Hampshire Water Transfer and Water Recycling Project

Environmental Statement – Appendix 19.1 Flood Risk Assessment – 6 of 8 documents

VOLUME NUMBER: 6

PLANNING INSPECTORATE SCHEME NUMBER: WA010002

APPLICATION DOCUMENT REFERENCE: 6.2

APFP REGULATION: 5(2)(a), 5(2)(e)

May 2026

Version 0

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Document	Title
Environmental Statement – Appendix 19.1 Flood Risk Assessment – 1 of 8 documents	Preliminary Flood Risk Assessment
Environmental Statement – Appendix 19.1 Flood Risk Assessment – 2 of 8 documents	Water Recycling Plant Flood Risk Assessment
Environmental Statement – Appendix 19.1 Flood Risk Assessment – 3 of 8 documents	Budds Farm Wastewater Treatment Works Pumping Station and Motor Control Centre Kiosk Flood Risk Assessment
Environmental Statement – Appendix 19.1 Flood Risk Assessment – 4 of 8 documents	Break Pressure Tank and Intermediate Pumping Station E Flood Risk Assessment
Environmental Statement – Appendix 19.1 Flood Risk Assessment – 5 of 8 documents	Intermediate Pumping Station F - Flood Risk Assessment
Environmental Statement – Appendix 19.1 Flood Risk Assessment – 6 of 8 documents	Intermediate Pumping Station G Flood Risk Assessment
Environmental Statement – Appendix 19.1 Flood Risk Assessment – 7 of 8 documents	Break Pressure Tank K Flood Risk Assessment
Environmental Statement – Appendix 19.1 Flood Risk Assessment – 8 of 8 documents	Flood Risk Assessment Sustainable Drainage Systems Strategy

Hampshire Water Transfer and Water Recycling Project

Environmental Statement – Appendix 19.1 Intermediate Pumping Station G Flood Risk Assessment

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Contents

1 Introduction

1.1 Purpose

1.1.1 Southern Water Services Limited (hereafter referred to as 'the Applicant') produced a Water Resources Management Plan (2020 – 2070) in 2019 (WRMP19), which outlined proposed long-term solutions to address an identified large-scale supply demand deficit in Hampshire from 2027 and to protect the unique chalk rivers in Hampshire, the River Test and River Itchen. This included a selection of long-term and large-scale water resource solutions, one of which was the Hampshire Water Transfer and Water Recycling Project (hereafter referred to as 'the Proposed Development'), which has since become the selected option to play a major role in making up the shortfall in water supply across the Hampshire supply area. The draft WRMP24 and revised draft WRMP24 reaffirmed the need for Proposed Development as the selected option required to address the continuing water resource deficit as identified in the WRMP19.

1.1.2 This document presents the findings of a Flood Risk Assessment (FRA) undertaken to accompany a Development Consent Order (DCO) for the Proposed Development which includes an Intermediate Pumping Station (IPS-G). The IPS-G would be located off Titchfield Lane, Wickham, Fareham, Hampshire, PO17 5HB and would be owned and operated on behalf of the Applicant.

1.1.3 On the basis of the Environment Agency's (EA) Flood Map for Planning [1], the IPS-G would be located in Flood Zone 1 and therefore has a low risk of flooding from rivers and the sea. The IPS-G would, however, be located on existing greenfield land. Therefore, a surface water management strategy has been developed using SuDS to ensure that the IPS-G does not result in increased rates or volumes of surface water leaving the site while also mimicking natural processes.

1.1.4 This FRA has been prepared specifically for the IPS-G. Although the IPS-G forms part of a wider Proposed Development subject to DCO approval, a standalone FRA is required as the IPS-G would result in an increase in impermeable surface area on greenfield land. The development comprises the construction of a new Intermediate Pumping Station and access road. With reference to Annex 3 of the National Planning Policy Framework (NPPF) [2], the IPS-G therefore represents a 'water-compatible development' required to transfer water (i.e. 'water transmission infrastructure and pumping stations').

1.1.5 This FRA seeks to demonstrate that flood risk from all sources associated with the IPS-G have been considered and that the and that the requirements of Section 4.7 of the National Policy Statement (NPS) for Water Resources Infrastructure [3], the NPPF, and the Planning Practice Guidance (PPG) [4] are met.

1.1.6 As set out in the Section 4.7.7 of the NPS for Water Resources Infrastructure, an appropriate FRA should:

- Consider the risk of all forms of flooding arising from the development, in addition to the risk of flooding to the project, and demonstrate how these risks will be managed and where relevant, mitigated, so that the development remains safe throughout its lifetime.
- Take into account the impacts of climate change, clearly stating the development lifetime over which the assessment has been made, and the range of climate scenarios considered.
- Explore opportunities for enhancing local flood risk management (for example, through increased water storage or adapting operational aspects of the infrastructure during critical flood risk periods).
- Consider the need for safe access and exit arrangements.
- Include the assessment of residual risk after risk reduction measures have been taken into account and demonstrate that this is acceptable for the development.
- Consider if there is a need to remain operational during a worst-case flood event over the development's lifetime, and;
- Provide evidence for the Secretary of State to apply the Sequential Test and Exception Test.

1.1.7 In addition, as set out in the PPG (Paragraph: 020 Reference ID: 7-020-20220825), the objectives of a site-specific FRA are to establish:

- Whether a proposed development is likely to be affected by current or future flooding from any source.
- Whether it will increase flood risk elsewhere.
- Whether the measures proposed to deal with these effects and risks are appropriate.
- The evidence for the local planning authority to apply (if necessary) the Sequential Test, and;
- Whether the development will be safe and pass the Exception Test, if applicable

1.2 Statement of professional competence

1.2.1 Stantec has many years of experience in, amongst other areas, the assessment of flood risk, hydrology, flood defence and river engineering. The authors and reviewers of this document are experienced hydrologists, and document approval has been undertaken by a Fellow of the Chartered Institution of Water and Environmental Management.

1.3 Report objectives and structure

1.3.1 This FRA concentrates on the flood risk issues over the operational lifetime of the IPS-G. This report has been prepared in accordance with the requirements of the NPS, the NPPF and the PPG. The objectives of this report are to a) quantify the flood risk to the site; b) demonstrate that the IPS-G would remain safe and operational taking climate change into consideration; and c) demonstrate that the IPS-G would not increase flood risk elsewhere.

1.4 Available information

1.4.1 This FRA is based on the following available information:

- EA flood risk mapping
- Publicly available DEFRA LiDAR Digital Terrain Model (DTM) data [5] (LiDAR Composite, DTM at 1m resolution), and
- An indicative site layout plan and outline design drawings of the IPS-G, all provided by the Applicant. Site specific design parameters can be found within the Design Principles Document (Document Reference 5.11, DCO Volume 5).

1.5 Planning policy

1.5.1 This FRA has been prepared in accordance with the relevant national, regional and local planning policy and statutory authority guidance as follows:

- National Policy Statement for Water Resources Infrastructure published in July 2025, with reference to Section 4.7: Flood Risk
- National policy in relation to flood risk is contained within the NPPF, updated December 2024, issued by the Ministry of Housing, Communities and Local Government, with reference to Section 14 ‘Meeting the challenge of climate change, flooding and coastal change’
- The associated PPG was published in March 2014 and (with reference to the ‘Flood Risk and Coastal Change’ section) last updated in September 2025
- The Environment Agency’s ‘Flood Risk Assessments: Climate Change Allowances’ guidance, published in February 2016 and last updated in May 2022
- The Cabinet Office ‘Keeping the Country Running: Natural Hazards and Infrastructure – A Guide to improving the resilience of critical infrastructure and essential services’, published in October 2011

1.5.2 Further details of the legislative and policy framework governing flood risk are set out in the Preliminary FRA (PFRA) (within ES Appendix 19.1 Flood Risk Assessment – 1 of 8 documents, Volume II). As that framework applies across the Proposed Development as a whole, including the permanent above-ground infrastructure, it has not been reproduced in full within this site-specific FRA. The

PFRA should be read alongside this report to gain a complete understanding of the relevant policy context.

1.6 Local planning policy

1.6.1 Hampshire County Council in their role as the Lead Local Flood Authority (LLFA) have produced Surface Water Guidance [6] that is aligned with the National Standards for SuDS [7], which form the baseline requirements for surface water drainage design in new developments. The guidance confirms that planning applications in Hampshire will be expected to comply with the National Standards from January 2026. SuDS have therefore been applied to ensure that the IPS-G does not result in an increase in rates or volumes of surface water leaving the site while also mimicking natural processes. The LLFA surface water management guidance has been followed with reference to the NPS for Water Resources Infrastructure, the National Standards for SuDS, and best practice information as set out in the Non-Statutory Technical Guidance and the CIRIA SuDS Manual (C753) [8]. The SuDS strategy for the IPS-G is detailed within the accompanying SuDS Strategy within ES Appendix 19.1 Flood Risk Assessment – 8 of 8 documents, Volume II.

1.7 Caveats and exclusions

1.7.1 This FRA has been prepared in accordance with the NPS, NPPF, the associated PPG, and Local Planning Policy. The proposed flood management and surface water management strategies are based on the relevant British Standards (BS8533, Assessing and managing flood risk in development) [9]; standing advice provided by the EA; LLFA guidance; or on common industry practice. The following caveats and exclusions apply to this FRA:

- Activities during the construction phase may have an impact on the existing and future flood risk. Thus, an assessment of the risks and appropriate mitigation measures would be identified and secured within the Outline Construction Environmental Management Plan (oCEMP) (Document reference 7.1, DCO Volume 7).
- The Construction (Design and Management) Regulations 2015 (CDM Regulations) would apply to any future development of this site which involves 'construction' work, as defined by the CDM Regulations. As such it is the responsibility of the proposed developer (ultimate client) to fulfil its duties under the CDM Regulations; and
- The approach for this FRA and proposals for the surface water management strategy are based on the requirements of the EA and Hampshire County Council in its role as the LLFA. The conclusions of this FRA are based on data and guidance available at the time of the study and on the subsequent assessment that has been undertaken in relation to the development proposals as outlined in this report.

2 Description of the proposed development

2.1 Description of the proposed development

2.1.1 The Proposed Development comprises the construction, operation and maintenance of the following components:

- Water Recycling Plant and associated pumping stations.
- Pipelines between Budds Farm Wastewater Treatment Works and the Water Recycling Plant.
- Pipelines between the Water Recycling Plant site and Bedhampton Springs, connecting into pipelines being delivered by Portsmouth Water between Bedhampton Springs and Havant Thicket Reservoir.
- Underground pipeline between the Water Recycling Plant site and Otterbourne Water Supply Works.
- Above Ground Plant comprising Intermediate Pumping Stations and Break Pressure Tanks located along the Pipeline between the Water Recycling Plant and Otterbourne Water Supply Works.

2.1.2 The Proposed Development would also comprise the use of the following existing infrastructure:

- Havant Thicket Reservoir for the storage of recycled water.
- The existing Eastney Long Sea Outfall, Eastney Pumping Station, and Eastney Transfer Tunnel for the release of reject water from the Water Recycling Plant.
- Pipelines and other related works that have been consented separately by Portsmouth Water for the transfer of recycled water and source water between Bedhampton Springs and Havant Thicket Reservoir.
- The construction and operation of the Proposed Development would include other works such as landscaping and environmental mitigation measures.

2.2 Intermediate pumping station G

2.2.1 This FRA specifically refers to the above-ground asset IPS-G within the Proposed Development. The site-specific development includes a new Intermediate Pumping Station and access road. Site specific design parameters can be found within the Design Principles Document (Document Reference 5.11, DCO Volume 5) . The IPS-G would be located off Titchfield Lane, Wickham, Fareham, Hampshire, PO17 5HB on land that is currently an agricultural field. The IPS-G would be owned and operated on behalf of the Applicant.

3 Flood risk to the intermediate pumping station G

3.1 Potential sources of flooding

3.1.1 Flooding can occur from a number of sources as presented in Table 3-1**Error! Reference source not found.**. Maps showing the potential sources of flooding that could impact the IPS-G are shown in Appendix A.

Table 3-1 Possible sources of flooding identified in the PPG

Source	Description
Flooding from rivers (or fluvial flooding)	River flows which exceed the flow capacity of the river channel (or culverts) can cause flooding from rivers. It can happen for example, when heavy rain falls on an already waterlogged catchment. A blockage caused by natural material or manmade objects/litter can also cause rivers to overtop their banks.
Flooding from the sea (or coastal/tidal flooding)	High tides and/or storm surges which lead to overtopping of existing defences (if any) can cause flooding from the sea.
Flooding from surface water (or pluvial flooding)	Intense rainfall that cannot soak into the ground or enter drainage systems can quickly run off the land and result in local flooding. This type of flooding is typically localised and happens very quickly after the rain has fallen.
Flooding from groundwater	Groundwater flooding occurs when water levels in the ground rise above surface elevations. It is most likely to occur in areas underlain by permeable rocks or granular layers called aquifers.
Flooding from sewers	Sewer flooding can occur when piped systems are overwhelmed by heavy rainfall, when sewers become blocked or when sewers are of inadequate capacity.
Flooding from reservoirs, canals and other artificial sources	Non-natural or artificial sources of flooding can include reservoirs, canals and lakes where water is retained above natural ground level.

