as agreed with the Environment Agency in 2017. Modelling results for the full suite of new allowances, as set out in Table 2-1, are not currently available. It is not currently within the scope of this SFRA to re-run the Dead River model to account for the new climate change allowances. As noted in Table 2-1, the higher central allowance for the Mole management catchment is 20%. The 20% allowance has been used as a conservative outline for the central allowance (12%) within this Level 2 SFRA.
- **Undefended scenarios** for the 5%, 1% and 0.1% AEP events. The 1% and 0.1% AEP events have been used to inform the development of Flood Zones 3 and 2 on the Flood Map for Planning (Rivers and Sea)[10].

2.2.40 The following outputs were provided with the hydraulic modelling: maximum flood extent, maximum depth grid, maximum velocity, maximum hazard rating, maximum water level.

2.2.41 **Appendix A Figure 8** shows the Dead River maximum flood extents for the defended 1% AEP event including climate change scenarios. This is also included within the site assessments in **Appendix B**.

2.2.42 **Appendix A Figure 13** shows the maximum hazard rating for the design event (1% AEP plus a 20% climate change allowance). This is also included within the site assessments in **Appendix B**.

River Rythe

2.2.43 Modelling of the River Rythe was supplied by the Environment Agency from the River Rythe Modelling Report[18]. The model is a 1D-2D linked model and includes the River Rythe and an unnamed tributary.

[16] JBA, April 2013, Dead River and Surbiton Stream FRM Study.
[17] JBA, July 2017, Dead River Climate Change Modelling Technical Note.
[18] JacksonHyder, April 2016, River Rythe Modelling Report.

2.2.44 No raised defences were identified within the study area and therefore all scenarios have been classed as undefended. The following scenarios were undertaken:

- Scenarios for the following AEP events: 50%, 20%, 10%, 5%, 3.33%, 2%, 1.33%, 1%, and 0.1%. The 3.3% AEP flood extent has been used as the starting point from which to delineate Flood Zone 3b Functional Floodplain for Elmbridge BC, as mapped in **Appendix A Figure 1** and the site assessments in **Appendix B**. Scenarios for the 1% AEP and 0.1% AEP events (to inform the development of Flood Zones 3 and 2 respectively on the Flood Map for Planning (Rivers and Sea)[10]).
- **Climate change scenarios**: a 20% increase in peak flows applied to the 1% AEP modelled event. Modelling results for the full suite of allowances, as set out in Table 2-1, are not currently available. It is not currently within the scope of this SFRA to re-run the River Rythe model to account for the new climate change allowances. As noted in Table 2-1, the central allowance for the Mole management catchment is 12% and therefore the 20% dataset has been used as a conservative approach. The higher central allowance is 20% and therefore the available dataset is suitable.

2.2.45 The following outputs were produced from the hydraulic modelling: maximum flood extent, maximum depth grids, maximum velocity grids, maximum hazard rating grids and maximum water level grids.

2.2.46 **Appendix A Figure 8** shows the River Rythe maximum flood extents for the 1% AEP event including the 20% allowance for climate change scenario. This is also included within the site assessments in **Appendix B**.

2.2.47 **Appendix A Figure 14** shows the maximum hazard rating for the design event (1% AEP plus a 20% climate change allowance). This is also included within the site assessments in **Appendix B**

2.3 Risk of Flooding from Surface Water

Flood Extents

2.3.1 The Environment Agency's Risk of Flooding from Surface Water (RoFSW) dataset includes GIS layers showing the extent of flooding from surface water that could result from a flood with a 3.33%, 1% and 0.1% AEP in any given year.

2.3.2 It is noted that the Risk of Flooding from Surface Water mapping is not to be used at property level. This is due to the way the maps have been produced and the fact that they are indicative. The maps are therefore not appropriate to act as the sole evidence for any specific planning or regulatory decision or assessment of risk in relation to flooding at any scale without further supporting studies or evidence. However, the mapping provides a useful source of information to identify the risk of surface water flooding to the local area in which a site is located, and the general patterns of surface water flow and ponding.

2.3.3 Mapping for the whole study area, including the sites considered in this Level 2 SFRA, is included in **Appendix A Figure 15**. Mapping local to each of the sites considered in this Level 2 SFRA is provided in the site assessments in Appendix B.

2.4 Groundwater Flooding

BGS Susceptibility to Groundwater Flooding

2.4.1 The British Geological Survey (BGS) dataset 'Susceptibility to Groundwater Flooding' can be used to identify where there is potential for groundwater flooding to occur based on geological and hydrogeological information.

2.4.2 The information shown in the Susceptibility to Groundwater Flooding mapping is based on conceptual understanding of the regional geology and hydrogeology and is therefore only an indication of where groundwater flooding may occur. It does not indicate hazard or risk, any information on the depth to which groundwater flooding may occur, nor the likelihood of the occurrence of an event of a particular magnitude. This information should not be used in isolation to make planning decisions at any scale or

to indicate the risk of groundwater flooding, but it does provide a high level overview of the potential for groundwater flooding. The map shows the following information:

- **Limited potential for groundwater flooding to occur**: In this area there is a limited potential, based on an understanding of the underlying geology and hydrogeological conditions, that groundwater flooding may occur.
- **Potential for groundwater flooding of property situated below ground level**: In this area there is the potential, based on an understanding of the underlying geology and hydrogeological conditions, that groundwater flooding may occur in property or infrastructure *below ground level*, such as basements.
- **Potential for groundwater flooding to occur at surface**: In this area there is the potential, based on an understanding of the underlying geology and hydrogeological conditions, that groundwater flooding may occur *above the ground*.

