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Flood Risk Assessment

Nuns Bridges, Thetford, IP24 2PZ

Steven Dockray



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Contents

Executive Summary	3
1. Introduction	3
1.1 Authorisation & Context.....	5
1.2 Aims and Objectives	5
1.3 Information Sources Used	5
1.4 Report Limitations	6
1.5 Site Setting.....	6
1.6 Topographic Mapping & Levels.....	6
1.7 Local Hydrology.....	7
1.8 Existing Drainage	7
2. Flood Risk Evaluation	8
2.1 Fluvial Flood Risk	8
2.2 Tidal Flood Risk.....	11
2.3 Surface Water Flooding	12
2.4 Reservoir Failure	13
2.5 Groundwater Flooding	13
2.6 Artificial Flood Sources	15
2.7 Summary	15
3. Flood Risk in Planning Context.....	16
3.1 Flood Risk Status and Development Viability	16
3.2 Design Principles for Development.....	16
3.3 Flood Awareness.....	18
Conclusion.....	19

Drawings

Drawing 01	Site Location Plan
Drawing 02	Site Location Plan
Drawing 03	LiDAR Derived Ground Level Plans
Drawing 04	EA Flood Map for Planning
Drawing 05	Risk of Flooding from Surface Water Depth 0.2m Flood Likelihood
Drawing 06	EA Flood Warning and Alert Areas

Appendices

Appendix A	Site Plans
Appendix B	EA Product 4 Data & Mapping

Executive Summary

FPS Environmental (“FPS”) on behalf of Steven Dockray (“the client”), have undertaken a Flood Risk Assessment (“FRA”) in support of a pedestrian foot bridge to be constructed across the stream between the River Thet and Little Ouse, Thetford – Nuns Bridges, Thetford, IP24 2PZ (“the site”).

The EA Flood Map for Planning shows that the site is within the high risk Flood Zone 3, which has a greater than 1 in 100 (>1% Annual Exceedance Probability (AEP)) chance of flooding each year.

In accordance with Annex 3: Flood risk vulnerability classification of the NPPF, the development of a new recreational footbridge is considered to be ‘Water-Compatible Development’.

Following the NPPF, proposals for a ‘Water-Compatible Development’ within Flood Zone 3a are acceptable, and in Flood Zone 3b, development should be designed and constructed to:

- Remain operational and safe for users in times of flood;
- Result in no net loss of floodplain storage; and,
- Not impede water flows and not increase flood risk elsewhere.

The exception test is not required for this type of development.

The site has been assessed for a variety of flood sources, and based upon detailed analysis, this FRA has identified that fluvial and groundwater flood risk are considered to be high. Flood risk from surface water and artificial flood sources are considered to be low. Flood risk from reservoir failure is considered to be very low. Flood risk from tidal sources is considered to be negligible.

The client’s development aspirations can be designed to manage/mitigate any residual flood risk as part of the design by following the proposed guidance:

- The use of appropriate finished ground levels relative to flood risk;
- The use of appropriate soffit levels for a new bridge crossing;
- Consider the implementation of flood resistance and/or flood resilience measures as part of the path and bridge construction;
- Any level raising within the flood zone should be compensated on a like for like basis on site with localised earthworks; and,
- No level raising should impede the flow of flood water.

This FRA has therefore demonstrated that the proposed development can be undertaken in-line with NPPF guidance, and that it is:

- Suitable in the location proposed;
- Unlikely to place additional persons at risk of flooding; and,

- Unlikely to increase flood risk elsewhere through the loss of floodplain storage, impedance of flood flows, or increase in surface water run-off.

1. Introduction

1.1 Authorisation & Context

FPS Environmental (“FPS”) on behalf of Steven Dockray (“the client”), have undertaken a Flood Risk Assessment (“FRA”) in support of a pedestrian foot bridge to be constructed across the stream between the River Thet and Little Ouse, Thetford – Nuns Bridges, Thetford, IP24 2PZ (“the site”).

1.2 Aims and Objectives

The overall aim is to demonstrate that the proposed development at the site is appropriate in the context of flood risk. The proposed site plan is included within Appendix A for reference. FPS has undertaken this FRA in accordance with the most up to date local and national policies on development and flood risk by:

- Assessing whether the site is likely to be affected by flooding from different sources;
- Providing an assessment of the vulnerability of the proposed development and its suitability in relation to the identified flood risk;
- Providing an opinion in relation to the likely impacts of the proposed development on flooding and elsewhere; and,
- Where required, presenting flood risk mitigation measures necessary to ensure that the proposed development and users will be safe, whilst ensuring flood risk is not increased elsewhere.

1.3 Information Sources Used

To prepare this report, the following information sources and general guidance have been used:

- National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Planning Practice Guidance (PPG) – Accessed June 2025;
- Breckland Council (BC) Strategic Flood Risk Assessment (SFRA) – Scott & Wilson, October 2009;
- Norfolk County Council (NCC) Preliminary Flood Risk Assessment (PFRA) – NCC, July 2011;
- Location Plan – Drawing no. PFBANBTL0425 – Fen Group. 21/04/2025;
- Proposed Layout – Drawing no. PFBANBTPL230424 – Fen Group. 23/04/2025;
- Environment Agency (EA) Interactive Online Flood Mapping – Accessed June 2025;
- EA Surface Water Dataset – Downloaded June 2025;
- 1m Resolution Light Detection and Ranging (LiDAR) Data – Downloaded June 2025; and,
- British Geological Survey Drift & Geology Maps – Accessed June 2025.

1.4 Report Limitations

This assessment of flood risk has looked to use the most accurate and up to date flood mapping for the location. The site boundary has been supplied by the client and the assessment of risk is based on this.

This report has been prepared with due care and diligence in accordance with industry best practice and guidance. The conclusions in this report are valid only to the extent that the information provided to FPS was accurate and complete at time of receipt.

1.5 Site Setting

The proposed pedestrian footbridge is located at National Grid Reference: TL873825 / TL8739682565 and is situated to the immediate west of the existing Nuns Bridge which provides vehicular access over the stream between River Thet and the Little Ouse River.

The site area is approximately 0.0022ha and currently comprises of the existing stream bank with trees and vegetation.

The site location can be seen in Appendix A and Drawings 01 & 02 for reference.

1.6 Topographic Mapping & Levels

In the absence of a property-specific topographical survey, freely available 1m resolution Light Detection and Ranging (LiDAR) data has been downloaded for the property and local area. An extract of the LiDAR data is provided on Drawing 03.

The LiDAR data indicates:

Levels in the local area form a valley around the River Thet and the Little Ouse River which the proposed footbridge is situated between.

The northern section of the proposed footbridge has an approximate elevation of 10.95m AOD; while the southern section of the proposed footbridge has an approximate elevation of 10.91m AOD.

The lowest point of the site, which is situated within the stream channel itself, has an approximate ground level of 9.96m AOD.

1.7 Local Hydrology

The proposed footbridge is set to provide pedestrian access over the existing stream situated between the River Thet and the Little Ouse River. This stream is an unnamed watercourse which is indicated to be hydraulically connected to the River Thet and Little Ouse River, based on OS mapping.

The River Thet, an EA designated Main River, flows in a westerly direction and is located approximately 22m north of the proposed pedestrian footbridge. The River Thet confluences with the Little Ouse River approximately 420m to the north-west of the site.