3.2 Flooding from rivers and the sea

3.2.1 The PPG defines three Flood Zones as shown in Table 3-2. The following section describes the location of the IPS-G with respect to the Flood Zones, which assess the probability of flooding from fluvial and tidal sources.

Table 3-2 PPG Flood Zones

Flood Zone	Description
1	Low probability – less than 1 in 1,000 year (<0.1%) for river or sea flooding.
2	Medium probability – between 1 in 1,000 year (0.1%) and 1 in 100 year (1%) for river flooding or between 1 in 1,000 (0.1%) and 1 in 200 year for sea flooding.
3a	High probability – 1 in 100 year (1%) or greater for river flooding or 1 in 200 year (0.5%) or greater for sea flooding.
3b	The Functional Floodplain – land where water has to flow or be stored in times of flood. There is not a strict definition of the annual probability of flooding in this zone, but the following definitions should provide a starting point for consideration: • land having a 3.3% or 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).

3.2.2 According to the Flood Map for Planning provided by the EA, the Limits of Deviation for the IPS-G are located within Flood Zone 1, as shown in Appendix A. Flood Zone 1 has a Low Probability of flooding from rivers and the sea, as described in Table 3-2. The EA's National Flood Risk Assessment (NaFRA2) 'Risk of flooding from rivers and sea' data, which includes future scenarios accounting for climate change, is also shown in Appendix A. The NaFRA2 data has been obtained with which to quantify the flood risk to the IPS-G and to ensure that the new infrastructure would remain safe and operational over its intended lifetime. This data has confirmed that the IPS-G would be located in an area with a low probability of flooding from rivers and the sea.

3.3 Flooding from surface water

3.3.1 The EA's new NaFRA2 data for surface water flood risk is presented in Appendix A. The Limits of Deviation for the IPS-G are shown to have a very low surface water flood risk according to the NaFRA2 data. Despite the very low surface water

flood risk across the site, the IPS-G would be located on land that is classified as greenfield, and as such, any development at the proposed location represents a possible reduction in permeability. If left unmanaged, this increase in impermeable area could result in an increase in rates and volumes of surface water runoff leaving the site. Following guidance from the LLFA (Hampshire County Council), the NPS and the National Standards for Sustainable Drainage Systems, SuDS have been designed for the site to manage surface water flood risk for the IPS-G; this is described in Section 5 below.

3.4 Flooding from reservoirs

3.4.1 The EA's Risk of Flooding from Reservoirs map is also included in Appendix A. The Limits of Deviation for the IPS-G are not shown to be at risk of flooding from reservoir failure. Due to the high regulatory standards and strict reservoir maintenance, there is a very low risk of reservoir failure occurring. The Reservoirs Act 1975, as amended by the Flood and Water Management Act 2010, sets out stringent requirements for the design, construction, inspection, and maintenance of large, raised reservoirs (those capable of holding over 25,000 m³ of water). Reservoir undertakers must appoint qualified panel engineers to supervise construction and ongoing operation, and reservoirs must undergo independent safety inspections at least every ten years. The EA is the enforcement authority in England, responsible for ensuring compliance and taking action where safety standards are not met. Additionally, reservoirs are classified based on risk, and those deemed high-risk must have flood management plans in place, including drawdown procedures and flood preparedness measures. Reservoir flooding is extremely unlikely to occur and there has been no recorded loss of life in the UK from reservoir flooding since 1925. Given the above-mentioned regulatory controls, the residual risk of reservoir failure would remain very low.

3.5 Flooding from groundwater

3.5.1 The impacts of the IPS-G on groundwater flows and levels (and subsequently impacts to groundwater flood risk) have been considered in ES Appendix 19.3 Hydrogeological Impact Assessment, Volume II. It is anticipated that the construction phase would most likely encounter groundwater, and that dewatering measures would be required; these measures would be detailed within the Contractor's CEMP, which would be subject to approval by the relevant planning authority prior to commencement of construction. The requirement for the Contractor to prepare and implement a detailed CEMP, in accordance with the oCEMP, is secured by requirement in the DCO.

3.6 Flooding from sewers

3.6.1 In the event of a sewerage exceedance event, it is expected that flows would be conveyed in line with the topographical gradient of the site and surrounding area.

The IPS-G is not at significant risk from flooding if a sewer exceedance event were to occur, given that it is located on 'Greenfield' land, which does not contain an extensive existing sewer network. As such, this source of flood risk is not considered further.

4 National policy statement and planning practice guidance requirements

4.1 Sequential test

4.1.1 A sequential approach should be undertaken in the decision-making process to ensure that development is steered to the lowest risk areas. Avoiding flood risk through the Sequential Test is the most effective way of addressing flood risk. The Sequential Test ensures that a sequential, risk-based approach is followed to steer new development to areas with the lowest risk of flooding, taking all sources of flood risk and climate change into account. Where it is not possible to locate development in low-risk areas, the Sequential Test should go on to compare reasonably available sites:

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

4.1.2 In accordance with the NPS, NPPF and PPG, a sequential approach has been applied to the location of the IPS-G site, to steer it towards areas of lowest flood risk where reasonably practicable, taking account of all sources of flooding and climate change. The IPS-G would be located within Flood Zone 1 and at low risk of surface water flooding, as confirmed by the EA flood mapping referred to in Section 3.2 and 3.3 respectively. As such, the IPS-G is located in an area of low flood risk, both now and in the future, and therefore the Sequential Test is passed.

4.2 Flood risk vulnerability classification

4.2.1 The IPS-G would be classified as 'Water-compatible Development' under Annex 3 of the NPPF (i.e. "Water transmission infrastructure and pumping stations"). According to the PPG 'compatibility' guidance presented in Table 4-1, this means that the IPS-G would, therefore, be considered appropriate for its location within Flood Zone 1, Given the IPS-G location within Flood Zone 1, the Exception Test is not required.

Table 4-1 Flood risk vulnerability and flood zone 'compatibility'

Flood Zone	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
1	✓	✓	✓	✓	✓

Flood Zone	Flood Risk Vulnerability Classification				
2	✓	Exception Test required	✓	✓	✓
3a	Exception Test required	✗	Exception Test required	✓	✓
3b	Exception Test required	✗	✗	✗	✓

✓ Development is appropriate for flood zone

✗ Development should not be permitted

4.3 Remaining national policy statement and planning practice guidance requirements

4.3.1 To address the remainder of the NPS and PPG requirements, it will be demonstrated that:

- The development remains safe throughout its lifetime.
- Flood risk would not be increased elsewhere.
- 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.
- The development is appropriately flood resistant and resilient.
- It incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate.
- Any residual risk can be safely managed.
- Safe access and escape routes are included where appropriate, as part of an agreed emergency plan.
- The potential effects of climate change on flood risk on the development have been considered as part of the design.

Given the scale and nature of the IPS-G, the key considerations listed above form the focus of the remainder of this FRA and are presented in Section 5 below.

5 Flood risk considerations

5.1 Flood resilience, residual risk and safe operation over the development's lifetime

Remain flood resilient, safe and operational

5.1.1 The IPS-G would be located in Flood Zone 1 (low probability of flooding). As such, it would be expected to remain appropriately flood resistant and resilient and therefore safe and operational for its lifetime without further mitigation measures.

Climate Change

5.1.2 The IPS-G would be located in Flood Zone 1 (low probability of flooding). The NaFRA2 'Risk of flooding from rivers and sea' and 'Risk of flooding from surface water' data [10], which now include future scenarios accounting for climate change, also confirms the IPS-G to have a low chance of flooding from surface water and from rivers and the sea, when taking climate change into account. As such, the IPS-G would be expected to remain safe and operational for its lifetime when taking climate change into account.

The SuDS features that form the surface water management plan for the IPS-G have been designed for the 100-year plus 45% climate change event. The IPS-G is located within the East Hampshire Management Catchment for peak rainfall allowances. The 45% climate change uplift represents the upper end allowance for the 2070s epoch (development with a lifetime between 2061 and 2125) for the 1% annual exceedance rainfall event. The climate change uplift applied for the design of the SuDS features is therefore appropriate.

Any residual risk can be safely managed, and safe access and escape routes are included

5.1.3 The IPS-G would be located within Flood Zone 1, indicating a low probability of flooding from rivers and the sea. The EA Flood Map for Planning confirms that the site and all access routes remain within Flood Zone 1 for both present-day conditions and when accounting for climate change. As a result, residual flood risk is considered to be low.

5.1.4 Potential residual risks associated with extreme rainfall or exceedance of the surface water drainage system have been considered within the SuDS strategy. Safe access to and egress from the site can be maintained during flood events, with dry access available for the lifetime of the development. On this basis, it is demonstrated that residual flood risk can be safely managed and that safe access

and escape routes are provided, in accordance with the requirements of the NPS for Water Resources Infrastructure.

5.2 Not increase flood risk elsewhere

No net loss of floodplain storage

5.2.1 The IPS-G would be located in Flood Zone 1, indicating a low probability of flooding from rivers and the sea. As such, it would not result in any net loss of floodplain storage.

No impediment to flood water flows

5.2.2 The IPS-G would be located in Flood Zone 1, indicating a low probability of flooding from rivers and the sea. As such it would not result in any impediment to flood water flows.

Flood risk during construction

5.2.3 As described in ES Chapter 19 Water environment, Volume I, activities associated with the construction of new above and below-ground infrastructure have the potential to permanently alter surface and subsurface water flows and drainage patterns by:

- Altering existing surface flow paths and changing the distribution of surface drainage across development sites (e.g. through raising or lowering the existing land surface and creating new discharge locations from temporary site drainage systems, reducing infiltration and increasing surface runoff resulting from soil compaction by construction vehicles).
- Altering existing subsurface flow patterns due to changes to infiltration rates and surface flows, the installation of impermeable subsurface infrastructure, and the introduction of underground foundations or structures.
- Installing structures (e.g. temporary watercourse crossings) across existing surface drainage features that constrain their capacity to convey flows downstream and increase localised flood risk.

5.2.4 Any changes in surface and subsurface flows could therefore increase flood risk in and around the IPS-G, particularly where receptors are already at increased flood risk (e.g. within Flood Zones 2 or 3 or in areas of increased surface water flood risk). However, the IPS-G includes a range of mitigation measures that have been identified to minimise potential changes to flood risk. These are set out in the oCEMP (under WE5 and WE6) (Document reference 7.1, DCO Volume 7), and include:

- A Construction Drainage Plan would be prepared by the Contractor, once appointed, to manage the quality and quantity of construction stage drainage. Measures required to be included in the Construction Drainage Plan are set out in the Outline CEMP (under WE5 and WE6).

5.2.5 Following the application of these mitigation measures, all impacts would have a negligible adverse magnitude and an effect of minor adverse significance. This means that no significant adverse effects on water receptors are expected as a result of changes to surface and groundwater flows during construction.

5.2.6 Contractors would be advised to adhere to guidance such as the CIREG (Construction Insurance Risk Engineers Group) Guide to Managing Flood Risk During Construction [11], or other similar and appropriate industry-standard guidance. To manage flood risk during construction, the contractor shall prepare and maintain a Construction Drainage Plan. The contractor shall monitor weather forecasts and flood warnings, maintain emergency materials and equipment, and enact a Pre-Flood Event Action List when severe weather is forecast. Residual flood risk should be reduced to As Low As Reasonably Practicable (ALARP).

Surface water runoff and the incorporation of SuDS

5.2.7 The EA's NaFRA2 data for surface water flood risk is presented in Appendix A. The site is shown to have a low surface water flood risk. Despite the low surface water flood risk, the IPS-G would be located on land that is classified as greenfield, as such, any development at the proposed location represents a possible reduction in permeability. If left unmanaged, this increase in impermeable area could result in an increase in rates and volumes of surface water runoff leaving the site. Following guidance from the LLFA (Hampshire County Council), the NPS for Water Resources Infrastructure and the National Standards for SuDS, SuDS have been designed for the site to manage surface water flood risk for the IPS-G.

5.2.8 SuDS are designed to maximise the benefits of surface water management through four main categories, namely: water quality, water quantity, amenity and biodiversity [8]. SuDS mimic natural processes to promote sustainable development and aim to manage surface water on site by attenuating runoff and treating it before it enters natural water bodies and the environment.