2.4.3 All other areas are not considered to be prone to groundwater flooding.

2.4.4 Mapping for the whole study area, including the sites considered in this Level 2 SFRA, is included within **Appendix A Figure 16**. Mapping local to each of the sites considered in this Level 2 SFRA is provided in the site assessments in **Appendix B**.

2.5 Reservoir Flooding

2.5.1 The Environment Agency's reservoir flood extents include the extents for all large, raised reservoirs in the event that they were to fail and release the water held on both a dry and wet day when local rivers are at normal levels. This is a 'worst case scenario' and it is unlikely that any actual flood would be this large. This data does not give an indication of the probability of reservoir flooding occurring.

2.5.2 The likelihood of reservoir flooding is much lower than other forms of flooding. Current reservoir regulation, which has been further enhanced by the Flood and Water Management Act, aims to make sure that all reservoirs are properly maintained and monitored in order to detect and repair any problem[19].

2.5.3 Mapping local to each of the sites considered in this Level 2 SFRA is provided in the site assessments in **Appendix B**.

2.6 Historic Flood Records

Recorded Flood Outlines

2.6.1 The Borough has a history of significant flooding events, specifically from the River Thames, with major events occurring in 1929, 1937, 1947, 1954, 1968, 1974, 1979, 1988, 1990, 2000, 2003, 2011, 2014 and 2019. The Environment Agency dataset 'Recorded Flood Outlines' has been used to inform the Level 2 SFRA site assessments.

2.6.2 Mapping for the whole study area, including the sites considered in this Level 2 SFRA, is included within **Appendix A Figure 17**. Mapping local to each of the sites considered in this Level 2 SFRA is provided in the site assessments in **Appendix B**.

Lead Local Flood Authority Records

2.6.3 In their role as the LLFA, SCC has duties to record and investigate flood incidents relating to local sources of flooding, namely flooding from surface water, groundwater and ordinary watercourses. SCC has provided a 'Property Flood Roads' dataset indicating road locations along which internal, external or unknown property flooding has been reported to SCC.

2.6.4 This dataset is presented spatially in **Appendix A Figure 17**. Mapping local to each of the sites considered in this Level 2 SFRA is provided in the site assessments in **Appendix B**.

[19] Press Release: 'Reservoir flood maps published' https://www.gov.uk/government/news/reservoir-flood-maps-published

Sewer Flooding Records

2.6.5 Elmbridge BC provided sewer flooding records for the last 5 years, obtained from Thames Water. Due to data protection requirements, this data has not been provided at the individual property level; rather the register comprises the number of properties within 4 digit postcode areas that have experienced flooding, either internally or externally, over the last 5 years. It should be noted that it is likely that there have also been unreported sewer flooding incidents in this area over this time period.

2.6.6 This data has been referred to within the Level 2 SFRA site assessments in **Appendix B**.

3. Level 2 SFRA Site Assessments

3.1 Proforma Template

3.1.1 Site assessment proformas are included in **Appendix B**. Table 3-1 provides an overview of the fields in the proforma and the source of the information or dataset. An overview of the risk of flooding is provided, based on the available datasets, followed by recommendations for how development could be delivered on the site to meet part (2) of the Exception Test.

Table 3-1 Datasets and information used for Level 2 Site Assessment Proformas

Proforma Field	Dataset / information used
Site Description	
Site Allocation and LAA References	As provided by Elmbridge BC (Excel sheet and GIS layer of sites).
Delivery Period	As provided by Elmbridge BC (Excel sheet and GIS layer of sites).
Site Name	As provided by Elmbridge BC (Excel sheet and GIS layer of sites).
Area (ha)	The area of the site (hectares).
Proposed use	As provided by Elmbridge BC.
Vulnerability classification	Defined in accordance with Flood Risk and Coastal Change PPG Table 2.
Flood Zones and Historic Flooding	
Proportion within each Flood Zone	Flood Map for Planning (Rivers and Sea) Flood Zone 2; Flood Map for Planning (Rivers and Sea) Flood Zone 3; Flood Map for Planning (Rivers and Sea); Flood Zone 3b Functional Floodplain outline created from 3.33% AEP Middle Mole, Lower Wey, River Thames and River Rythe; 2% AEP Dead River and 1.33% AEP Lower Mole.
Flood Warning Area	Environment Agency Flood Warning Areas.
Flood Priority Area and Status	As provided by SCC.
Proximity to Main River/Watercourse	Calculated using the Environment Agency Main River dataset obtained from the Defra Data Services Platform and the OS watercourse layer provided by Elmbridge BC.
Recorded River Flooding Outlines in which the site is located	The dates of the flood events that have affected the site, as detailed in the Environment Agency 'Recorded Flood Outlines'.
Sewer flooding records within the post code area in which the site is located:	As provided by Elmbridge BC, obtained by Thames Water. Described in Section 2.6.
River Mapping	
Maximum Flood Extents	Maximum flood extent map(s) for the watercourses relevant to the site (River Thames, River Wey, River Rythe, Lower Mole, Middle Mole and Dead River), as described in Section 2.2.
Maximum Flood Depth	Maximum flood depth map(s) for the watercourses relevant to the site (Lower Mole), as described in Section 2.2.
Maximum Flood Hazard	Maximum flood hazard map(s) for the watercourses relevant to the site (River Thames, River Wey, River Rythe, Middle Mole and Dead River), as described in Section 2.2.
Surface Water Flooding	
Risk of Flooding from Surface Water Map	Environment Agency dataset obtained from the Defra Data Services Platform.
Groundwater Flooding	
Bedrock Geology	Bedrock geology underlying the site, based on BGS mapping.
Superficial Geology	Superficial geology underlying the site, based on BGS mapping.
BGS Susceptibility for Groundwater Flooding	A BGS dataset which gives a high level overview of where groundwater flooding may occur based on a conceptual understanding of regional geology and hydrogeology. Described further in Section 2.4.
Water Framework Directive	
Fluvial Information: River Management and Operational Catchments; Waterbody Name	Extracted from the Environment Agency Dataset obtained from the EA Catchment Explorer.
Groundwater Information: Groundwater Management and Operational Catchments; Groundwater Body Name	Extracted from the Environment Agency Dataset obtained from the EA Catchment Explorer.
Other sources	
Flooding from Reservoirs in the Event of a Break or Failure (when river levels are normal and when there is also flooding from rivers)	Environment Agency datasets obtained from the Defra Data Services Platform.
Summary	