The Little Ouse River, which is also classified as an EA Main River, flows in a north-westerly direction approximately 55m to the south of the site.

A review of the Flood Estimation Handbook (FEH) web portal indicates the upstream catchment of the proposed footbridge is approximately 312.3km² consisting of urban and open space areas to the north-east of the site.

1.8 Existing Drainage

The site consists of open vegetated, undeveloped space, covering the existing park area and the stream between the River Thet and the Little Ouse River. There is no known existing drainage infrastructure within the site.

Anglian Water sewer records have not been obtained as part of this FRA.

The site is expected to drain in line with a typical greenfield site, with most rainwater draining into the underlying soils, with any excess exceedance flow following the natural topography towards the unnamed stream which the proposed footbridge will be constructed over.

2. Flood Risk Evaluation

The following sections provide an evaluation of the risk posed by the key flood sources in relation to the site location. Consideration is given to the severity of flood risk to the site as a whole, making use of existing flood mapping, high-level local strategic studies and available topographic information.

2.1 Fluvial Flood Risk

Fluvial flood risk originates from a watercourse of any size that may affect a property when the channel capacity is exceeded. This type of flooding often occurs following an extreme rainstorm event or a prolonged period of wet weather.

The EA Flood Map for Planning shows that the site is within the high risk Flood Zone 3, which has a greater than 1 in 100 (>1% Annual Exceedance Probability (AEP)) chance of flooding each year.

EA Data

The EA have produced updated guidance relating to projected increases in peak river flows that may arise due to climate change. The site is located within the Cam & Ely Ouse Management Catchment area and the peak increases to river flows are summarised in Table 1 as follows:

Table 1 – Peak river flow allowances for the Cam & Ely Ouse Management Catchment

Year	Central	Higher	Upper
2020's	2%	7%	21%
2050's	-2%	5%	22%
2080's	9%	19%	45%

The range of allowances is based on percentiles. 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; the Higher allowance is based on the 70th percentile; and the Upper End allowance is based on the 95th percentile.

The EA has provided Product 4 data for the River Thet and Little Ouse River catchment area. This data has been taken from the EAn_EasternRivers_LittleOuse_MP4b_2015 modelling data which was produced in 2015 and contains the most up to date and accurate modelling for the site. The data is included within Appendix B of this report.

The two nearest model nodes to the site are Node 8 (ID 1283061) and Node 4 (ID 1283131). The modelled flood levels at these model nodes are summarised in the below table:

Table 2 – 1D Undefended Flood Level from the EAn_EasternRivers_LittleOuse_MP4b_2015 model

Modelled Flood Event	Flood Level (m AOD)	
	Model Node 8 - ID 1283061	Model Node 4 - ID 1283131
1 in 100 year (1% AEP)	11.19	11.00
1 in 100 year + 20% CC (1% + 20% CC AEP)	11.30	11.12
1 in 200 year (0.5% AEP)	11.26	11.08
1 in 1000 year (0.1% AEP)	11.54	11.33

The potential flood depths at the site have been estimated assuming a ground level of 10.91m AOD, as derived from the LiDAR data (Section 1.6). This is the approximate ground level at the southern section of the proposed footbridge adjacent to the southern bank of the unnamed stream, which is the lowest LiDAR levels at the site; the LiDAR level of the stream itself has been discounted here as it is lower than the banks and adjacent land. The potential flood depths calculated are therefore considered to represent a worst-case scenario of flood impacts on the footbridge based on the hydraulic model results provided by the EA.

The modelling indicates the site is likely to be affected by fluvial flooding in all modelled scenarios contained within the P4 data set.

During the 1 in 100 (1% AEP) flood event, potential flood depths of up to 280mm could occur adjacent to the proposed residential footbridge. When taking into the effects of climate change, the potential flood depths are indicated to increase to approximately 390mm during the 1 in 100 + 20% Climate Change allowance scenario (1% AEP + 20% CC).

More extensive flood depths are indicated during the 1 in 1000 year (0.1% AEP) event, with depths of up to 630mm adjacent to the site.

The EA have also provided modelled 2D grid water levels for the site. The flood depth grids have been used to estimate the potential flood depths at the site for a range of scenarios, as shown in the table below:

Table 3 – 2D Grid Water Levels from the EAn_EasternRivers_LittleOuse_MP4b_2015 model

Modelled Flood Event	Flood Depth (m)	
	Label icon - 14	Label icon - 20
1 in 2 year (50% AEP)	No Data	0.88
1 in 5 year (20% AEP)	No Data	0.96
1 in 10 year (10% AEP)	No Data	1.01
1 in 20 year (5% AEP)	No Data	1.05
1 in 25 year (4% AEP)	1.52	1.07
1 in 30 year (3.33% AEP)	1.53	1.08
1 in 50 year (2% AEP)	1.57	1.11
1 in 75 year (1.33% AEP)	1.60	1.14
1 in 100 year (1% AEP)	1.66	1.19
1 in 100 year + 20% CC (1% + 20% CC AEP)	1.75	1.28
1 in 200 year (0.5% AEP)	1.72	1.24
1 in 1000 year (0.1% AEP)	1.89	1.43

In relation to the 2D modelling data, the 2D modelling indicates greater flood depths at the site in comparison to the 1D Node levels.

The 2D modelling indicates that potential flood depths of up to 880mm could occur adjacent to the proposed footbridge during a 1 in 2 (50% AEP) flood event; with flood depths exceeding 1m during a 1 in 10 (10% AEP) flood event with depths of 1.10m.

During the 1 in 100 (1% AEP) event, the 2D modelling implies that potential flood depths of 1.66m could occur adjacent to the proposed footbridge. When taking into account the effects of climate change, these depths increase to 1.75m during the 1 in 100 + 20% CC scenario.

Maximum 2D flood depths of up to 1.89m are indicated at the site during the 1 in 1000 (0.1% AEP) event. This event is typical of the 1 in 100 (1% AEP) event with an upper climate change scenario.

The approximate design life of the new footbridge is proposed as 75 years and it is intended that the development stays clear of flooding to the level of the design life. In this case, the proposed footbridge will need a minimum level of 11.18m AOD to be above the current year 1 in 75 (1.33% AEP) flood level (based on the 2D data). However, to accommodate climate changes allowances, it is recommended that the development appreciates the 1 in 100 year flood event with a 20% allowance for climate change at the crossing over the unnamed stream between the River Thet and the Little Ouse River. In the 2D modelling this is stated as 11.34m AOD, which provides a robust and precautionary level for the footbridge structure and its users. Based on the lowest LiDAR level of 10.91m AOD at the site, this would imply that the footbridge will need to be raised by approximately 430mm to accommodate for the 1 in 100 year flood event with a 20% level.

Therefore, some level raising would be required in this area to achieve the increased flood protection. However, it is acknowledged that this area is within Flood Zone 3 and therefore any level raising would require like-for-like flood storage compensation. Additionally, that any works designed and constructed should not impeded any flow routes.

Historic Flooding

The EA historic flood map contained within the P4 data indicates that the site is located within an area of recorded historic flooding.

It is indicated that the site area was previously flooded in 1968. There is also another instance of historic flooding nearby to the site around the Little Ouse River which occurred in 1947. Neither of these flood events have been attributed with a source or cause of flooding.