5.2.9 SuDS have been indicatively designed at an outline level for the IPS-G, taking account of the operational requirements of the proposed site and identified spatial constraints. The indicative SuDS proposals define the drainage principles for the site, including the proposed management train, discharge rates and long-term storage requirements. Details of the outline SuDS strategy and its compliance with relevant national and local standards are presented in the accompanying SuDS

Strategy within ES Appendix 19.1 Flood Risk Assessment – 8 of 8 documents, Volume II.

6 Conclusions

6.1.1 This document has presented the findings of a Flood Risk Assessment undertaken to accompany a DCO application for a new Intermediate Pumping Station as part of the wider Proposed Development. The IPS-G would be located off Titchfield Lane, Wickham, Fareham, Hampshire, PO17 5HB and would be owned and operated on behalf of the Applicant.

6.1.2 The Applicant produced a Water Resources Management Plan (2020 – 2070) in 2019 (WRMP19), which outlined proposed long-term solutions to address an identified large-scale supply demand deficit in Hampshire from 2027 and to protect the unique chalk rivers in Hampshire, the River Test and River Itchen. This included a selection of long-term and large-scale water resource solutions, one of which was the Proposed Development, which has since become the selected option to play a major role in making up the shortfall in water supply across the Hampshire supply area. The draft WRMP24 and revised draft WRMP24 reaffirmed the need for Proposed Development as the selected option required to address the continuing water resource deficit as identified in the WRMP19.

6.1.3 On the basis of the EA Flood Map for Planning, the IPS-G is shown to be located in Flood Zone 1 and therefore has a low risk of flooding from rivers and the sea. The EA's NaFRA2 'Risk of flooding from rivers and sea' and 'Risk of flooding from surface water' data, which now include future scenarios accounting for climate change, have also been utilised. The NaFRA2 data has been obtained to quantify the flood risk to the IPS-G and to ensure that the new infrastructure would remain safe and operational over its intended lifetime. This data has confirmed that the IPS-G would have a low chance of flooding from surface water and would be located in an area with a low chance of flooding from rivers and the sea. The IPS-G would, however, be located on existing greenfield land and therefore a surface water management strategy for the IPS-G has been produced

6.1.4 As the LLFA for the proposed site, Hampshire Council requires that SuDS be considered in all surface water management strategies. The NPS for Water Resources Infrastructure also requires for SuDS to be considered for surface water management. A surface water management strategy for the IPS-G has therefore been developed that utilises SuDS to ensure that the IPS-G does not result in an increase in rates or volumes of surface water leaving the site while also mimicking natural processes. The LLFA surface water management guidance has been followed, with reference to the NPS, PPG, the National Standards for SuDS and best practice information as set out in the Non-Statutory Technical Guidance and the CIRIA SuDS Manual (C753).

6.1.5 This FRA confirms that the IPS-G would meet the requirements of the NPS, NPPF and PPG.

6.1.6 Specifically, this FRA has demonstrated that:

- The IPS-G would be located within Flood Zone 1, both now and under future scenarios accounting for climate change
- The IPS-G would have safe access and egress routes
- The IPS-G would comprise 'Water-compatible Development' land use, suitable for its location within Flood Zone 1
- The IPS-G has passed the Sequential Test and the Exception Test is not required
- The IPS-G would remain appropriately flood resistant and resilient and therefore safe and operational in times of flooding over the duration of its intended lifetime and would not involve an increase in the number of staff working within a flood risk area
- The IPS-G would not result in any loss of floodplain storage capacity or reduce floodplain conveyance
- The IPS-G incorporates SuDS and would not result in an increase in the volume or rate of surface water runoff leaving the site

6.1.7 In summary, this FRA has demonstrated that the IPS-G is appropriate for its location, would remain operational in times of flooding, and would not result in an increase in off-site flood risk.

7 References

[1] Environment Agency, “Flood Map for Planning,” 2025. [Online]. Available: https://flood-map-for-planning.service.gov.uk/.

[2] Ministry of Housing, Communities and Local Government, “National Planning Policy Framework (NPPF),” 2024. [Online]. Available: https://www.gov.uk/government/publications/national-planning-policy-framework--2.

[3] Department for Environment, Food & Rural Affairs, “National Policy Statement for Water Resources Infrastructure,” UK Government, 2025.

[4] Ministry of Housing, Communities and Local Government, “Planning Practice Guidance (PPG) – Flood Risk and Coastal Change,” September 2025. [Online]. Available: https://www.gov.uk/guidance/flood-risk-and-coastal-change.

[5] Department for Environment, Food & Rural Affairs (DEFRA), “LiDAR Composite Digital Terrain Model (DTM) – 1m Resolution,” 2022. [Online]. Available: https://environment.data.gov.uk/DefraDataDownload/?Mode=survey.

[6] Hampshire County Council, “Planning Guidance for Developers: Catchment Management Plans and National Standards for SuDS,” Hampshire County Council, Winchester, 2025.

[7] F. &. R. A. (. Department for Environment, “National Standards for Sustainable Drainage Systems (SuDS),” 2025. [Online]. Available: https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds.

[8] Construction Industry Research and Information Association (CIRIA), “The SuDS Manual (C753),” 2015. [Online]. Available: https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C753.

[9] British Standards Institution (BSI), “BS 8533:2017 – Assessing and Managing Flood Risk in Development,” 2017. [Online]. Available: https://knowledge.bsigroup.com/products/assessing-and-managing-flood-risk-in-development-code-of-practice-1.

[10] Environment Agency, “National Flood Risk Assessment (NaFRA2) – Risk of Flooding from Rivers, Sea and Surface Water,” 2025. [Online]. Available: https://www.gov.uk/check-long-term-flood-risk.

[11] Construction Insurance Risk Engineers Group, “The CIREG Guide to Managing Flood Risk During Construction,” Construction Insurance Risk Engineers Group, 2023.

[12] Planning Inspectorate, “Nationally Significant Infrastructure Projects: Terms commonly used in the process,” 2025. [Online]. Available: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-terms-commonly-used-in-the-process?utm_medium=email&utm_campaign=govuk-notifications-topic&utm_source=0f8aa6eb-cfc8-41a1-af95-a3404f6622b5&utm_content=daily#development-consent-ord.

[13] UK Parliament, “The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017,” 2023. [Online]. Available: https://www.legislation.gov.uk/uksi/2017/572/introduction.

[14] Environment Agency, Natural Resources Wales and Office for Water Services, “Water resources planning guideline,” 2023. [Online]. Available: https://www.gov.uk/government/publications/water-resources-planning-guideline/water-resources-planning-guideline.

[15] Ministry of Housing, Communities and Local Government, “National Planning Policy Framework,” 2025. [Online]. Available: https://www.gov.uk/government/publications/national-planning-policy-framework--2.

[16] GB Non-native Species Secretariat, “The Great Britain Invasive Non-Native Species Strategy: 2023 to 2030,” 2023. [Online]. Available: The Great Britain Invasive Non-Native Species Strategy: 2023 to 2030.

[17] UK Parliament, “Water Resources Act 1991,” 2020. [Online]. Available: https://www.legislation.gov.uk/ukpga/1991/57/introduction.

[18] UK Parliament, “Planning Act 2008,” 2023. [Online]. Available: https://www.legislation.gov.uk/ukpga/2008/29/introduction.

[19] CIRIA, “Remediation of contaminated soils,” No date. [Online]. Available: https://www.ciria.org/SOILCOP/SOILCOP/Knowledgebase/Remediation_of_contaminated_soils.aspx.

[20] Department for Environment, Food and Rural Affairs, "Water company drought plan guideline, 2025," 2025. [Online]. Available: https://www.gov.uk/government/publications/water-company-drought-plan-guideline-2025/water-company-drought-plan-guideline-2025.

[21] UK Parliament, "Wildlife and Countryside Act 1981," 2025. [Online]. Available: https://www.legislation.gov.uk/ukpga/1981/69.

[22] European Union, *Council Directive 92/43/EEC of 21 May 1992 on the on the conservation of natural habitats and of wild fauna and flora,* 2025.

[23] European Union, *Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (Codified version),* 2019.

[24] UK Parliament, "The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017," 2022. [Online]. Available: https://www.legislation.gov.uk/uksi/2017/407/introduction/made.

[25] UK Parliament, *The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015.*

[26] Portsmouth City Council, "Surface Water Management Plan," 2019. [Online]. Available: https://www.portsmouth.gov.uk/wp-content/uploads/2020/04/Surface-water-management-plan.pdf.

[27] Hampshire County Council, "SURFACE WATER CHECKLIST GUIDANCE," 2023. [Online]. Available: https://documents.hants.gov.uk/flood-water-management/SurfaceWaterChecklistGuidance.pdf.

[28] Hampshire County Council, " Local Flood and Water Management Strategy," 2019. [Online]. Available: https://democracy.hants.gov.uk/documents/s40463/Appendix%201.pdf.

[29] Hampshire County Council, "Local Flood and Water Management Strategy," 2019. [Online]. Available: https://democracy.hants.gov.uk/documents/s40463/Appendix%201.pdf. [Accessed 15 April 2026].

[30] British Standards Institution (BSI), "BS 8533:2017 – Assessing and Managing Flood Risk in Development," 2017. [Online]. Available: https://knowledge.bsigroup.com/products/assessing-and-managing-flood-risk-in-development-code-of-practice-1. [Accessed 15 April 2026].

[31] Department for Environment, Food & Rural Affairs (DEFRA), "LiDAR Composite Digital Terrain Model (DTM) – 1m Resolution," 2022. [Online]. Available: https://environment.data.gov.uk/DefraDataDownload/?Mode=survey. [Accessed 15 April 2026].

[32] Environment Agency, "National Flood Risk Assessment (NaFRA2) – Risk of Flooding from Rivers, Sea and Surface Water," 2025. [Online]. Available: https://www.gov.uk/check-long-term-flood-risk. [Accessed 15 April 2026].

[33] F. &. R. A. (. Department for Environment, "National Standards for Sustainable Drainage Systems (SuDS)," 2025. [Online]. Available: https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds. [Accessed 30 July 2025].

[34] Environment Agency, "Flood Map for Planning," 2025. [Online]. Available: https://flood-map-for-planning.service.gov.uk/. [Accessed 15 April 2026].

[35] Ministry of Housing, Communities and Local Government, "National Planning Policy Framework (NPPF)," 2025. [Online]. Available: https://www.gov.uk/government/publications/national-planning-policy-framework--2. [Accessed 7 February 2025].

[36] Department for Environment, Food & Rural Affairs, "National Policy Statement for Water Resources Infrastructure," UK Government, 2025.

[37] Ministry of Housing, Communities and Local Government, "Planning Practice Guidance (PPG) – Flood Risk and Coastal Change," 2025. [Online]. Available: https://www.gov.uk/guidance/flood-risk-and-coastal-change. [Accessed 18 September 2025].

[38] Construction Insurance Risk Engineers Group, "The CIREG Guide to Managing Flood Risk During Construction," Construction Insurance Risk Engineers Group, 2023.

[39] Construction Industry Research and Information Association (CIRIA), "The SuDS Manual (C753)," CIRIA, London, 2015.

[40] Hampshire County Council, "Planning Guidance for Developers: Catchment Management Plans and National Standards for SuDS," Hampshire County Council, Winchester, 2025.

[41] Portsmouth City Council, “Portsmouth Surface Water Management Plan - 2025 Update Report,” Portsmouth City Council, Portsmouth, 2025.