An overview of the risk of flooding to the site now and in the future (as a result of the impacts of climate change) based on the information within the proforma.
Site Specific Recommendations
Recommendations for how development could be delivered on the site to meet the requirements of part 2 of the Exception Test (where required) i.e., that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. Recommendations are made in line with the development management measures presented within the Level 1 SFRA[3] (Chapter 7.3) and typically address the following: - Applying the sequential approach within the development site, - Setting back development from the edge of watercourses, - Finished floor levels, - Floodplain compensation storage, - Access and egress arrangements, - Flood warning and evacuation procedures, - Surface water management, - Further investigation of groundwater levels.

3.2 Summary of Site Assessments

3.2.1 Table 3-2 summarises the findings that are within the site assessments in **Appendix B**. The sites have been grouped by settlement area. It is noted in Table 3-2 whether or not the Exception Test is required in accordance with Table 2 of the PPG (Table 1-2), based on Flood Zone and development vulnerability classification.

3.2.2 The last column Table 3-2 provides a summary of the flood risk assessment and implications for safety of proposed development. This identifies that for several of the sites, identified in orange, safe access/egress is not likely to be available for the developments during the design event (1% AEP plus a central allowance for climate change).

3.2.3 **For these sites, Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of safety within the development are an appropriate approach to demonstrate safety of development and satisfy the Exception Test. Elmbridge BC should also consider and identify opportunities to improve access routes in the future as part of wider infrastructure delivery in these areas.**

3.2.4 This applies to the following sites:

- D5 89-90 Woodfield Road, Thames Ditton, KT7 0DS
- D11 Garages to the rear of Blair Avenue, Weston Green
- MOL2 133-135 Walton Road, East Molesey, KT8 0DT
- MOL4 East Molesey Car Park, Walton Road, East Molesey
- MOL10 Vine Medical Centre, 69 Pemberton Road, East Molesey, KT8 9LJ
- MOL14 43 Palace Road, East Molesey, KT8 9DN
- MOL15 Pavilion Sports Club car park, Hurst Lane, East Molesey, KT8 9DX
- MOL16 Tesco Metro car park, Walton Road, East Molesey
- WEY10 8 Sopwith Drive
- WEY35 Horizon Business Village

3.2.5 As well as the demonstrateing the safety of the proposed development, the Exception Test also requires that development of the site must not increase flooding to surrounding areas, and where possible the risk is reduced. For several of the development sites, a large proportion of the site is within the flood extent for the design flood (1% AEP including central climate change allowance) and therefore it may not be possible to provide floodplain compensation storage within the site for any increase in building footprint. **As a result, the built footprint of the new development of the site should not exceed that of the existing development. This could limit the number of units that can be delivered on the site, particularly for those sites that currently comprise car parking and have no built footprint.** This applies to the following sites:

- D5 89-90 Woodfield Road, Thames Ditton, KT7 0DS (0.07ha, 97% in design flood extent)
- D11 Garages to rear of Blair Avenue, Weston Green (0.11ha, 55% in design flood extent)
- D16 Ashley Road Car Park, Thames Ditton (0.21ha, 69% in design flood extent)
- MOL2 133-135 Walton Road, East Molesey, KT8 0DT (0.11ha, 95% in design flood extent)
- MOL4 East Molesey Car Park, Walton Road, East Molesey (0.39ha, 87% in design flood extent)
- MOL10 Vine Medical Centre, 69 Pemberton Road, East Molesey, KT8 9LJ (0.11ha, 87% in design flood extent)
- MOL14 43 Palace Road, East Molesey, KT8 9DN (0.27ha, 83% in design flood extent)
- MOL16 Tesco Metro car park, Walton Road, East Molesey (0.21ha, 100% in design flood extent)
- WEY10 8 Sopwith Drive (1.14ha, 97% in design flood extent)
- WEY26 The Heights, Weybridge (20ha, 58% in design flood extent)
- WEY35 Horizon Business Village (1.92ha, 87% in design flood extent)