Historic flooding datasets are not always complete and comprehensive and therefore the absence of historic flood records does not mean that a site has never flooded or is not at risk from flooding.

Fluvial flood risk is considered to be **high**.

The site is located within Flood Zone 3, which is land assessed as having a 1 in 100 (1% AEP) or greater chance of flooding in any given year.

During the 1 in 100 (1% AEP) event, the 2D modelling implies that potential flood depths of 1.66m could occur adjacent to the proposed footbridge. When taking into account the effects of climate change, these depths increase to 1.75m during the 1 in 100 + 20% CC scenario.

EA historic flood mapping contained within the P4 data indicates that the site may have flooded previously.

Further considerations are made within Section 3 of this FRA to ensure that the risk remains at or below this level for the lifetime of the development.

2.2 Tidal Flood Risk

Tidal flood risk can affect the coastline as well as estuaries and rivers that are tidally influenced. Flood events often coincide with the tidal regime, high rainfall events or other natural phenomena, which can lead to water levels covering low-lying land or exceeding natural or man-made defences.

The watercourses within the vicinity of the site are not tidally influenced.

Tidal flood risk is considered to be **negligible** and no further consideration from this risk source is deemed necessary as part of this FRA.

2.3 Surface Water Flooding

Surface water flooding occurs when local drainage networks are overwhelmed during an extreme rainfall event, causing water to flow over the surface and follow gravity to the lowest point where it often pools. This flood source is increasingly becoming one of the major contributors of flood risk, due to changing weather patterns and increased extreme rainfall events occurring across the UK. This places more pressure than ever on drainage systems, which are often overwhelmed during flash flood events, normally only designed to take between a 1 in 20 and a 1 in 30 return period event.

EA Risk of Flooding from Surface Water mapping can be seen on Drawing 05, showing the flood extents and flood depths for the high risk, medium risk and low risk likelihood events. These are defined as follows:

- High risk: annual chance of flooding of greater than 3.3%.
- Medium risk: annual chance of flooding of between 1% and 3.3%.
- Low risk: annual chance of flooding of between 0.1% and 1%.
- Very Low risk: annual chance of flooding of less than 0.1%.

The site is shown to be largely unaffected by surface water, with only a very small area of surface water accumulations indicated which is confined to the channels of the stream which the proposed footbridge is set to extend over.

Surface water flood depth of up to 0.2m are indicated adjacent to the site which are categorised as low risk. This impact is limited and localised to the stream channel and are likely as a result of localised low points in the topography.

The site is shown to remain unaffected from surface water flooding in all modelled scenarios.

It should be noted that surface water flood maps typically only consider the effects of rainfall and may not fully represent the effects of urban highways, surface water and/or private drainage systems. The flood modelling uses a standardised “removal” rate and therefore this may not account for areas where sewers with either a smaller or greater capacity may be present.

Surface water flood risk is considered to be **low**.

Surface water flood depth of up to 0.2m are indicated adjacent to the site which are categorised as low risk. This impact is limited and localised to the stream channel and are likely as a result of localised low points in the topography.

Further considerations are made within Section 3 of this FRA to ensure that the risk remains at or below this level for the lifetime of the development.

2.4 Reservoir Failure

Assessment of risk of a reservoir failure may be interpreted as the extent of flooding that would occur, should any reservoir that has a capacity larger than 25,000m³, suffer a catastrophic failure. Mapping of this nature is described by EA as a worst-case scenario, with a flood event of this type being extremely unlikely to occur.

Online EA mapping showing the Flood Risk from Reservoirs shows that the site is located within an area at risk of flooding in the event of a reservoir failure.

It should be noted that the EA risk of flooding from reservoir maps only consider the flood risk associated with designated reservoirs (typically >25,000m³). Small and/or non-designated reservoirs may not be represented on the flood maps.

Current legislation ensures that reservoirs are inspected regularly, and essential safety work is carried out as required. The likelihood of a failure event occurring is therefore considered to be very low.

The reservoirs that could affect the site during a breach scenario are outlined below:

- Washpits Reservoir - Owner: Euston Estate - Lead Local Flood Authority: Suffolk;
- Euston Reservoir - Owner: Euston Estate - Lead Local Flood Authority: Suffolk;
- Snarehill Farm Reservoir - Owner: Mr R J B Gooderham - Lead Local Flood Authority: Norfolk;
- Wyken Hall Reservoir - Owner: Sir Kenneth Carlisle - Lead Local Flood Authority: Suffolk.

The risk of flooding from reservoir failure is considered to be **very low**.

Further considerations are made within Section 3 of this FRA to ensure that the risk remains at or below this level for the lifetime of the development.

2.5 Groundwater Flooding

Flooding from a groundwater source often occurs during or following a period of prolonged wet weather within areas that are low lying underlain by permeable rocks (aquifers). When aquifers are at their maximum holding potential, flooding at surface level can occur from beneath the ground.

Groundwater as a sole flooding mechanism is often regarded as low risk, as it often relies on a coinciding rainfall, or flood event from an additional source to become a risk. The main contributory factor that will enhance the risk of groundwater flooding is prolonged periods of high rainfall, which result in the groundwater saturation level rising to the point where it reaches the surface.

Online British Geological Survey (BGS) mapping indicates that the bedrock geology beneath the site comprises of the *Lewes Nodular Chalk Formation – Chalk*. This is defined as a Principal Aquifer. Principal and secondary aquifers provide significant quantities of drinking water, and water for business needs. They may also support rivers, lakes and wetlands.

The BGS mapping also indicates the presence of superficial deposits beneath the site. The superficial geology comprises of the *Alluvium - Silt and clay*. The superficial deposits are defined as a Secondary A aquifer. Secondary A aquifers comprise permeable layers that can support local water supplies and may form an important source of base flow to rivers.

The Hydrogeological Map of the UK defines the bedrock as a *Highly Productive Aquifer*, in which flow is virtually all through fractures and other discontinuities.

The Cranfield University online “Soilscapes” map identifies the soils below the site comprise of *loamy and sandy soils with naturally high groundwater and a peaty surface*, which are indicated to drain into local shallow groundwater.

The site is not located within a Groundwater Source Protection Zone 2 (SPZ 2) – Outer Protection Zone.

Shallow superficial deposits such as those found at the site typically have good hydraulic connectivity with nearby watercourses, and therefore when water levels in the watercourse rise, the groundwater level within these deposits can also rise. In topographically lower areas, this can result in groundwater emerging at the surface. Groundwater flooding may only subside once the water table naturally lowers when levels in the watercourse decrease.

Overall, the risk of flooding from groundwater is considered to be **high**.

The Hydrological Map of the UK suggests that the site is situated above a Highly Productive Aquifer. The presence of superficial deposits can exacerbate the risk of groundwater flooding, which could be expected due to the location of the site situated above a stream between the River Thet and the Little Ouse River.

Further considerations are made within Section 3 of this FRA to ensure that the risk remains at or below this level for the lifetime of the proposed development.

2.6 Artificial Flood Sources

Flood risk from artificial sources would include the failure of man-made drainage or the water supply network. Although the likelihood of such an occurrence is highly unpredictable, it is recommended that any potential future development at the site takes into account the location of any existing below ground services, in order to avoid any inadvertent flooding taking place during the construction phase and in the future.