8 Glossary

Term	Definition
Above Ground Plant (AGP)	This collectively refers to the Intermediate Pumping Stations and Break Pressure Tanks.
As Low As Reasonably Practicable (ALARP)	Involves weighing a risk against the trouble, time and money needed to control it. Thus, ALARP describes the level to which we expect to see risks controlled.
Amenity	Refers to the qualities of a place that make it enjoyable and attractive to users of an area.
Applicant	Southern Water Services Limited.
Autumn 2025 Consultation	The statutory, targeted consultation held in Autumn 2025 to consult on eight further design refinements to the Proposed Development made in response to feedback from the Spring 2025 Consultation, further investigations, surveys and assessments, and design development.
Baseline	The current environmental and social conditions within the Order Limits or within a study area. This provides a benchmark against which changes arising from the Proposed Development are assessed for each relevant assessment.
Biodiversity	The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.
Biodiversity Net Gain (BNG)	This is an approach to development that delivers measurable improvements that delivers a net gain for biodiversity by creating or enhancing habitats.
Break Pressure Tank (BPT)	BPT are anticipated to be required at high points along the pipeline route. Water is pumped to BPTs, where it then flows onwards using gravity from the tank. This reduces the amount of energy required to transfer water. BPTs reduce the overall maximum pressure in the pipeline system associated with changes in flow rate as a result of topography.
Budds Farm pumping station	A pumping station located at Budds Farm Wastewater Treatment Works to support the transfer of treated wastewater to the Water Recycling Plant site.
Budds Farm Wastewater Treatment Works (WTW)	An existing Southern Water site that treats wastewater from the Applicant's customers prior to release into the Solent from the Eastney Long Sea Outfall. The Proposed Development would utilise highly treated wastewater from the Budds Farm WTW to produce recycled water at the Water Recycling Plant site. Reject water would be transferred from the Water Recycling Plant back to Budds Farm WTW where a connection would be made for onwards

Term	Definition
	transfer to the existing Eastney Transfer Tunnel, Eastney Pumping Station and Eastney Long Sea Outfall for discharge into the Solent. Chemical filter washing at the Water Recycling Plant site would generate process waste that would be discharged via the foul sewer network to Budds Farm WTW for treatment.
Capacity	The maximum traffic flow that a road or junction can accommodate without causing unreasonable delay.
'Classic' operation scenario	This scenario refers to the maintenance of water levels in Havant Thicket Reservoir, in accordance with Portsmouth Water's existing planning permission, through the use of spring water inputs from Bedhampton and Havant Springs only.
Climate	The general weather conditions prevailing over a long period of time. Climate change will see trends in the climate conditions changing (seasonal averages and extremes).
Construction compounds	Temporary areas required to facilitate the construction of the Proposed Development.
Construction waste	Consists of all waste produced directly or indirectly during the construction process, including excavated material displaced during this process that no longer has a use.
The Contractor	The Applicant or a person appointed by the Applicant or by anyone else having the benefit of part or all of the Development Consent Order to carry out any construction element of the Proposed Development or to operate the Proposed Development.
Cumulative effects	Effects from the interrelationship between the Proposed Development with other committed developments.
Cut and fill	Cut and fill is a common earthworks technique used in construction and civil engineering projects. It involves the removal ('cut') of soil or material from higher areas of a site and the placement ('fill') of that material into lower areas to create a level surface suitable for development.
Design principles	Design principles which reflect the design approach adopted for the Proposed Development and as set out in the Design Principles Document (Document reference 5.11, DCO Volume 5) and will control the detailed design post-consent in accordance with Schedule 2 of the draft Development Consent Order (Document reference 3.1, DCO Volume 3).
Development Consent Order (DCO)	A statutory order which provides consent for a project and means that a range of other consents, such as planning permission and listed building consent, will not be required. A DCO can also include powers authorising the compulsory acquisition and temporary possession of land and rights over land which is the subject of an application. A draft DCO (Document reference 3.1, DCO Volume 3) is submitted by the applicant as part of its application [12].

Term	Definition
Drinking water	Water that has been treated to strict regulatory standards, ready for supply to domestic and non-domestic customers as drinking water.
Drought conditions	Droughts are naturally occurring events and are typically characterised by a prolonged period of abnormally low rainfall, leading to a shortage of water.
Eastney Long Sea Outfall (LSO)	An existing Southern Water infrastructure component used to release treated wastewater from Budds Farm Wastewater Treatment Works. No works to the Eastney LSO are proposed as part of the Proposed Development; however, reject water produced from the Water Recycling Plant will be released from the Eastney LSO using the Eastney Transfer Tunnel and Eastney Pumping Station.
Eastney Pumping Station (PS)	An existing Southern Water infrastructure component. No works are proposed to it as part of the Proposed Development. The Eastney PS receives treated wastewater flows, via gravity, from Budds Farm Wastewater Treatment Works and pumps it out via the Eastney Long Sea Outfall. This pumping station also receives storm flows from the Eastney catchment area. Reject water from the proposed Water Recycling Plant will be released from the Eastney Long Sea Outfall using the Eastney PS and Eastney Transfer Tunnel.
Eastney Transfer Tunnel (TT)	An existing Southern Water infrastructure component. The Eastney TT connects the Budds Farm Wastewater Treatment Works final effluent channel via a shaft located at Budds Farm Wastewater Treatment Works to the Eastney Pumping Station to release treated wastewater. Reject water from the Water Recycling Plant will be released from the Eastney Long Sea Outfall using the Eastney Pumping Station and Eastney TT. A new connection point to the Eastney TT, located at Budds Farm Wastewater Treatment Works, is required. No additional works to the Eastney TT are proposed as part of the Proposed Development.
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Environmental Impact Assessment (EIA)	EIA is a process for identifying the likely significant environmental effects (beneficial and adverse) of a Proposed Development to inform the decision-making process by the Secretary of State when determining an application for a Development Consent Order.
Environmental Impact Assessment (EIA) Regulations	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 [13]; the Regulations which

Term	Definition
	this Environmental Statement has been prepared in accordance with.
Enhancement	Measures taken to achieve a benefit, which are unrelated to an adverse impact or which go beyond that required to mitigate/compensate for an impact. For example, restoration of a degraded habitat to leave it in a measurably better state than it was before the Proposed Development or other interventions to leave a positive legacy for the community.
Environmental Statement (ES) (DCO Volume 6)	A document reporting the findings of the Environmental Impact Assessment which describes the likely significant effects arising from the Proposed Development on the environment and measures proposed to mitigate likely significant effects.
Extreme drought	A drought event that occurs every 1-in-500 years, or a 0.2% chance of occurring in any given year [14].
Flood Risk Assessment (FRA) (Environmental Statement Appendix 19.1 Flood Risk Assessment, Volume II (Document reference 6.2, DCO Volume 6))	A technical report that evaluates the potential for flooding from all sources (e.g. fluvial, coastal, surface water, groundwater, reservoir and sewers) on a development site and proposes measures to manage and mitigate those risks. It is a crucial part of the planning process, ensuring that new developments are located and designed in a way that minimises the potential for flood damage and protects people and property both on the site and in the wider area. A FRA (Environmental Statement Appendix 19.1 Flood Risk Assessment, Volume II (Document reference 6.2, DCO Volume 6)) is submitted by the Applicant as part of the Development Consent Order application.
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% or greater annual probability of sea flooding.
Flood Zone 3b	Comprises land where water from rivers or sea has to flow or be stored in times of flood. Functional floodplain will normally compromise: Normally land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively, or Land that is designed to flood, even I it would only food in more extreme events (such as 0.1% annual probability of flooding).
Functionally Linked Land	Land or sea beyond the boundary of a National Site Network site which can ecologically support the populations

Term	Definition
	for which the site was designated or classified and fulfil its functions.
Green Infrastructure	The National Planning Policy Framework [15] defines green infrastructure as *"a network of multi-functional green and blue spaces and other natural features, urban and rural, which is capable of delivering a wide range of environmental, economic, health and wellbeing benefits for nature, climate, local and wider communities and prosperity."* For the purpose of the Proposed Development, Green Infrastructure focus areas have been identified on the Indicative Environmental Masterplan (appended to the Design Approach Document (Document Reference 5.12, DCO volume 5)) which shows areas where there are opportunities to enhance the wider network.
Hampshire Water Transfer and Water Recycling Project	This is the name of the Proposed Development, that is the Strategic Resource Option being delivered as part of the Water For Life Hampshire programme. A water supply scheme comprising a combination of both water transfer and water recycling technology that would play a major role in making up the shortfall in water supply across the Hampshire supply area, especially in a drought.
Havant Thicket Reservoir	The Havant Thicket Reservoir is a development under construction by Portsmouth Water that has planning permission granted by the relevant local planning authorities. Following the transfer of recycled water from the Water Recycling Plant site, the recycled water would be combined with water contained within the Havant Thicket Reservoir. The Proposed Development would use the Havant Thicket Reservoir for the storage of recycled water, before transfer to Otterbourne Water Supply Works.
Impact	A change that is caused by an action/activity associated with the Proposed Development.
Invasive Non-Native Species (INNS)	The Great British Non-Native Species Secretariat defines INNS as *"any non-native animal or plant that has the ability to spread causing damage to the environment, the economy, our health and the way we live"* [16].
Invasive Non-Native Species (INNS) Treatment at Otterbourne Water Supply Works	Infrastructure to be located at Otterbourne Water Supply Works to ensure the addition of source water transferred from Havant Thicket Reservoir would not introduce pathways for the spread of INNS.
Leakage (socio-economic)	The loss or outflow of potential economic benefits, jobs, or skilled workers from a specific area, sector, or group - often to the detriment of the local or intended beneficiaries.

Term	Definition
Light Detection and Ranging (LiDAR)	A survey detection system based on radar principles using light. It makes 3-dimensional representations of areas of the Earth's surface.
Limits of Deviation for Above Ground Plant	The 'Limits of Deviation for Above Ground Plant' represents the extent of the area within which the Above Ground Plant would be located. These are shown in the Design Principles Document (Document reference 5.11, DCO Volume 5). The 'Limits of Deviation for Above Ground Plant' do not represent the footprint of the Above Ground Plant.
Limits of Deviation for Pipeline	The 'Limits of Deviation for Pipeline' represent the area within the Order Limits that the pipeline could be permanently located once constructed. These are shown on the Works plans (Document reference 2.3, DCO Volume 2). The 'Limits of Deviation for Pipeline' does not represent the construction working area for the pipeline.
Main River	Watercourses designated under the Water Resources Act 1991 [17] as 'main' are usually larger rivers and streams that are shown on the Environment Agency's Statutory Main River map. The Environment Agency has permissive powers, but not a duty, to carry out maintenance, improvement or construction work on designated Main Rivers to manage flood risk.
Maximum operation	The period when the Proposed Development is operating at maximum flows. During maximum operation, the Water Recycling Plant would produce 60 Mega litres per day (Ml/d) of recycled water, and 90Ml/d of source water would be transferred from Havant Thicket Reservoir to Otterbourne Water Supply Works.
Minimum operation	A minimum operation is required to ensure that the Proposed Development is in regular working use for when higher outputs are required. During minimum operation, the Water Recycling Plant would have an output of approximately 10 Mega litres per day (Ml/d).
Mitigation	Measures intended to avoid, prevent, reduce and, where possible, offset likely significant adverse environmental effects. Measures follow the mitigation hierarchy as described in section 5.3 of Environmental Statement Chapter 5 EIA approach and methodology, Volume I (Document reference 6.1, DCO Volume 6).
Monitoring	Measures to ensure the systematic and ongoing collection, analysis and evaluation of data related to the implementation and performance of a development. Monitoring can be undertaken to monitor conditions in the future to verify any environmental effects identified by the Environmental Impact Assessment, the effectiveness of mitigation or enhancement measures or ensure remedial action are taken should adverse effects above a set threshold occur. All monitoring measures adopted by the

Term	Definition
	Proposed Development are reflected in Environmental Statement Appendix 5.5 Commitments Register, Volume II (Document reference 6.2, DCO Volume 6).
Nationally Significant Infrastructure Projects (NSIPs)	NSIPs are large scale major development projects in England or Wales which require permission under the Planning Act 2008 [18]. Projects are only defined as nationally significant if they meet the relevant threshold set out in the Planning Act 2008 [12].
Ofwat	Ofwat (The Water Services Regulation Authority) is a non-ministerial government department that is the regulator of the water and wastewater services industry in England and Wales.
Order Limits	The 'Order Limits' represent the extent of the area within which the Proposed Development, authorised by the Development Consent Order, may be carried out, including the permanent and temporary land needed for construction, operation and maintenance activities. The Order Limits are shown on the Works plans (Document reference 2.3, DCO Volume 2) and Land plans (Document reference 2.2, DCO Volume 2).
Ordinary Watercourse	An Ordinary Watercourse is any channel that water flows through that is not designated as an Environment Agency Main River. Lead local flood authorities and internal drainage boards have responsibility for Ordinary Watercourses.
Otterbourne Water Supply Works (WSW)	An existing Southern Water site which abstracts water from river Itchen and ground sources, and will continue to do in certain circumstances after the Proposed Development. The Proposed Development would transfer source water from Havant Thicket Reservoir to Otterbourne WSW. The source water would be treated to strict regulatory standards at Otterbourne WSW prior to being supplied to customers.
Operational Environmental Management Plan (OEMP) (Document reference 7.7, DCO Volume 7)	Provides a framework of commitments for the operational stage of the Proposed Development. These include general operational practices which have the potential to have an environmental impact, in addition to Proposed Development specific environmental mitigations. The measures contained in the OEMP are secured by a requirement in Schedule 2 to the Development Consent Order.
Outline Construction Environmental Management Plan (CEMP) (Document reference 7.1, DCO Volume 7)	Contains identified topic specific mitigation measures to be adopted during construction, and specifies plans and method statements to be produced by the Contractor to avoid and reduce environmental effects. Mitigation measures are generally tertiary mitigation, although some secondary mitigation measures are also included. The measures contained in the Outline CEMP are secured by a requirement in Schedule 2 to the Development