3.2.6 For **all** proposed development sites:

- Development proposals should seek to restrict surface water runoff rates to greenfield rates; demonstrate sustainable approaches to the management of surface water making use of SuDS; and incorporate soft landscaping, planting, and permeable surfacing.
- A preliminary Hydrogeological Risk Assessment (HRA) should be undertaken to determine ground conditions and groundwater levels in proximity to the site, and to identify whether the proposed development will impact on groundwater, either from subsurface construction or from changes to surface water drainage. The potential impact of climate change will be included within this assessment. Should the preliminary HRA identify potential for impact, a full HRA should be prepared to identify proposed mitigation measures.

Table 3-2 Summary of flood risk issues and constraints

Site Allocation Reference	Area (ha)	Address	Units	Year in Local Plan (when development is likely to occur)	Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)	River Model(s) used to assess site	Proportion of site at risk of flooding from rivers during design event (1% AEP + central CC allowance)	Exception Test Required?	Summary of Flood Risk Constraints and Safety of Development (Refer to Appendix B for full details and recommendations for each site).
Cobham, Oxshott, Stoke D'Abernon and Downside												
COS1	0.27	Cedar House, Mill Road, Cobham, KT11 3AL	7	1 to 5 years	31	69	0	0	Middle Mole	2%	Exception Test is not required	This site is at risk of flooding from the River Mole to the south during the design event. Safe access/egress may be achievable via Stoke Road to the south east of the site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low risk of flooding from surface water (0.1%≥ AEP).
Thames Ditton, Long Ditton, Hinchley Wood and Weston Green												
D2	0.23	Car Park south of Southbank, Thorkhill Road, Thames Ditton	7	1 to 5 years	70	30	0	0	River Rythe and Lower Thames: Thames Dominated	7% (Thames)	Exception Test is not required	The north west of the site is at risk of flooding from rivers during the design event. Safe access/egress may be achievable to the north of the site via Southbank and Winters Road. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. This site is at medium to high risk of flooding from surface water (1% to 3.33% AEP).
D5	0.07	89-90 Woodfield Road, Thames Ditton, KT7 0DS	7	1 to 5 years	0	55	45	0	River Rythe	97%	Exception Test required: Site partially located within Flood Zone 3a. Proposed development has a vulnerability classification of More Vulnerable.	This north and south of the site are at risk of flooding from rivers during the design event. Safe access/egress is not likely to be achievable for this site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at medium to high risk of flooding from surface water (1% to 3.33% AEP). **Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of safety within the development are an appropriate approach to demonstrate safety of development and satisfy the Exception Test.** **The majority of the site (97%) is at risk of flooding during the design event. It will not be possible to deliver floodplain compensation storage within the site for any increase in built footprint. Therefore, proposed development should not increase the built footprint.**
D7	0.35	47 Portsmouth Road	25	1 to 5 years	0	99	0	1	River Rythe and Lower Thames: Thames Dominated	0.7% (Rythe)	Exception Test is not required	The south and east of this site are indicated to be at risk of flooding from the River Rythe during the design event. The site is not indicated to be at risk of flooding from the Lower Thames during the design event. 1% of the site lies within Flood Zone 3b (3.33% AEP) from the Rythe, where new development should not be permitted. Redevelopment of existing buildings may be permitted, but only where the vulnerability of the development is not increased (and where possible reduced) and the number of occupants does not increase. Safe access/egress is likely to be achievable to the north of the site via the A307 southbound. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The Exception Test is not required.
D9	0.09	Corner Cottage, Portsmouth Road, KT7 0TQ	5	1 to 5 years	0	100	0	0	Lower Thames: Thames Dominated	0%	Exception Test is not required	This site has been defined as Flood Zone 2 by the Environment Agency due to its location within the September 1968 historic flood outline. Modelling for this site does not indicate the site to be at risk of flooding from rivers during the design event. Safe access/egress is achievable via the A307 southbound. This site is at very low to low risk of flooding from surface water (0.1%≥ AEP). The Exception Test is not required.
D11	0.11	Garages to the rear of Blair Avenue, Weston Green	4	1 to 5 years	0	100	0	0	Lower Mole	55%	Exception Test is not required	This site has been defined as Flood Zone 2 by the Environment Agency due to both its location within the 0.1% AEP modelled flood extent and its location within the September 1968 historic flood outline. This site is at risk of flooding from rivers during the design flood event. In the absence of hazard mapping for the Lower Mole, flood depths have been assessed. Depths of 0.01m to 0.5m are experienced across the site and surrounding roads (Blair Avenue and Cranbrook Drive), therefore safe access/egress may not be achievable. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. **Although the site does not require an Exception Test, a site specific FRA will be required to demonstrate that the development will be safe. Given that safe access/egress is not likely to be achievable for the site, Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of safety within the development are an appropriate approach to demonstrate safety of development within a site specific FRA.** **Approximately half of the site (55%) is at risk of flooding during the design event. Development should be steered away from this area. Any increase in built footprint within the design flood extent will need to be compensated for, on a level for level volume for volume basis within the site. (Refer to Level 1 SFRA for details of Floodplain Compensation Storage).**
D12	0.53	Sandpiper, Newlands Avenue, Thames Ditton, KT7 0HF	21	6 to 10 years	83	17	0	0	River Rythe	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is achievable during the design flood event. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at low risk of flooding from surface water (0.1% AEP) in the north and south.
D15	0.55	Flats 9-41 and Garages on Longmead Road, Thames Ditton, KT7 0JF	37	11 to 15 years	79	21	0	0	River Rythe and Lower Thames: Thames Dominated	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access and egress as well as safe refuge is achievable via Weston Green Road to the west of the site. Safe refuge