Given that the site is undeveloped, there are no known flooding incidents covering the site area.

Anglian Water have not been contacted for records of historic sewer flooding as part of this report.

Overall, the risk of flooding from sewers is considered to be **low**.

Although there is no evidence of flooding attributable to surcharge from the public sewer within the local vicinity, any buried system can be at risk of surcharge due to localised blockages and there therefore remains a low risk to the site if there are existing assets close by.

Further considerations are made within Section 3 of this FRA to ensure that the risk remains at or below this level for the lifetime of the proposed development.

2.7 Summary

Table 4 provides a summary of the classification of risk to the sites from all flood sources and indicates where further considerations are required in the context of the proposed development.

Table 4 – Flood Risk Summary

Risk Source	Overall Risk Classification	Additional Considerations
Fluvial	High	See Section 3
Tidal	Negligible	None
Surface Water	Low	See Section 3
Reservoir Failure	Very low	None
Groundwater	High	See Section 3
Artificial Flood Sources	Low	See Section 3

3. Flood Risk in Planning Context

This report has so far evaluated all potential flood sources that may affect the site. The following sections describe the identified flood risks in the context of the proposed development and provide recommendations where required, for the mitigation or reduction of those risks to enable safe development.

3.1 Flood Risk Status and Development Viability

The EA Flood Map for Planning shows that the site is located within Flood Zone 3.

In accordance with Annex 3: Flood risk vulnerability classification of the NPPF, the development of a new recreational footbridge is considered to be 'Water-Compatible Development'.

Following the NPPF, proposals for a 'Water-Compatible Development' within Flood Zone 3a are acceptable, and in Flood Zone 3b, development should be designed and constructed to:

- Remain operational and safe for users in times of flood;
- Result in no net loss of floodplain storage; and,
- Not impede water flows and not increase flood risk elsewhere.

The exception test is not required for this type of development.

3.2 Design Principles for Development

It is recommended that, based on the current design proposals, the following design principles should be incorporated to demonstrate its long-term resistance to flooding:

- The use of appropriate finished ground levels relative to flood risk;
- The use of appropriate soffit levels for a new bridge crossing;
- Consider the implementation of flood resistance and/or flood resilience measures as part of the bridge construction;
- Any level raising within the flood zone should be compensated on a like for like basis on site with localised earthworks; and,
- No level raising should impede the flow of flood water.

Development Levels

The proposed new works consist of a new pedestrian footbridge which will tie in with the existing land footpaths, with the intention for both to remain operational for users in up to the 1 in 75 year flood

event, which coincides with the design life of the development. To ensure this is the case for future events, when the effects of climate change have been realised, the flood levels for the 1 in 100 year event are proposed to be used, with a 20% allowance for climate change.

For the river crossing footbridge - 1 in 100 year + 20%CC flood level = **11.34m AOD + appropriate freeboard allowances for the bridge, which can be confirmed through the design stage.**

Flood Storage Compensation

To meet the proposed minimum footbridge levels above, ground raising is expected to be required in the lead up to the proposed bridge crossing.

It is recommended that localised reduced level earthworks are completed as close to the level raising as possible, and within the same flood zone, to compensate for any lost flood storage, to provide an overall neutral cut/fill balance as a minimum.

The path raising should also be designed to not impeded any river flows or storage flows.

Access/Egress

Access and egress to the footbridge is via Nuns Bridge Road and the existing public footpath.

Should the pathway or public highway ever flood, any users or maintenance teams should not use the site until floodwater has receded so that safe access and egress can be achieved.

Flood Resistance and Recoverability

Flood resistance measures could be considered as part of the design proposals to mitigate against extreme flooding scenarios, above the design flood of the 1 in 100 year + 20% CC.

Flood resistance measures that could be considered include:

- Appropriate path construction within the flood zones to avoid surface scouring and undermining from adjacent flows;
- Appropriate surface finishes in flood zones to enable ease of clearing of debris from flood events; and,
- Suitable bridge design to reduce the risk of catching debris.

3.3 Flood Awareness

It is important that the operator of the path and local recreational areas have an awareness of flood risk at a local level, and that any necessary actions can be taken prior to flooding.

- **Flood Warnings & Alerts:** The site is located within an EA Flood Alert Area and EA Flood Warning Area.

EA Flood Warning Area – Little Ouse River and River Thet at Thetford, Brandon and Hockwold (052FWFLOTTH).

EA Flood Warning Area – Little Ouse River and River Thet in Suffolk and Norfolk (052WAFLOT)

The operator should consider signing up to receive flood warnings and alerts through the following website:

<https://www.gov.uk/sign-up-for-flood-warnings>

- **Weather Alerts:** The Met Office provide weather warnings when extreme weather is forecast. Their service includes warnings for rain and thunderstorms. Surface water flooding typically occurs during and following torrential and/or high intensity rainfall and therefore these warnings may provide an indication of when flooding could happen. The operator can check the local weather forecast and register to receive weather warnings from the Met Office through the following website:

<https://www.metoffice.gov.uk/weather/warnings-and-advice>

- **Flood Plan:** Preparation of such a plan should detail actions to take where a flood resilient approach is chosen, or specific items based on the severity of local flood risk and the weather forecast. The EA have developed template flood plan document which can be downloaded here:

<https://www.gov.uk/government/publications/personal-flood-plan>

Conclusion

The site has been assessed for a variety of flood sources, and based upon detailed analysis, this FRA has identified that fluvial and groundwater flood risk are considered to be high. Flood risk from surface water and artificial flood sources are considered to be low. Flood risk from reservoir failure is considered to be very low. Flood risk from tidal sources is considered to be negligible.

The client's development aspirations can be designed to manage/mitigate any residual flood risk as part of the design by following the proposed guidance:

- The use of appropriate finished ground levels relative to flood risk;
- The use of appropriate soffit levels for a new bridge crossing;
- Consider the implementation of flood resistance and/or flood resilience measures as part of the path and bridge construction;
- Any level raising within the flood zone should be compensated on a like for like basis on site with localised earthworks; and,
- No level raising should impede the flow of flood water.

This FRA has therefore demonstrated that the proposed development can be undertaken in-line with NPPF guidance, and that it is:

- Suitable in the location proposed;
- Unlikely to place additional persons at risk of flooding; and,
- Unlikely to increase flood risk elsewhere through the loss of floodplain storage, impedance of flood flows, or increase in surface water run-off.