Term	Definition
	Consent Order. Detailed CEMP(s) will be produced and submitted for approval in accordance with the corresponding requirement in Schedule 2 to the draft Development Consent Order (Document reference 3.1, DCO Volume 3).
Permanent access	Identifies locations where permanent access will be taken from the highway network for the purpose of operation of the Proposed Development.
Pipeline between the Water Recycling Plant site and Otterbourne Water Supply Works	An underground pipeline approximately 35 kilometres long would transfer approximately 90 Mega litres per day of source water at maximum operation, from the Water Recycling Plant site to Otterbourne Water Supply Works. Above Ground Plant would support the transfer of water from the Water Recycling Plant site to Otterbourne Water Supply Works. Due to the length of the pipeline, it has been divided into sections: Section D: The Water Recycling Plant site to Portsdown Hill Section E: Portsdown Hill to Boarhunt Section F: Boarhunt to Crockerhill Section G: Crockerhill to Wickham Section H: Wickham to Shedfield Section J: Shedfield to the River Hamble Section K: The River Hamble to Lower Upham Section L: Lower Upham to Brambridge Section M: Brambridge to Otterbourne Water Supply Works
Pipelines between Budds Farm Wastewater Treatment Works and the Water Recycling Plant site	Two pipelines between Budds Farm Wastewater Treatment Works and the Water Recycling Plant site: one to transfer treated wastewater from Budds Farm Wastewater Treatment Works to the Water Recycling Plant site and the other to transfer reject water from the Water Recycling Plant site to Budds Farm Wastewater Treatment Works. The Pipelines would connect to the existing treated wastewater release infrastructure and the reject water would be released via the existing Eastney Long Sea Outfall using the existing Eastney Transfer Tunnel and Eastney Pumping Station. The development required to connect into the existing treated wastewater infrastructure would form part of this component of the Proposed Development. The Pipelines between Budds Farm Wastewater Treatment works and the Water Recycling Plant site would be installed on the same route under the Hermitage Stream and Harts Farm Way and would be approximately 700m in length. The Pipelines between Budds Farm Wastewater Treatment works and the Water Recycling Plant site would transfer a maximum flow of approximately 82 Mega litres per day

Term	Definition
	(Ml/d) of treated wastewater to the Water Recycling Plant site. The pipeline from the Water Recycling Plant site to Budds Farm Wastewater Treatment Works would be sized for the same transfer capacity of approximately 82Ml/d as it may be necessary to return the maximum volume of water being treated back to Budds Farm Wastewater Treatment Works.
Pipelines between the Water Recycling Plant site and Bedhampton Springs	The Pipelines would transfer recycled water from the Water Recycling Plant site to Bedhampton Springs, and source water from Bedhampton Springs back to the Water Recycling Plant site (before transfer to Otterbourne Water Supply Works). The Pipelines, connecting to pipelines being delivered by Portsmouth Water between Bedhampton Springs and Havant Thicket Reservoir, would enable the transfer at maximum operation of approximately 60 Mega litres per day (Ml/d) of recycled water from the Water Recycling Plant site to Havant Thicket Reservoir and approximately 90Ml/d of source water from Havant Thicket Reservoir to the Water Recycling Plant site, for onward transfer to Otterbourne Water Supply Works.
'Post-WRP' operation scenario	This scenario is used to describe an operational scenario following commissioning of the Proposed Development and the release of recycled water into Havant Thicket Reservoir.
Preferred pipeline corridor	The preferred pipeline corridor was selected as part of the scheme development process which considered a number of pipeline corridor and Above Ground Plant options. The preferred pipeline corridor was consulted on at the Summer 2022 Consultation. Additional information is provided within the Scheme Development Report (Document reference 5.10, DCO Volume 5).
Principal Aquifer	Rocks or soils that provide significant quantities of water and can support water supply and/or baseflow to rivers, lakes and wetlands on a strategic scale. They typically have a high intergranular and/or fracture permeability, meaning they usually provide a high level of water storage.
Process waste	Process waste is chemical waste that is removed from the water recycling process.
Project of national significance	Large scale development that has been directed by the Secretary of State to be treated as development for which a Development Consent Order is required under Section 35 of the Planning Act 2008 [18] due to being a project of national significance.
Proposed Development	This refers to the Hampshire Water Transfer and Water Recycling Project, as described in Environmental Statement Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6).

Term	Definition
Public Consultation 2021	The consultation undertaken in early 2021 which consulted on the 75Ml/d desalination plant at Fawley as part of the Water Resources Management Plan 2019 Preferred Strategy and introduced alternative water transfer and water recycling options to consultees.
River Basin Management Plan	River basin management plans set the legally binding locally specific environmental objectives that underpin water regulation (such as permitting) and planning activities. They provide a stable planning base for economic development.
Receptor	An individual, group or asset that receives an impact of effect.
Recycled water	Purified water that has been produced by taking treated wastewater and removing remaining impurities using advanced treatment techniques.
Reject water	During the water recycling process, reject water is produced. Reject water is water containing impurities removed from the treated wastewater and released using the existing Eastney Transfer Tunnel and Eastney Long Sea Outfall.
Release from the Eastney Long Sea Outfall (LSO)	The existing Eastney LSO releases treated wastewater from Budds Farm Wastewater Treatment Works via the existing Eastney Transfer Tunnel and Eastney Pumping Station. The Proposed Development would utilise the Eastney LSO for the release of reject water produced by the Water Recycling Plant site. During maximum operation approximately 22 Mega litres per day (Ml/d) of reject water would be released from the Eastney LSO. During minimum flow operation approximately 4Ml/d of reject water would be released from the Eastney LSO.
Remediation	An action taken to break or modify the source-pathway-receptor (contaminant) linkage so that the risks are removed or reduced to an acceptable level for the land use under consideration [19].
Residual effects	Remaining effects of the Proposed Development following the implementation of any secondary (foreseeable) mitigation.
Secondary A aquifer	These are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.
Secondary B aquifer	These are mainly lower permeability layers that may store and yield limited amounts of groundwater through characteristics like thin cracks (called fissures) and openings or eroded layers.
Secondary undifferentiated aquifer	This has been assigned in cases where it has not been possible to attribute either a Secondary A or B aquifer to the

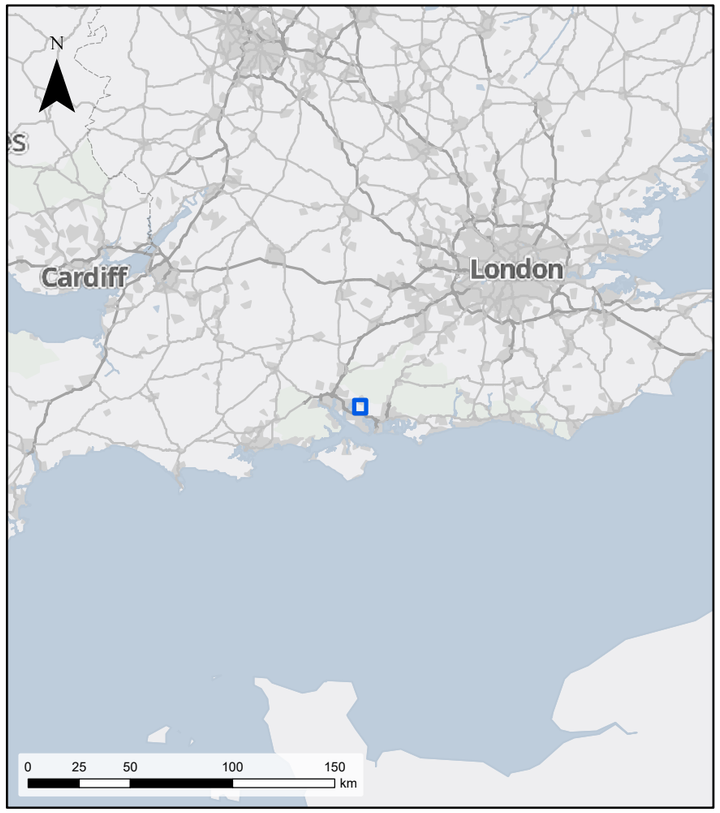
Term	Definition
	soil type due to the variable characteristics. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.
Sensitivity	The extent to which a receptor is likely to accept or respond to a change.
Severe drought	A drought event that occurs every 1-in-200 years, or a 0.5% chance of occurring in any given year [20].
Significance	Significance is assessed by comparing the magnitude of an impact with a receptor's value, sensitivity, permanence or reversibility, in an assessment-specific matrix. The criteria in this matrix can be pre-set, allowing for objective impact assessment rather than subjective impact evaluation.
Site of Importance for Nature Conservation (SINC)	An important wildlife site which contributes to the ecological network in Hampshire. To safeguard these sites, they are designated as non-statutory designated SINCs. SINCs are also known nationally as Local Wildlife Sites. They represent a legacy of good management and rely upon continued stewardship by landowners.
Site of Special Scientific Interest (SSSI)	A nationally site designated by Natural England as an area of special interest by reason of any of its flora, fauna, geological or physiographical features. SSSI are legally protected under the Wildlife and Countryside Act 1981 (as amended) [21].
Source Protection Zone 1 (SPZ1)	Inner protection zone - defined as the 50-day travel time from any point below the water table to the abstraction source. This zone has a minimum radius of 50m radius from the source, whichever is larger.
Source Protection Zone 1c (SPZ1c)	Inner protection zone - defined as the 50-day travel time from any point below the water table to the abstraction source. This zone has a minimum radius of 50m and is where there is protective geology cover, such as clay.
Source Protection Zone 2 (SPZ2)	Outer protection zone - defined by a 400-day travel time. The zone will default to a minimum radius of 250m or 500m, depending on the size of the abstraction, if the 400-day travel time zone is smaller.
Source Protection Zone 2c (SPZ2c)	Outer protection zone – defined by a 400-day travel time. The zone will default to a minimum radius of 250m or 500m, depending on the size of the abstraction, if the 400-day travel time zone is smaller, and is where there is a protective geology cover of low permeability sat above a unit of high permeability.
Source Protection Zone 3 (SPZ3)	Source catchment protection zone - defined as the area around an abstraction source within which all groundwater recharge is presumed to be discharged at the abstraction source.

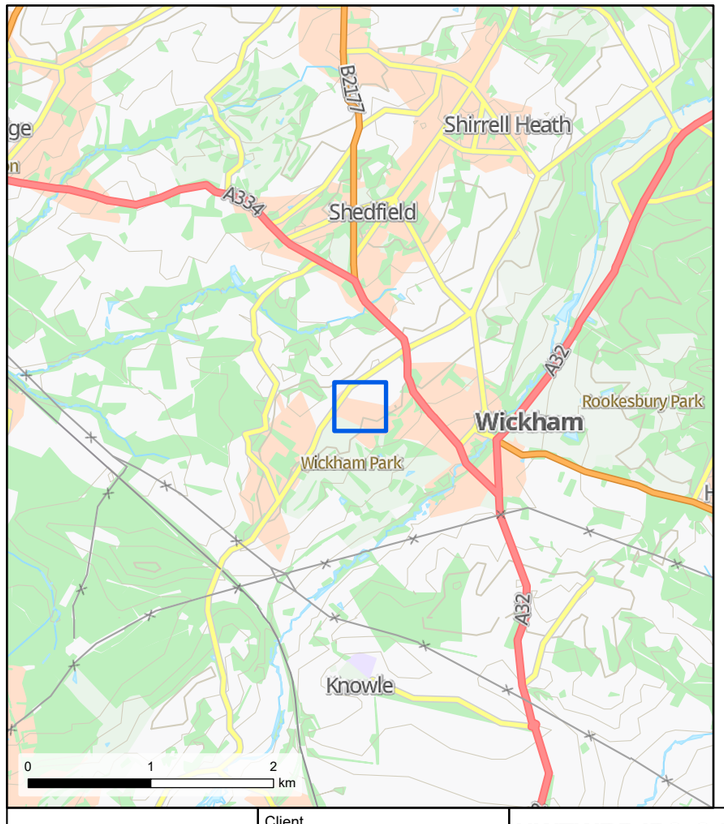
Term	Definition
Source water	Water that is used as a source for drinking water. For the Proposed Development, this water is treated to strict regulatory standards at the Otterbourne Water Supply Works before being supplied to customers.
Source-pathway-receptor linkage	For a risk to arise there must be hazard that consists of a 'source' (e.g. high rainfall); a 'receptor' (e.g. people, environment); and a pathway between the source and the receptor (e.g. flooding).
South East England	Comprising counties of Berkshire, Buckinghamshire, East Sussex, Hampshire, Isle of Wight, Kent, London, Oxfordshire, Surrey and West Sussex.
Special Area of Conservation (SAC)	Area(s) of protected habitat(s) and species as defined in the European Union Habitats Directive (92/43/EEC) [22].
Special Protection Area (SPA)	A designated area for birds under the European Union Directive on the Conservation of Wild Birds (2009/147/EC) [23].
Spring 2025 Consultation	The statutory consultation held in Spring 2025 to consult on water quality modelling updates, and design refinements made to the Proposed Development in response to feedback from the Summer 2024 Consultation and ongoing scheme development.
Spring 2026 Consultation	The statutory, targeted consultation held in Spring 2026 to consult on one further design refinement at Otterbourne Water Supply Works as a result of additional works and treatment required.
Study area	A defined spatial scope (e.g. the area which may be impacted) for each topic assessment.
Sustainable Drainage System (SuDS)	A Sustainable Drainage System that generally mimic the natural drainage patterns of an undeveloped site allowing infiltration into the ground (where feasible) and controlling outflow rates from a proposed development. This reduces the impact and risk of flooding and can provide additional benefits such as pollution control, increased biodiversity, and provision of water-based amenity space.
Summer 2022 Consultation	The non-statutory consultation undertaken in summer 2022 which consulted on the Proposed Development, including the process undertaken to select the Proposed Development and the process undertaken to identify the preferred pipeline corridor, Water Recycling Plant site, and emerging Above Ground Plant zones.
Summer 2024 Consultation	The statutory consultation held in 2024 which consulted on the Proposed Development, including the draft Order Limits, the proposed pipeline routes, proposed sites for the Above Ground Plant and Water Recycling Plant, temporary construction compounds and any temporary or permanent access routes.