Site Allocation Reference	Area (ha)	Address	Units	Year in Local Plan (when development is likely to occur)	Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)	River Model(s) used to assess site	Proportion of site at risk of flooding from rivers during design event (1% AEP + central CC allowance)	Exception Test Required?	Summary of Flood Risk Constraints and Safety of Development (Refer to Appendix B for full details and recommendations for each site).
												should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at low to low risk of flooding from surface water (0.1%≥ AEP).
D16	0.21	Ashley Road Car Park, Thames Ditton	14	11 to 15 years	8	92	0	0	Lower Thames: Thames Dominated	69%	Exception Test is not required	This site is indicated to be at risk of flooding from rivers during the design event. Safe access/egress may be achievable via Ashley Road to the north of the site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at medium to high risk of flooding from surface water (1% to 3.33% AEP). **69% of the site is at risk of flooding during the design event. Development should be steered away from this area. Any increase in built footprint within the design flood extent will need to be compensated for, on a level for level volume for volume basis within the site. (Refer to Level 1 SFRA for details of Floodplain Compensation Storage).**
D25	0.09	5A-6A Station Road, Esher, KT10 8DY	5	11 to 15 years	27	73	0	0	Lower Mole	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. In the absence of hazard mapping for the Lower Mole, flood depths have been assessed. Safe access/egress is likely to be achievable to the east of the site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at low risk of flooding from surface water (0.1% AEP).
East and West Molesey												
D6	0.64	Sundial House, The Molesey Venture	61	1 to 5 years	35	64	0	1	Lower Thames: Tributary Dominated and Lower Mole	26% (Thames)	Exception Test is not required	The north and north west of the site are indicated to be at risk of flooding from rivers during the design event. 1% of the site lies within Flood Zone 3b (3.33% AEP) where new development should not be permitted. Redevelopment of existing buildings may be permitted, but only where the vulnerability of the development is not increased (and where possible reduced) and the number of occupants does not increase. Safe access/egress may be achievable during the design event via Orchard Lane to the south. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP).
D18	0.08	118-120 Bridge Road, East Molesey, KT8 9HW	6	11 to 15 years	69	31	0	0	Lower Thames: Tributary Dominated and Lower Mole	0%	Exception Test is not required	The site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is achievable to the west of the site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. This site is at very low to low risk of flooding from surface water (0.1%≥ AEP).
D19	0.17	Industrial units at 67 Summer Road East Molesey KT8 9LX	12	11 to 15 years	0	100	0	0	Lower Thames: Tributary Dominated and Lower Mole	0%	Exception Test is not required	The site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is achievable southbound on the A307. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. This site is at medium to high risk of flooding from surface water (1% to 3.33% AEP).
MOL2	0.11	133-135 Walton Road, East Molesey, KT8 0DT	8	1 to 5 years	0	100	0	0	Lower Thames: Thames Dominated and Tributary Dominated	95% (Thames Dom)	Exception Test is not required	The site is indicated to be at risk of flooding from rivers during the design event. Safe access/egress is not likely to be achievable. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP). **Although the site does not require an Exception Test, a site specific FRA will be required to demonstrate that the development will be safe. Given that safe access/egress is not likely to be achievable for the site, Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of safety within the development are an appropriate approach to demonstrate safety of development within a site specific FRA.** **The majority of the site (95%) is at risk of flooding during the design event. It will not be possible to deliver floodplain compensation storage within the site for any increase in built footprint. Therefore, proposed development should not increase the built footprint.**
MOL 3	0.05	Garage block west of 14 and north of 15 Brende Gardens, West Molesey	4	1 to 5 years	98	2	0	0	Dead River, Lower Mole and Lower Thames: Tributary Dominated	0%	Exception Test is not required	The site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is likely to be achievable to the south east of the site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP. The Exception Test is not required.
MOL4	0.39	East Molesey Car Park, Walton Road, East Molesey	23	1 to 5 years	2	98	0	0	Lower Thames: Thames Dominated and Tributary Dominated	87% (Thames Dom)	Exception Test is not required	This site is indicated to be at risk of flooding from rivers during the design event. Safe access/egress is not likely to be achievable. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP). **Although the site does not require an Exception Test, a site specific FRA will be required to demonstrate that the development will be safe. Given that safe access/egress is not likely to be achievable for the site, Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of safety within the development are an appropriate approach to demonstrate safety of development within a site specific FRA.** **87% of the site is at risk of flooding during the design event. It is unlikely to be possible to deliver floodplain compensation storage within the site for any increase in built footprint. Therefore, proposed development should not increase the built footprint. Any increase in built footprint within**