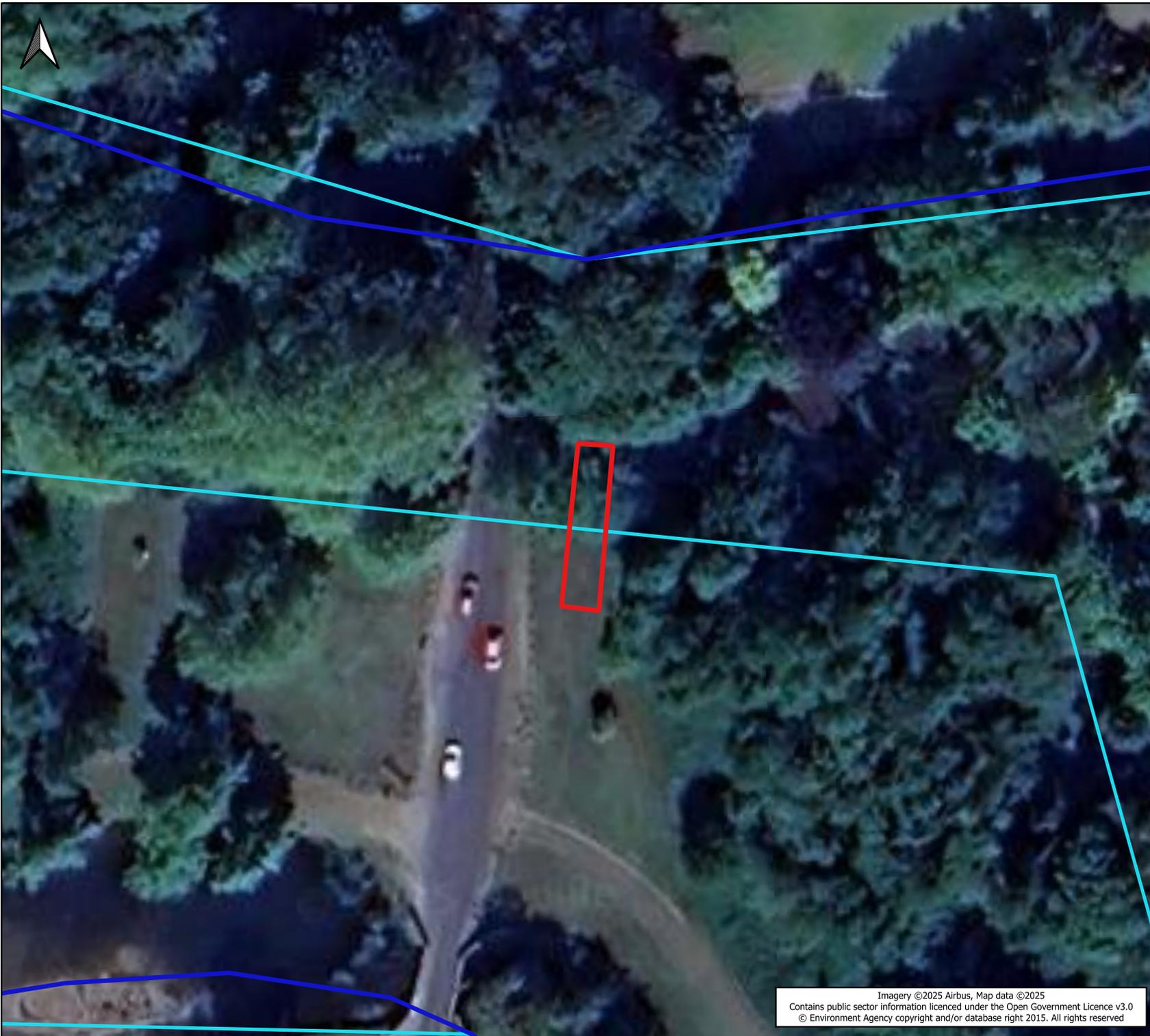
Limitations of the report

This report has been prepared by FPS Environmental Limited (FPS) solely for the benefit of Steven Dockray (“the Client”) and has not been assigned to any other third parties. If reliance on this report was required by a third party, this could be arranged for an agreed fee. This report should not be used by the client in relation to any other matters not covered specifically by the scope of the report. If this report does not contain a signature in the Document Control window, then this is an uncontrolled electronic copy and should not be relied upon by the client or any other recipient, as FPS cannot give assurance on the source or content of the document. FPS has used all reasonable skill, care and diligence in the preparation of this report.

The Flood Risk Assessment report has been designed to satisfy planning requirements, as outlined in Section 1. It is a desktop review of information provided by the client and from selected private and public databases. It only includes a site investigation where specifically referenced. This report does not make a detailed site-specific assessment of the suitability of the existing drainage on the Site. If this is required, then a site survey should be considered. FPS accepts no responsibility for the accuracy or completeness of third-party data reviewed within this assessment.

This report is provided under FPS Environmental Limited Standard Terms and Conditions.