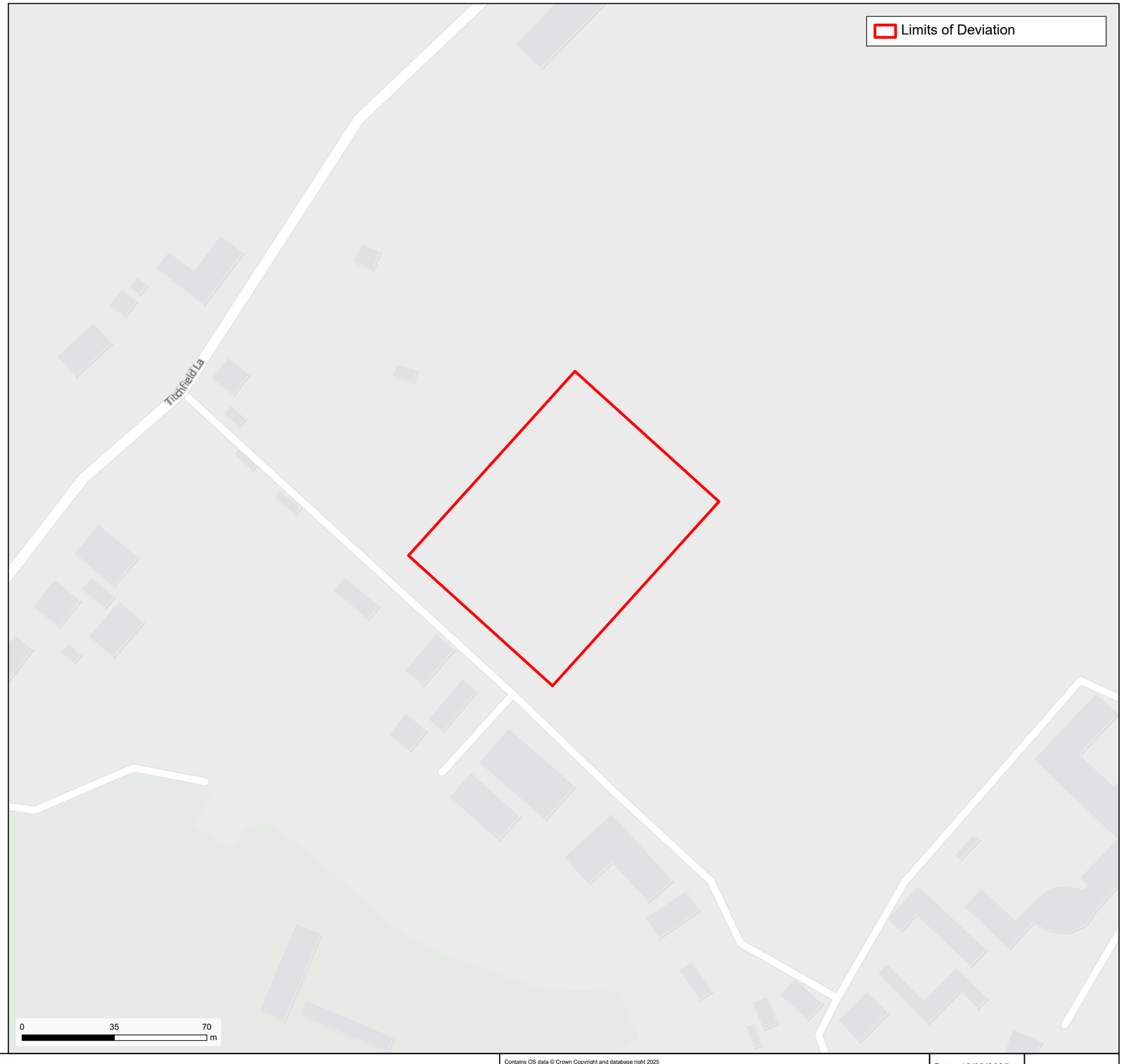
Term	Definition
Temporary construction access	Identifies locations where temporary access will be taken from the highway network for the purpose of construction of the Proposed Development.
Treated wastewater	Wastewater that has been treated to strict regulatory standards and is typically released to rivers or the sea.
Trenchless crossings	Crossings where trenchless installation techniques will be used during construction of the Proposed Development.
Washout valves	Located at topographical low points along the Proposed Development pipelines to facilitate commissioning and emptying a section of pipe for repair and maintenance.
Waste	Any substance or object which the holder discards or intends to or is required to discard – unusable or unwanted.
Wastewater	A combination of water from kitchens, bathrooms, sinks and taps (in domestic and non-domestic properties) and rainwater from roads and roofs, that is transported to, and cleaned at, a wastewater treatment works.
Water for Life Hampshire	This is the programme being progressed by the Applicant to address the sustainability objectives of to meet demand following a reduction in abstractions on Hampshire's two main rivers - The Test and Itchen - and ensuring a resilient water supply for the Applicant's customers, especially during times of drought.
Water Recycling Plant (WRP)	The WRP would receive a total maximum volume of approximately 82 Mega litres per day (Ml/d) of treated wastewater from Budds Farm Wastewater Treatment Works. This would provide a maximum output of approximately 60Ml/d of recycled water. Approximately 22Ml/d of reject water is produced from the water recycling process and would be combined with the existing Budds Farm Wastewater Treatment Works treated wastewater flows (that are generated by the existing operation of Budds Farm Wastewater Treatment Works), and released via the existing Eastney Transfer Tunnel, Eastney Pumping Station, and Eastney Long Sea Outfall operated by the Applicant.
Water Recycling Plant (WRP) site	The site containing the WRP, three pumping stations, a main process building, kiosks, administrative buildings and parking facilities. Located at a site north-west of Budds Farm Wastewater Treatment Works.
Water Resources Management Plan 2019 (WRMP19)	The Applicant's existing WRMP19 which sets out how the Applicant will manage and develop water resources to ensure a resilient supply of water for at least the next 25 years. The WRMP identifies the need for a strategic water resource options within the Western (Hampshire) supply area, from which the Proposed Development has been determined as the preferred solution to meet this need.

Term	Definition
Final Draft Water Resources Management Plan 2024 (WRMP24)	The Applicant's Final Draft WRMP24 which sets out how the Applicant will manage and develop water resources to ensure a resilient supply of water for at least the next 25 years The Final Draft WRMP24 supports the need for a strategic water resource option within the Western (Hampshire) supply area, from which the Proposed Development has been determined as the preferred solution to meet this need. The Final Draft WRMP24 has been submitted to Defra for approval.
The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (WER)	The WER [24] transpose the European Water Framework Directive 2000/60/EC into law in England and Wales.
The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 (WFD Direction)	The WFD Direction [25] establish a series of thresholds that are used in the classification of water body status under the Water Environment (Water Framework Directive) England and Wales) Regulation 2017.
Works plans (Document reference 2.3, DCO Volume 2)	The Works plans show the spatial extent of the works that are detailed in Schedule 1 of the draft Development Consent Order (Document reference 3.1, DCO Volume 3) to be consented and operated by the Development Consent Order when made.

Appendix A Site location and flood risk maps







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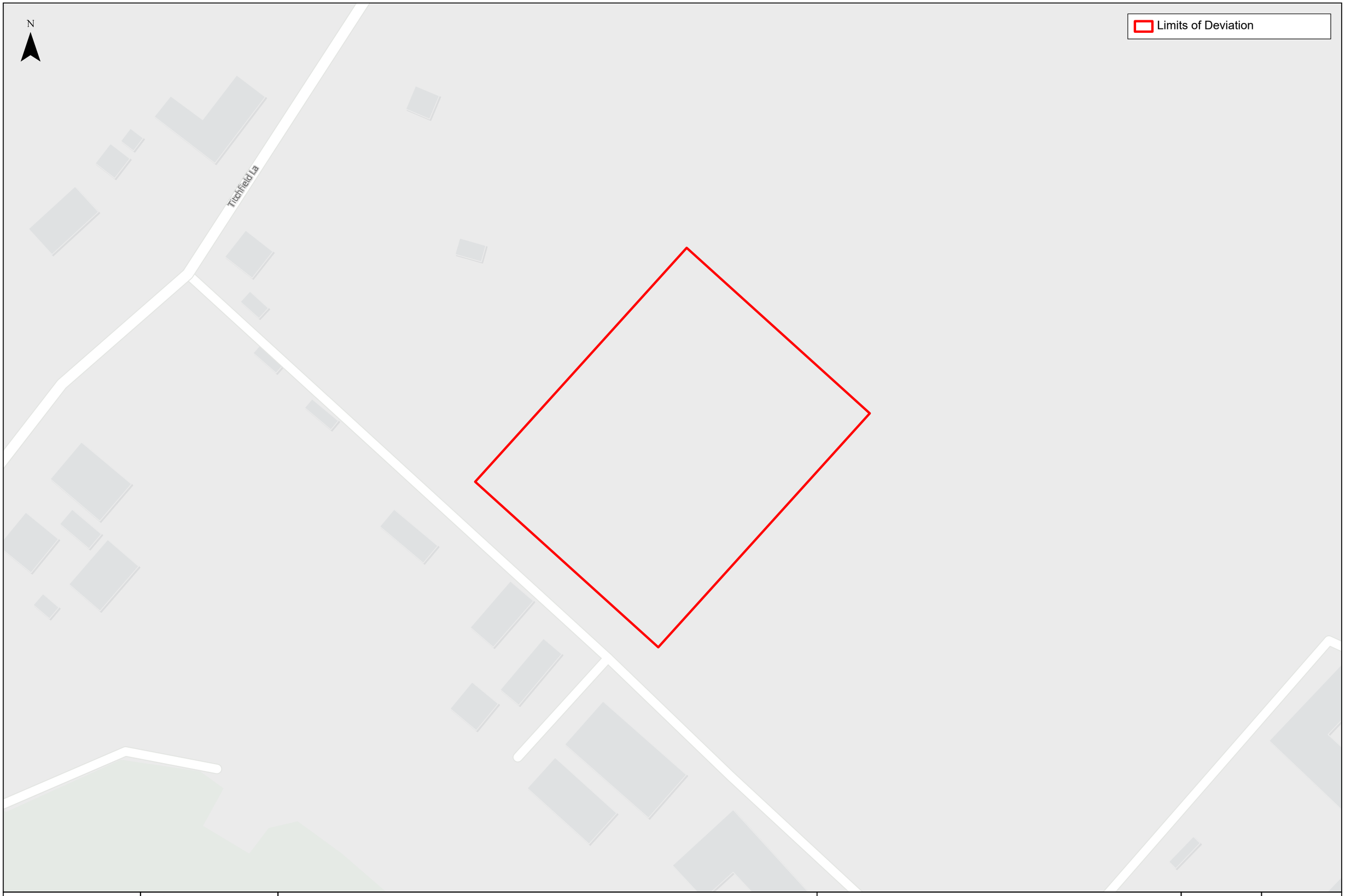
Client

HWTWRP IPS-G FRA

Site Location

Date: 13/03/2025	
Drawn: WB	Checked: KL
Figure: 01	Rev: A

Document Path: C:\Users\wbeaver\Documents\ArcGIS\Projects\HWTWRP IPS-G SuDS\HWTWRP IPS-G SuDS.aprx



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Site Location (Detailed)

0 50 100 m

1:1,000 @ A3	Date: 13/03/2025
Drawn: WB	Checked: KL
Figure: 01.1	Rev: A

Document Path: C:\Users\wbeaver\Documents\ArcGIS\Projects\HWTWRP IPS-G SuDS\HWTWRP IPS-G SuDS.aprx

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Site Location - Aerial

0 50 100 m

Esri Community Maps Contributors, Esri UK, Esri, TomTom, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS, Maxar, Microsoft