Site Allocation Reference	Area (ha)	Address	Units	Year in Local Plan (when development is likely to occur)	Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)	River Model(s) used to assess site	Proportion of site at risk of flooding from rivers during design event (1% AEP + central CC allowance)	Exception Test Required?	Summary of Flood Risk Constraints and Safety of Development (Refer to Appendix B for full details and recommendations for each site).
												the design flood extent will need to be compensated for, on a level for level volume for volume basis within the site. (Refer to Level 1 SFRA for details of Floodplain Compensation Storage).
MOL9	0.2	11-27 Down Street, West Molesey, KT8 2TG	7	6 to 10 years	49	51	0	0	Dead River	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is achievable to the north and east of the site via Down Street. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP). The Exception Test is not required.
MOL10	0.11	Vine Medical Centre, 69 Pemberton Road, East Molesey, KT8 9LJ	7	6 to 10 years	0	100	0	0	Lower Thames: Thames Dominated and Tributary Dominated	87% (Thames Dom)	Exception Test is not required	This site is indicated to be at risk of flooding from rivers during the design event. Safe access/egress is not likely to be achievable. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP). **Although the site does not require an Exception Test, a site specific FRA will be required to demonstrate that the development will be safe. Given that safe access/egress is not likely to be achievable for the site, Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of safety within the development are an appropriate approach to demonstrate safety of development within a site specific FRA.** **87% of the site is at risk of flooding during the design event. It is unlikely to be possible to deliver floodplain compensation storage within the site for any increase in built footprint. Therefore, proposed development should not increase the built footprint. Any increase in built footprint within the design flood extent will need to be compensated for, on a level for level volume for volume basis within the site. (Refer to Level 1 SFRA for details of Floodplain Compensation Storage).**
MOL12	0.51	Henrietta Parker Centre, Ray Road, West Molesey	13	11 to 15 years	4	96	0	0	Dead River, Lower Mole and Lower Thames: Tributary Dominated	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is achievable to the east of the site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change.
MOL14	0.27	43 Palace Road, East Molesey, KT8 9DN	18	11 to 15 years	16	77	0	7	Lower Thames: Thames Dominated	83%	Exception Test is not required	This site is indicated to be at risk of flooding from rivers during the design event. Safe access/egress is not likely to be achievable for this site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. 7% of the site lies within Flood Zone 3b (3.33% AEP) where new development should not be permitted. Redevelopment of existing buildings may be permitted, but only where the vulnerability of the development is not increased (and where possible reduced) and the number of occupants does not increase. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP). **Although the site does not require an Exception Test, a site specific FRA will be required to demonstrate that the development will be safe. Given that safe access/egress is not likely to be achievable for the site, Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of safety within the development are an appropriate approach to demonstrate safety of development within a site specific FRA.** **83% of the site is at risk of flooding during the design event. Development should be steered away from this area. Any increase in built footprint within the design flood extent will need to be compensated for, on a level for level volume for volume basis within the site. (Refer to Level 1 SFRA for details of Floodplain Compensation Storage).**
MOL15	0.34	Pavilion Sports Club car park, Hurst Lane, East Molesey, KT8 9DX	9	11 to 15 years	0	100	0	0	Lower Thames: Thames Dominated and Tributary Dominated	0%	Exception Test is not required	This site has been defined as Flood Zone 2 by the Environment Agency due to its location within the 1947 historic flood outline. This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is not likely to be achievable based on Lower Thames: *Thames Dominated* hazard outputs. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP). **Although the site does not require an Exception Test, a site specific FRA will be required to demonstrate that the development will be safe. Given that safe access/egress is not likely to be achievable for the site, Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of safety within the development are an appropriate approach to demonstrate safety of development within a site specific FRA.**
MOL16	0.21	Tesco Metro car park, Walton Road, East Molesey	11	11 to 15 years	0	100	0	0	Lower Thames: Thames Dominated and Tributary Dominated	100% (Thames Dom)	Exception Test is not required	This site is indicated to be at risk of flooding from rivers during the design event based on outputs from the Thames Dominated model. Safe access/egress is not likely to be achievable. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP). **Although the site does not require an Exception Test, a site specific FRA will be required to demonstrate that the development will be safe. Given that safe access/egress is not likely to be achievable for the site, Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of**