Drawings



Legend

 Proposed Foot Bridge

 EA Main River

 Watercourse

Google Satellite

Scale @ A4: **1:600**

Drawing Title

Site Location Plan

Project

Nuns Bridges Thetford - IP24 2PZ

Client

Steven Dochray

Drawing No. & Revision

01

Date

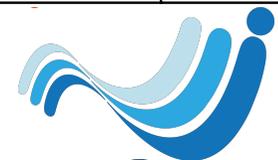
10/06/2025

Drawn By

RH

Approved By

LB



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environmental

www.fpsenvironmental.co.uk



Legend

- ▭ Proposed Foot Bridge
- EA Main River
- Watercourse

Scale @ A4: **1:5,000**

Drawing Title
Site Location Plan

Project
Nuns Bridges Thetford - IP24 2PZ

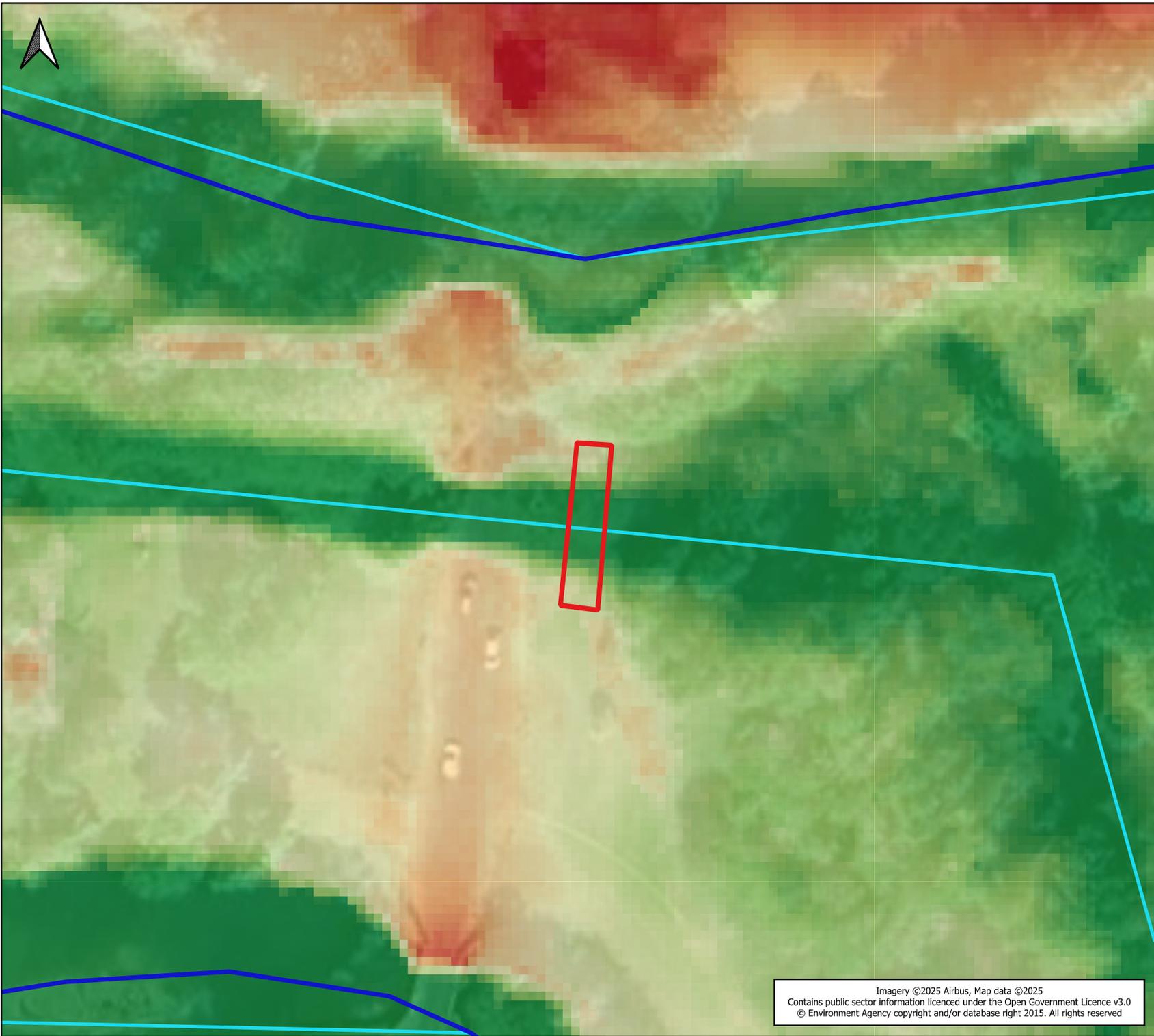
Client
Steven Dochray

Drawing No. & Revision	Date
02	10/06/2025

Drawn By	Approved By
RH	LB

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Legend

- Proposed Foot Bridge
- EA Main River
- Watercourse

LiDAR Data
(Metres above Ordnance Datum)

- 10.00
- 10.50
- 11.00
- 11.50
- 12.00

Google Satellite

Scale @ A4: **1:600**

Drawing Title
LiDAR Data - Derived Ground Levels

Project
Nuns Bridges Thetford - IP24 2PZ

Client
Steven Dochray

<small>Drawing No. & Revision</small> 03	<small>Date</small> 10/06/2025
---	-----------------------------------

<small>Drawn By</small> RH	<small>Approved By</small> LB
-------------------------------	----------------------------------



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Legend

- Proposed Foot Bridge
- EA Main River
- Watercourse
- EA Flood Zones
- Flood Zone 2
- Flood Zone 3
- Google Satellite

Scale @ A4: **1:600**

Drawing Title
EA Flood Map for Planning

Project
Nuns Bridges Thetford - IP24 2PZ

Client
Steven Dochray

<small>Drawing No. & Revision</small> 04	<small>Date</small> 10/06/2025
---	-----------------------------------

<small>Drawn By</small> RH	<small>Approved By</small> LB
-------------------------------	----------------------------------



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Legend

 Proposed Foot Bridge

 EA Main River

 Watercourse

Surface Water

0.2m Depth Likelihood

 High

 Medium

 Low

Google Satellite

Scale @ A4: **1:600**

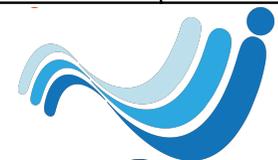
Drawing Title
Risk of Flooding from Surface Water
0.2m Depth Likelihood

Project
Nuns Bridges Thetford - IP24 2PZ

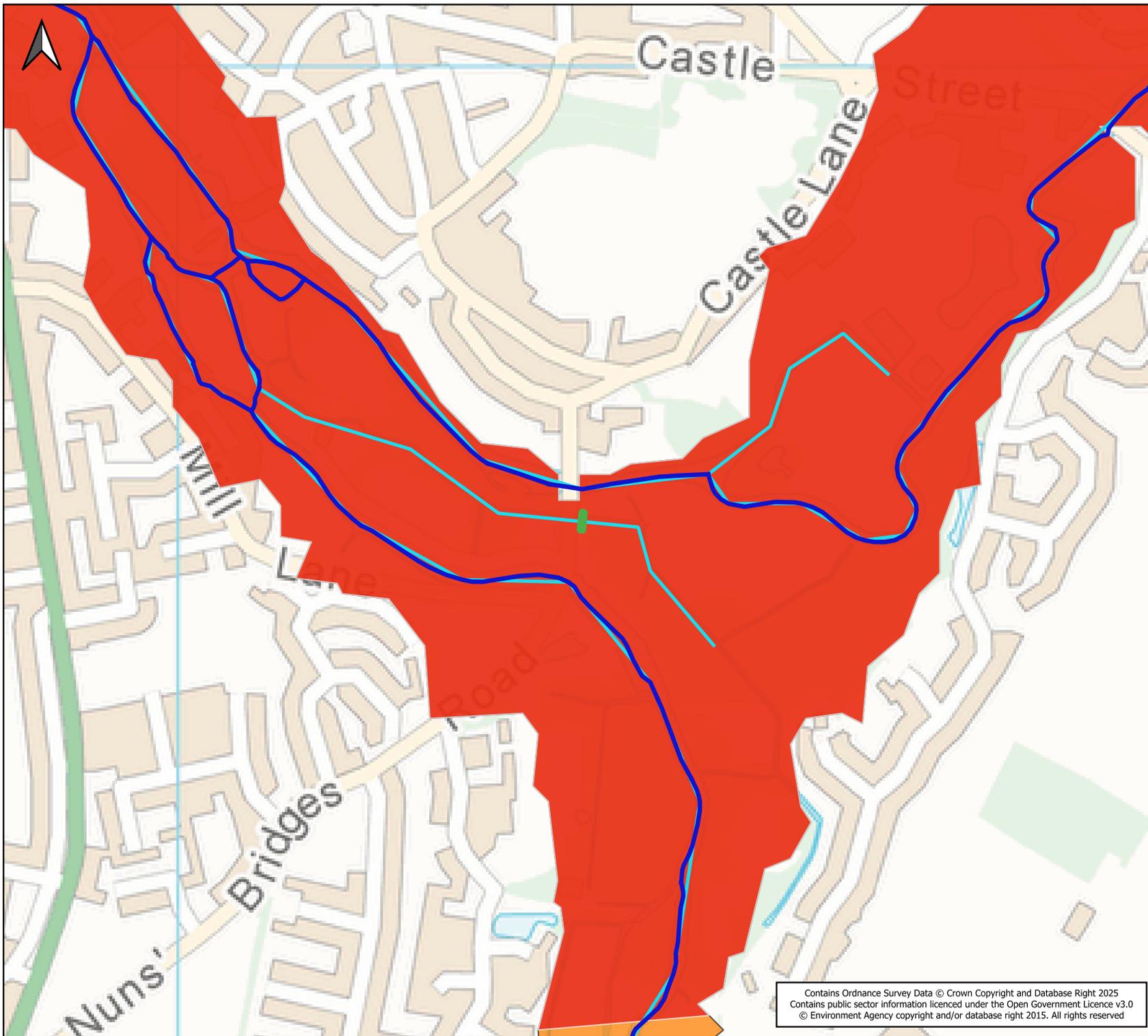
Client
Steven Dochray

Drawing No. & Revision	Date
05	10/06/2025

Drawn By	Approved By
RH	LB



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Legend

-  Proposed Foot Bridge
-  EA Main River
-  Watercourse
-  EA Flood Warning Area
-  EA Flood Alert Area