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Drawn: WB	Checked: KL
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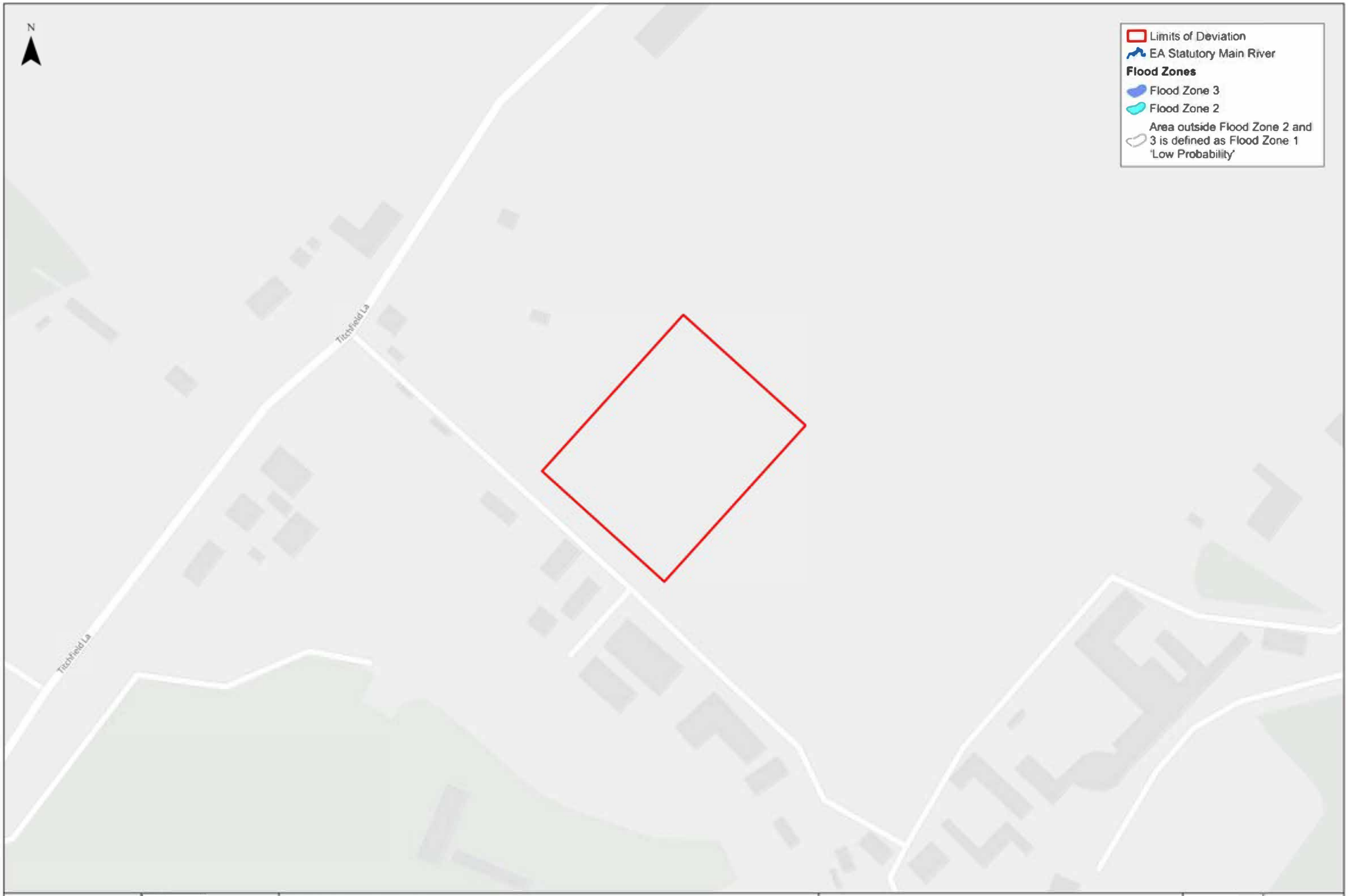

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Environment Agency Flood Map for Planning

0 75 150 m

1:1,500 @ A3 | Date: 13/03/2025

Drawn: WB | Checked: KL

Figure: 04 | Rev: A

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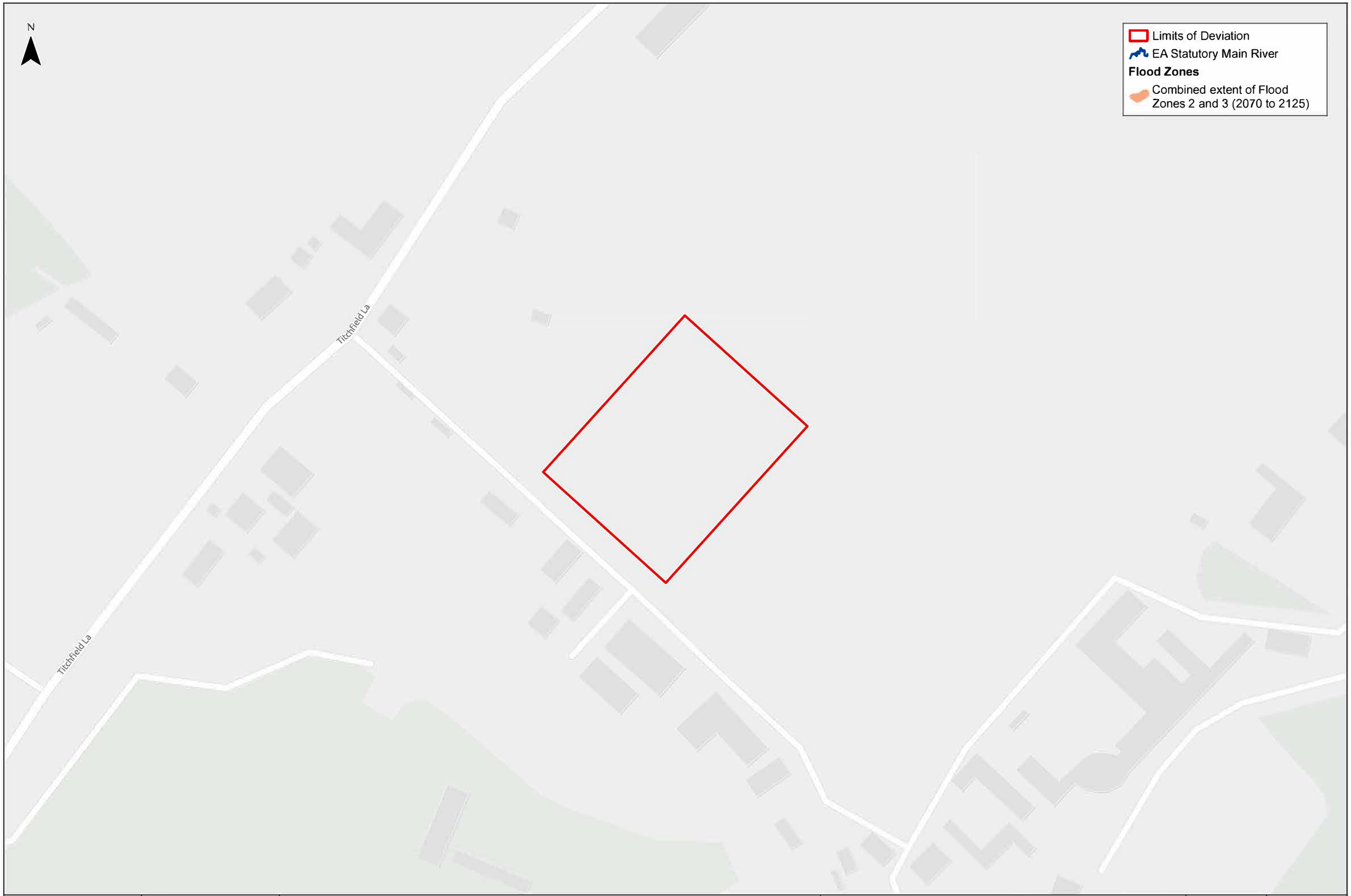

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from Southern Water.

HWTWRP IPS-G FRA

Environment Agency Flood Map for Planning plus Climate Change

0 75 150 m

1:1,500 @ A3	Date: 13/03/2025
Drawn: WB	Checked: KL
Figure: 04	Rev: A

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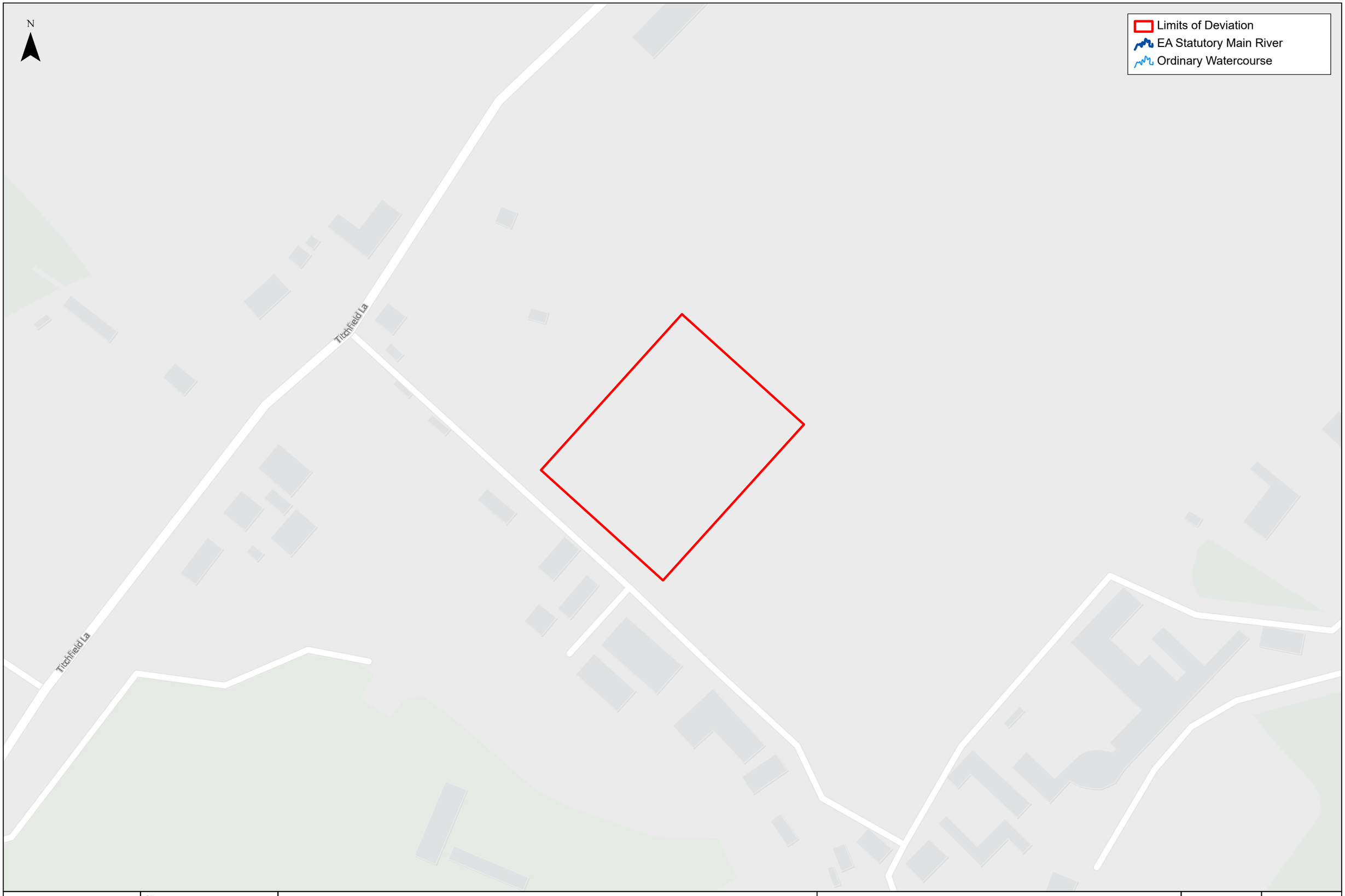

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Watercourse Location

0 75 150 m

1:1,500 @ A3	Date: 13/03/2025
Drawn: WB	Checked: KL
Figure: 04.1	Rev: A

Document Path: C:\Users\wbeaver\Documents\ArcGIS\Projects\HWTWRP IPS-G SuDS\HWTWRP IPS-G SuDS.aprx

N

Limits of Deviation

Risk of Flooding from Surface Water

- High (3.3%) - 1 in 30 Annual Probability
- Medium (1%) - 1 in 100 Annual Probability
- Low (0.1%) - 1 in 1000 Annual Probability
- Unavailable

Titchfield Dr

Titchfield La

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WATER for LIFE — Southern Water

HWTWRP IPS-G FRA

EA Risk of Flooding from Surface Water Extent (NaFRA2 Data)