Site Allocation Reference	Area (ha)	Address	Units	Year in Local Plan (when development is likely to occur)	Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)	River Model(s) used to assess site	Proportion of site at risk of flooding from rivers during design event (1% AEP + central CC allowance)	Exception Test Required?	Summary of Flood Risk Constraints and Safety of Development (Refer to Appendix B for full details and recommendations for each site).
												safety within the development are an appropriate approach to demonstrate safety of development within a site specific FRA. **The entire site (100%) is at risk of flooding during the design event. It will not be possible to deliver floodplain compensation storage within the site for any increase in built footprint. Therefore, proposed development should not increase the built footprint. Given the current use as a car park, this will limit the viable development on the site.**
MOL19	0.41	5 Matham Road, East Molesey, KT8 0SX	23	11 to 15 years	50.2	48.6	0.5	0.7	Lower Thames: Tributary Dominated and Lower Mole	1.8% (Thames)	Exception Test required: Site is partially Flood Zone 3a and proposed development has a vulnerability classification of More Vulnerable.	0.7% of this site is defined as Flood Zone 3b where new development should not be permitted. Redevelopment of existing buildings may be permitted, but only where the vulnerability of the development is not increased (and where possible reduced) and the number of occupants does not increase. This site is indicated to be at risk of flooding from rivers during the design event based on outputs from the Lower Thames: *Thames Dominated* model. Safe access/egress is likely to be achievable to the west of the site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP).
Esher												
ESH9	0.17	Café Rouge, Portsmouth Road, Esher, KT10 9AD	20 + 117m^2	1 to 5 years	13	87	0	0	River Rythe	0%	Exception Test is not required	This site has been defined as Flood Zone 2 by the Environment Agency due to its location within the September 1968 historic flood outline. This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is achievable to the south of the site. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP).
ESH12	0.1	Garages at Farm Road, Esher, KT10 8AX	3	6 to 10 years	2	98	0	0	Lower Mole	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is likely to be achievable to the north west of the site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at and very low to low risk of flooding from surface water (0.1%≥ AEP).
ESH15	1.33	Unit A & B Sandown Industrial Park, Esher	40	6 to 10 years	97.4	2.2	0.3	0.1	Middle Mole	0.3%	Exception Test required: Site is partially Flood Zone 3a and proposed development has a vulnerability classification of More Vulnerable.	0.1% of this site is defined as Flood Zone 3b where new development should not be permitted. Redevelopment of existing buildings may be permitted, but only where the vulnerability of the development is not increased (and where possible reduced) and the number of occupants does not increase. The western boundary of this site is indicated to be at risk of flooding from rivers during the design event. Safe access/egress is likely to be achievable via Mill Road. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change.
ESH16	2.1	River Mole Business Park, Mill Road, Esher	##	6 to 10 years	98	2	0	0	Middle Mole	0%	Exception Test is not required	This site has been defined as Flood Zone 3 by the Environment Agency due to its location within the September 1968 historic flood outline. This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is achievable via Mill Road. The site is at medium to high risk flooding from surface water (1% to 3.33% AEP).
Weybridge												
WEY10	1.14	8 Sopwith Drive	1404m^2	1 to 5 years	0	27	73	0	Lower Wey	97.4%	Exception Test is not required: Proposed development is Less Vulnerable.	This site is indicated to be at risk of flooding from rivers during the design event. Safe access/egress is achievable to a dry island, however dry islands are not recommended as an evacuation option. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at low to high risk of flooding from surface water (0.1% to 3.33% AEP). **Although the site does not require an Exception Test, a site specific FRA will be required to demonstrate that the development will be safe. Given that safe access/egress is not likely to be achievable for the site, Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of safety within the development are an appropriate approach to demonstrate safety of development within a site specific FRA. As the proposed development is Less Vulnerable this may be acceptable.** **The majority of the site (97%) is at risk of flooding during the design event. It will not be possible to deliver floodplain compensation storage within the site for any increase in built footprint. Therefore, proposed development should not increase the built footprint.**
WEY19	0.18	Shell Petrol Filling Station, 95 Brooklands Road, Weybridge KT13 0RP	5	11 to 15 years	89.3	8.3	2.4	0	Lower Wey	4%	Exception Test required: Site is partially Flood Zone 3a and proposed development has	This site is indicated to be at risk of flooding from rivers during the design event. Safe access/egress may be achievable to the east of the site via Brooklands Road. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at low to high risk of flooding from surface water (0.1% to 3.33% AEP).