Scale @ A4: **1:5,000**

Drawing Title
EA Flood Warning & Alert Areas

Project
Nuns Bridges Thetford - IP24 2PZ

Client
Steven Dochray

Drawing No. & Revision	Date
06	10/06/2025

Drawn By	Approved By
RH	LB

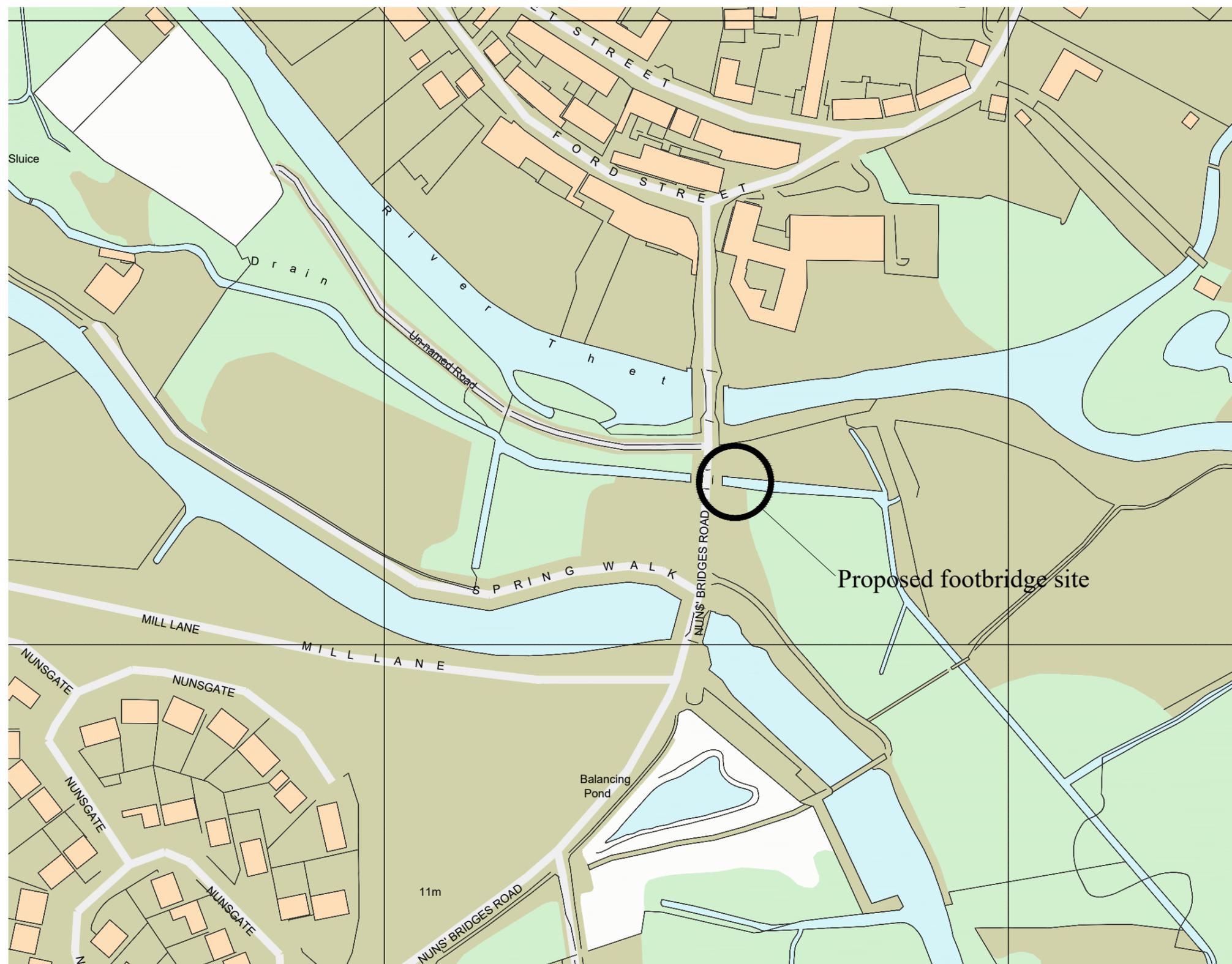
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Appendices