0 75 150 m

1:1,500 @ A3	Date: 13/03/2025
Drawn: WB	Checked: KL
Figure: 05	Rev: A

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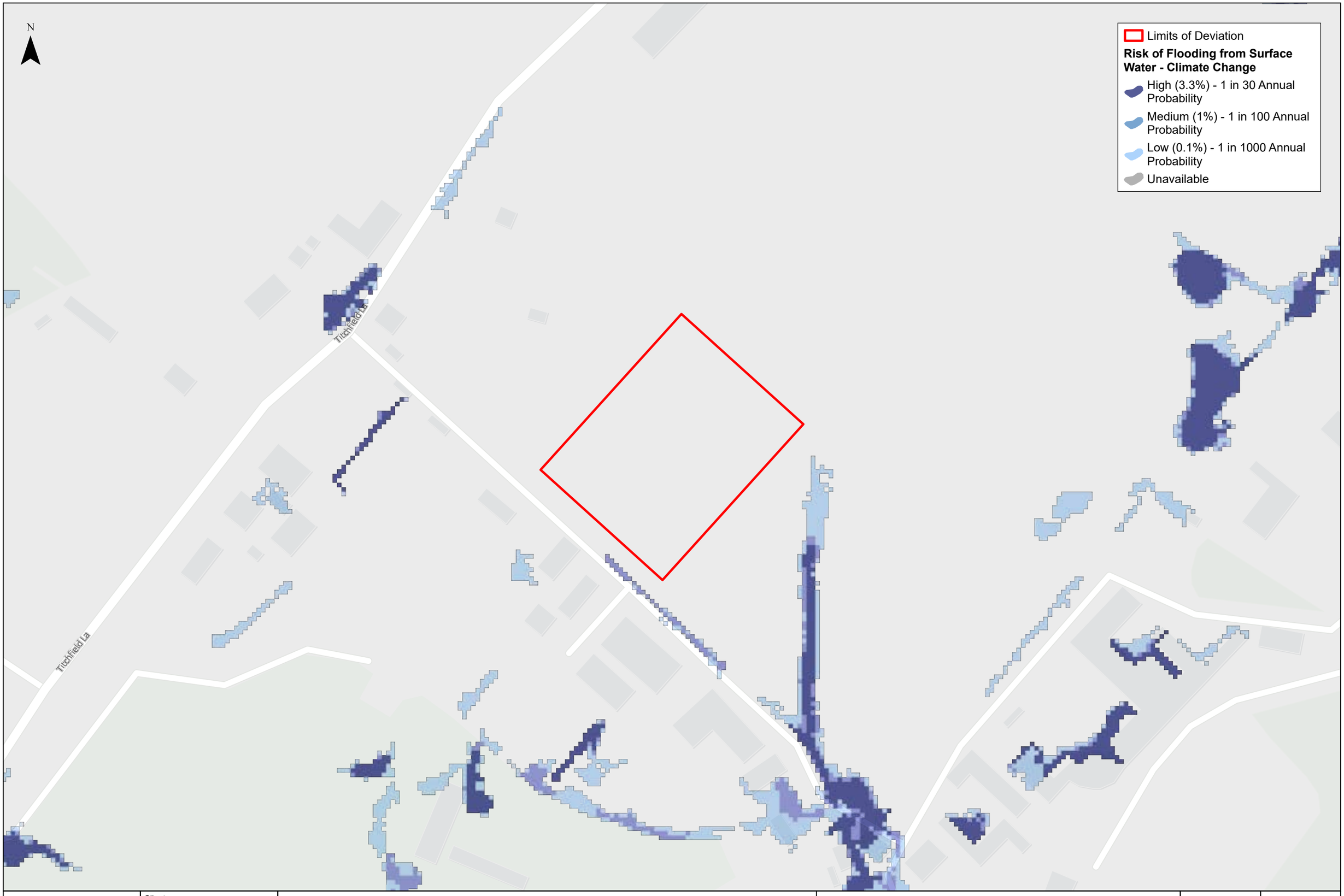

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HWTWRP IPS-G FRA

EA Risk of Flooding from Surface Water - Climate Change Extent (NaFRA2 Data)

0 75 150 m

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Figure: 06	Rev: A

Document Path: C:\Users\wbeaver\Documents\ArcGIS\Projects\HWTWRP IPS-G SuDS\HWTWRP IPS-G SuDS.aprx

N

Limits of Deviation

Risk of Flooding from Rivers and Sea

- High (3.3%) - 1 in 30 Annual Probability
- Medium (1%) - 1 in 100 Annual Probability
- Low (0.1%) - 1 in 1000 Annual Probability
- Very Low (<0.1%) - Less than 1 in 1000 Annual Probability
- Unavailable

Titchfield La

Titchfield La

Stantec

Client

HWTWRP IPS-G FRA

EA Risk of Flooding from Rivers and Sea Extent (NaFRA2 Data)

0 75 150 m

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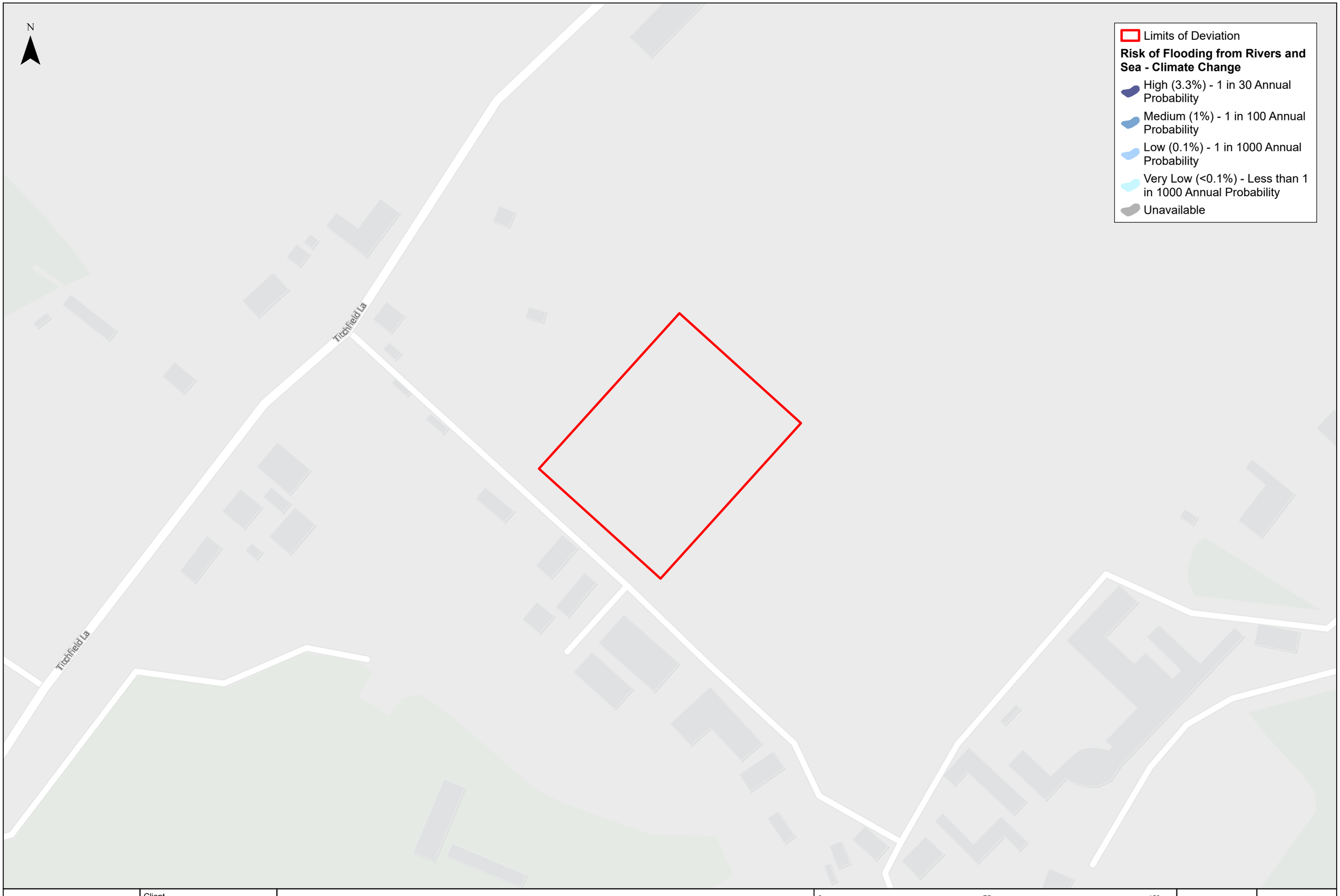

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EA Risk of Flooding from Rivers and Sea - Climate Change Extent (NaFRA2 Data)

0 75 150 m

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Drawn: WB	Checked: KL
Figure: 08	Rev: A

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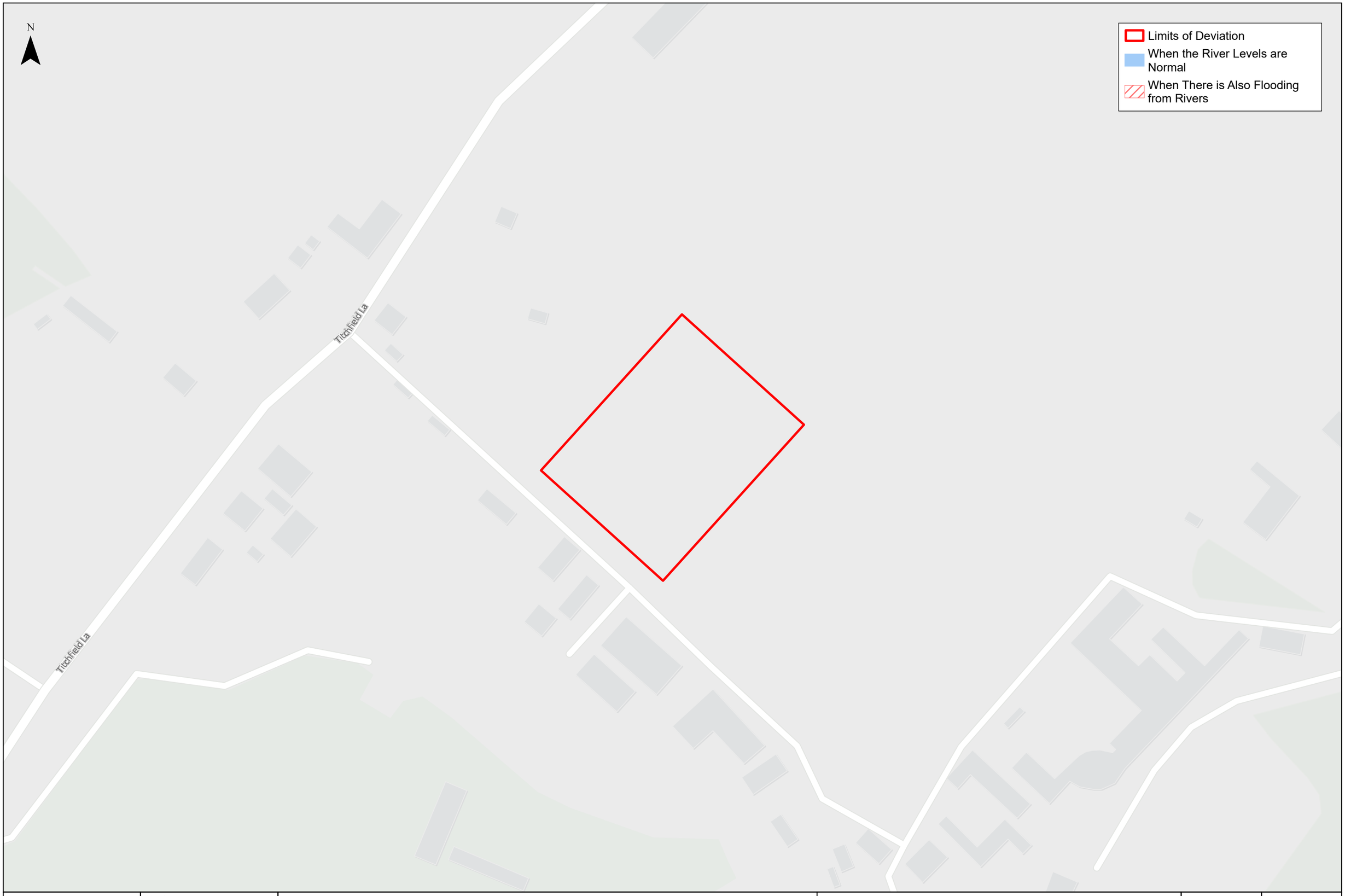

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Risk of Flooding from Reservoirs - Maximum Flood Extent

0 75 150 m

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Drawn: WB	Checked: KL
Figure: 09	Rev: A

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