Site Allocation Reference	Area (ha)	Address	Units	Year in Local Plan (when development is likely to occur)	Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)	River Model(s) used to assess site	Proportion of site at risk of flooding from rivers during design event (1% AEP + central CC allowance)	Exception Test Required?	Summary of Flood Risk Constraints and Safety of Development (Refer to Appendix B for full details and recommendations for each site).
											a vulnerability classification of More Vulnerable.	
WEY26	20	The Heights, Weybridge	9500m^2	11 to 15 years	23.7	33.7	39.7	2.9	Lower Wey	58%	Exception Test is not required: Proposed development is Less Vulnerable.	This site is indicated to be at risk of flooding from rivers during the design event. Safe access/egress may be achievable to the east of the site via Brooklands Road. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at low to high risk of flooding from surface water (0.1% to 3.33% AEP). This site lies partially within Flood Zone 3b. New development should not be permitted within the Flood Zone 3b extent. Redevelopment of existing buildings may be permitted, but only where the vulnerability of the development is not increased (and where possible reduced) and the number of occupants does not increase. **58% of the site is at risk of flooding during the design event. Development should be steered away from this area. Any increase in built footprint within the design flood extent will need to be compensated for, on a level for level volume for volume basis within the site. (Refer to Level 1 SFRA for details of Floodplain Compensation Storage). As the site is proposed for Less Vulnerable development, proposals should consider options for flood resilience.**
WEY35	1.92	Horizon Business Village	6000m^2	11 to 15 years	0	14.5	77.6	7.9	Lower Wey	87%	Exception Test is not required: Proposed development is Less Vulnerable.	This site is indicated to be at risk of flooding from rivers during the design event. Safe access/egress is not likely to be achievable for this site. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at low to high risk of flooding from surface water (0.1% to 3.33% AEP). This site lies partially within Flood Zone 3b. New development should not be permitted within the Flood Zone 3b extent. Redevelopment of existing buildings may be permitted, but only where the vulnerability of the development is not increased (and where possible reduced) and the number of occupants does not increase. **Although the site does not require an Exception Test, a site specific FRA will be required to demonstrate that the development will be safe. Given that safe access/egress is not likely to be achievable for the site, Elmbridge BC, in consultation with Emergency Planners, will need to determine whether reliance on evacuation prior to a flood event and the provision of places of safety within the development are an appropriate approach to demonstrate safety of development within a site specific FRA. As the proposed development is Less Vulnerable this may be acceptable.** **The majority of the site (87%) is at risk of flooding during the design event. It will not be possible to deliver floodplain compensation storage within the site for any increase in built footprint. Therefore, proposed development should not increase the built footprint. As the site is proposed for Less Vulnerable development, proposals should consider options for flood resilience.**
Walton On Thames												
WOT2	0.31	Leylands House, Molesey Road, Walton-on-Thames	9	11 to 15 years	28	72	0	0	Dead River	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is likely to be achievable via Fernbank Avenue. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP).
WOT6	0.08	Garages to the rear of 17-27 Field Common Lane, Walton-On-Thames, KT12 3QH	3	1 to 5 years	0	100	0	0	Dead River	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is likely to be achievable via Byron Close. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP).
WOT8	0.11	16-18 Sandy Lane, KT12 2EQ	7	1 to 5 years	50	50	0	0	Dead River	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is likely to be achievable via Sandy Lane. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP).
WOT14	0.1	20 Sandy Lane, Walton-on-Thames, KT12 2EQ	7	6 to 10 years	45	55	0	0	Dead River	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is likely to be achievable via Sandy Lane. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP).
WOT23	0.11	Unit Rear of and 12-14 Sandy Lane, Walton-On-Thames, KT12 2EQ	9	11 to 15 years	97	3	0	0	Dead River	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is likely to be achievable via Sandy Lane. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP).
WOT37	0.2	Land north of Mellor Close, Walton-on-Thames, KT12-3RX	5	11 to 15 years	55	45	0	0	Dead River	0%	Exception Test is not required	This site is not indicated to be at risk of flooding from rivers during the design event. Safe access/egress is likely to be achievable via Mellor Close. Safe refuge should be designed into the development above the extreme flood event plus an allowance for climate change. The site is at very low to low risk of flooding from surface water (0.1%≥ AEP).

Appendix A Borough-Wide Mapping

Appendix B Site Assessments

B.1 Cobham, Oxshott, Stoke D'Abernon and Downside

COS1 Cedar House, Mill Road, Cobham, KT11 3AL

B.2 Thames Ditton, Long Ditton, Hinchley Wood, and Weston Green

D2 Car Park south of Southbank, Thorkhill Road, Thames Ditton

D5 89-90 Woodfield Road, Thames Ditton, KT7 0DS

D7 47 Portsmouth Road

D9 Corner Cottage, Portsmouth Road, KT7 0TQ

D11 Garages to the rear of Blair Avenue, Weston Green

D12 Sandpiper, Newlands Avenue, Thames Ditton, KT7 0HF

D15 Flats 9-41 and Garages on Longmead Road, Thames Ditton, KT7 0JF

D16 Ashley Road Car Park, Thames Ditton

D25 5A-6A Station Road, Esher, KT10 8DY

B.3 East and West Molesey

D6 Sundial House, The Molesey Venture

D18 118-120 Bridge Road, East Molesey, KT8 9HW

D19 Industrial units at 67 Summer Road East Molesey KT8 9LX

MOL2 133-135 Walton Road, East Molesey, KT8 0DT

MOL 3 Garage block west of 14 and north of 15 Brende Gardens, West Molesey

MOL4 East Molesey Car Park, Walton Road, East Molesey

MOL9 11-27 Down Street, West Molesey, KT8 2TG

MOL10 Vine Medical Centre, 69 Pemberton Road, East Molesey, KT8 9LJ

MOL12 Henrietta Parker Centre, Ray Road, West Molesey

MOL14 43 Palace Road, East Molesey, KT8 9DN

MOL15 Pavilion Sports Club car park, Hurst Lane, East Molesey, KT8 9DX

MOL16 Tesco Metro car park, Walton Road, East Molesey

MOL19 5 Matham Road, East Molesey, KT8 0SX

B.4 Esher

ESH9 Café Rouge, Portsmouth Road, Esher, KT10 9AD

ESH12 Garages at Farm Road, Esher, KT10 8AX

ESH15 Unit A & B Sandown Industrial Park, Esher

ESH16 River Mole Business Park, Mill Road, Esher

B.5 Weybridge

WEY10 8 Sopwith Drive

WEY19 Shell Petrol Filling Station, 95 Brooklands Road, Weybridge KT13 0RP

WEY26 The Heights, Weybridge

WEY35 Horizon Business Village

B.6 Walton on Thames

WOT2 Leylands House, Molesey Road, Walton-on-Thames

WOT6 Garages to the rear of 17-27 Field Common Lane, Walton-On-Thames, KT12 3QH

WOT8 16-18 Sandy Lane, KT12 2EQ

WOT14 20 Sandy Lane, Walton-on-Thames, KT12 2EQ

WOT23 Unit Rear of and 12-14 Sandy Lane, Walton-On-Thames, KT12 2EQ

WOT37 Land north of Mellor Close, Walton-on-Thames, KT12-3RX