Appendix A

Site Plans and Details



Rev	Description	Date	By

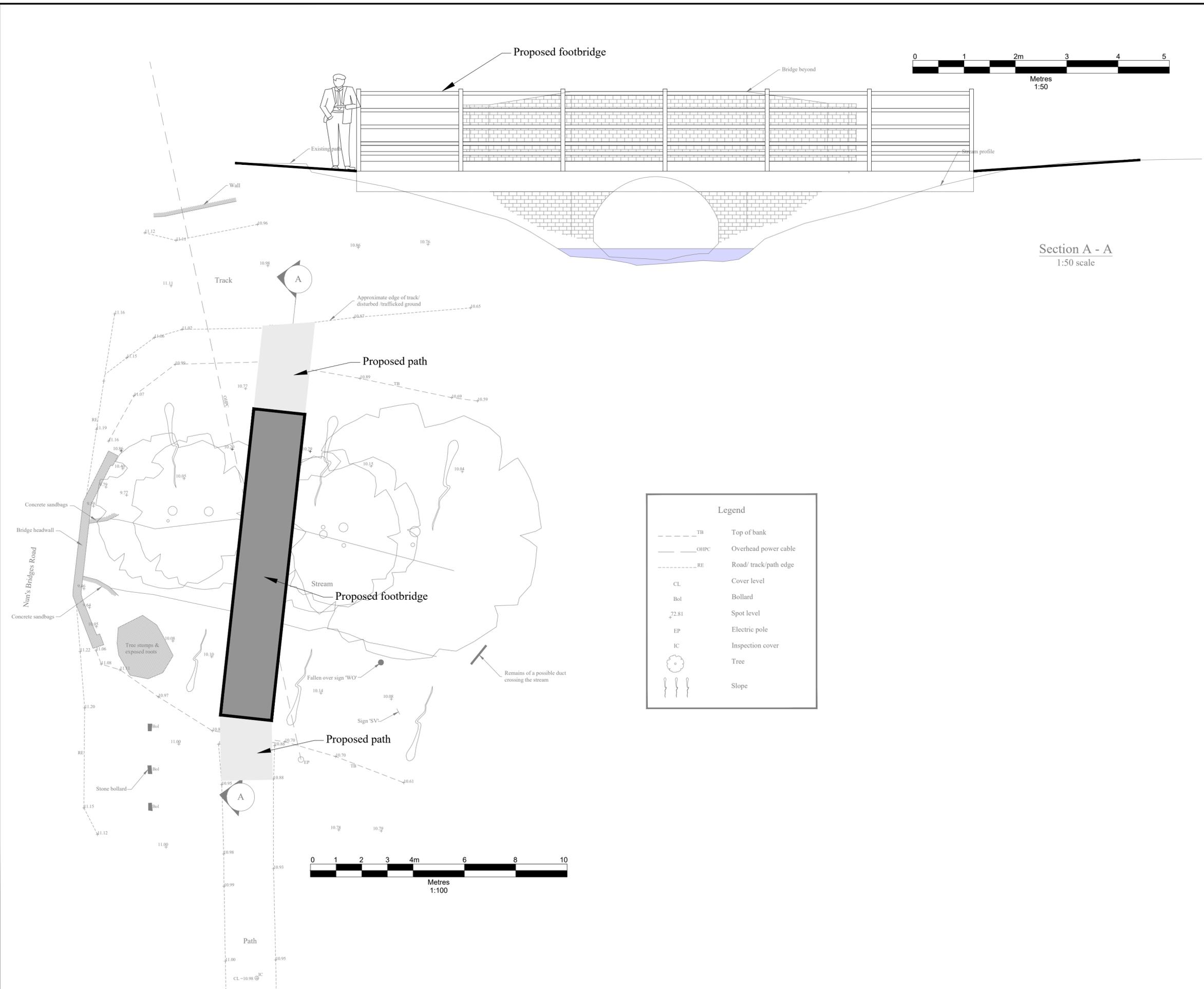


Project
Proposed Footbridge Adjacent to
Nun's Bridge, Thetford

Title
Location Plan

<i>Drawing No.</i> PFBANBTL0425	<i>Rev.</i> R00
<i>Date</i> 21/04/2025	<i>Drawn By</i> CHB

Drawing Scale
NTS @ A3



Section A - A
1:50 scale

Legend	
---	TB Top of bank
---	OHPC Overhead power cable
---	RE Road/ track/path edge
CL	Cover level
Bol	Bollard
72.81	Spot level
EP	Electric pole
IC	Inspection cover
(Tree symbol)	Tree
(Slope symbol)	Slope

Rev	Description	Date	By
R00	Planning	23/04/25	CHB



Project
**Proposed Footbridge Adjacent to
Nun's Bridge, Thetford**

Title
Proposed Layout

Drawing No.	Rev.
PFBANBTPL230424	R00
Date	Drawn By
23/04/2025	CHB

Drawing Scale
1:100 & 1:50 @ A2

Appendix B

EA Product 4 Data & Mapping

Flood risk assessment data



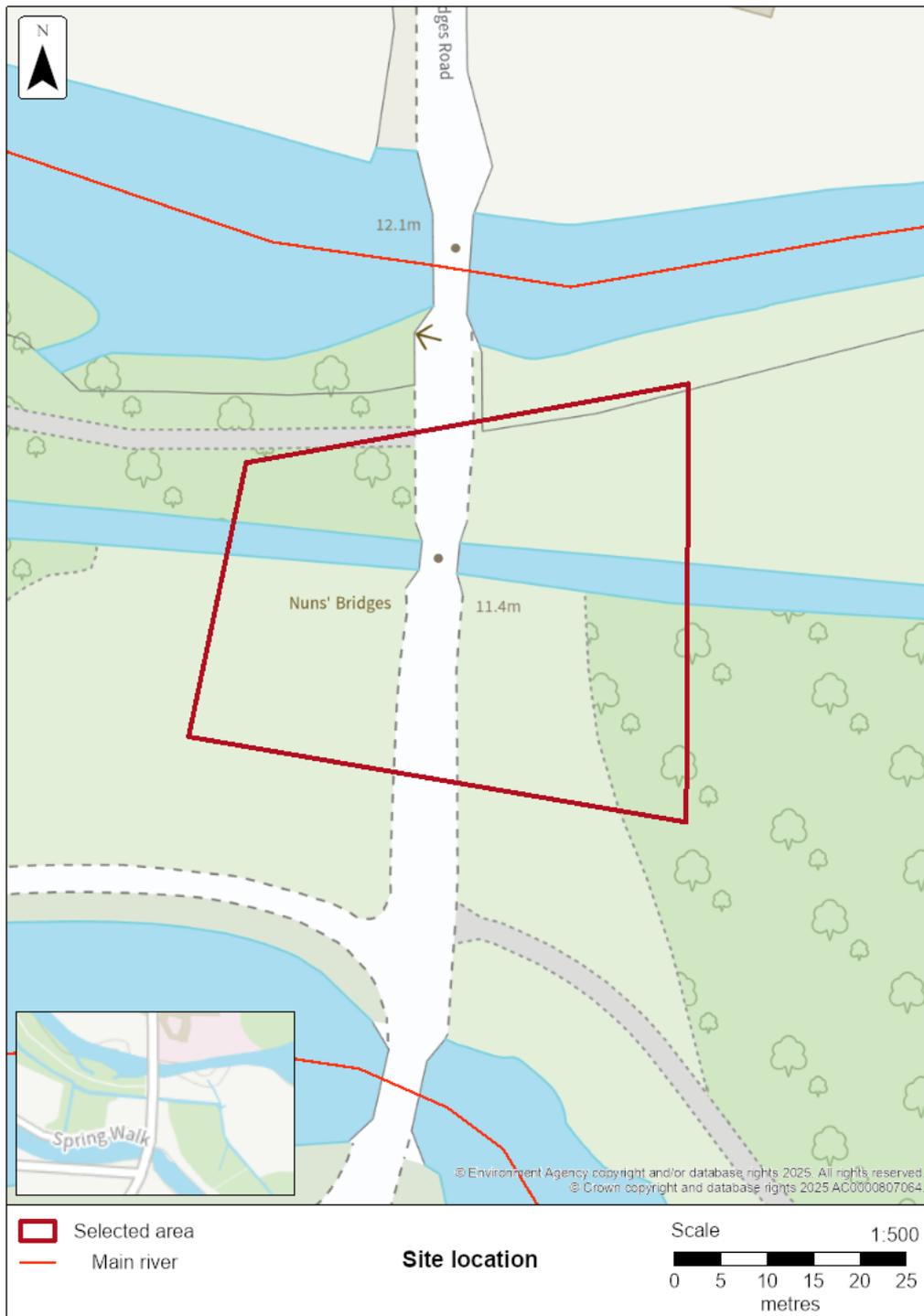
Location of site: 587382 / 282560 (shown as easting and northing coordinates)

Document created on: 1 May 2025

This information was previously known as a product 4.

Customer reference number: E2KN3C4694KG

Map showing the location that flood risk assessment data has been requested for.



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

- how to find information about surface water and other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- past floods
- modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Information that's unavailable

This document **does not** contain:

- flood defences and attributes

We aren't able to display flood defence locations and attributes as there are no formal flood defences in the area of interest.

Surface water and other sources of flooding

When using the surface water map on the [check your long term flood risk service](#) the following considerations apply:

- surface water extents are suitable for use in planning
- surface water climate change scenarios may help to inform risk assessments, but the available data fall short of what is required to assess planned development
- surface water depth information should not be used for planning purposes

To find out about other factors that might affect the flood risk of this location, you should also check:

- [reservoir flood risk](#)
- groundwater flood risk - you could use the [British Geological Survey groundwater flooding data](#), [groundwater: current status and flood risk](#) and the guide on [mining and groundwater constraints for development](#) - further information may be available from the lead local flood authority (LLFA)
- your local planning authority's SFRA, which includes future flood risk

Your Lead Local Flood Authority is Norfolk County.

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: EAn_EasternRivers_LittleOuse_MP4b_2015

Scenario(s): No defences exist fluvial, no defences exist climate change fluvial

Date: 1 November 2015

This model contains the most relevant data for your area of interest.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change



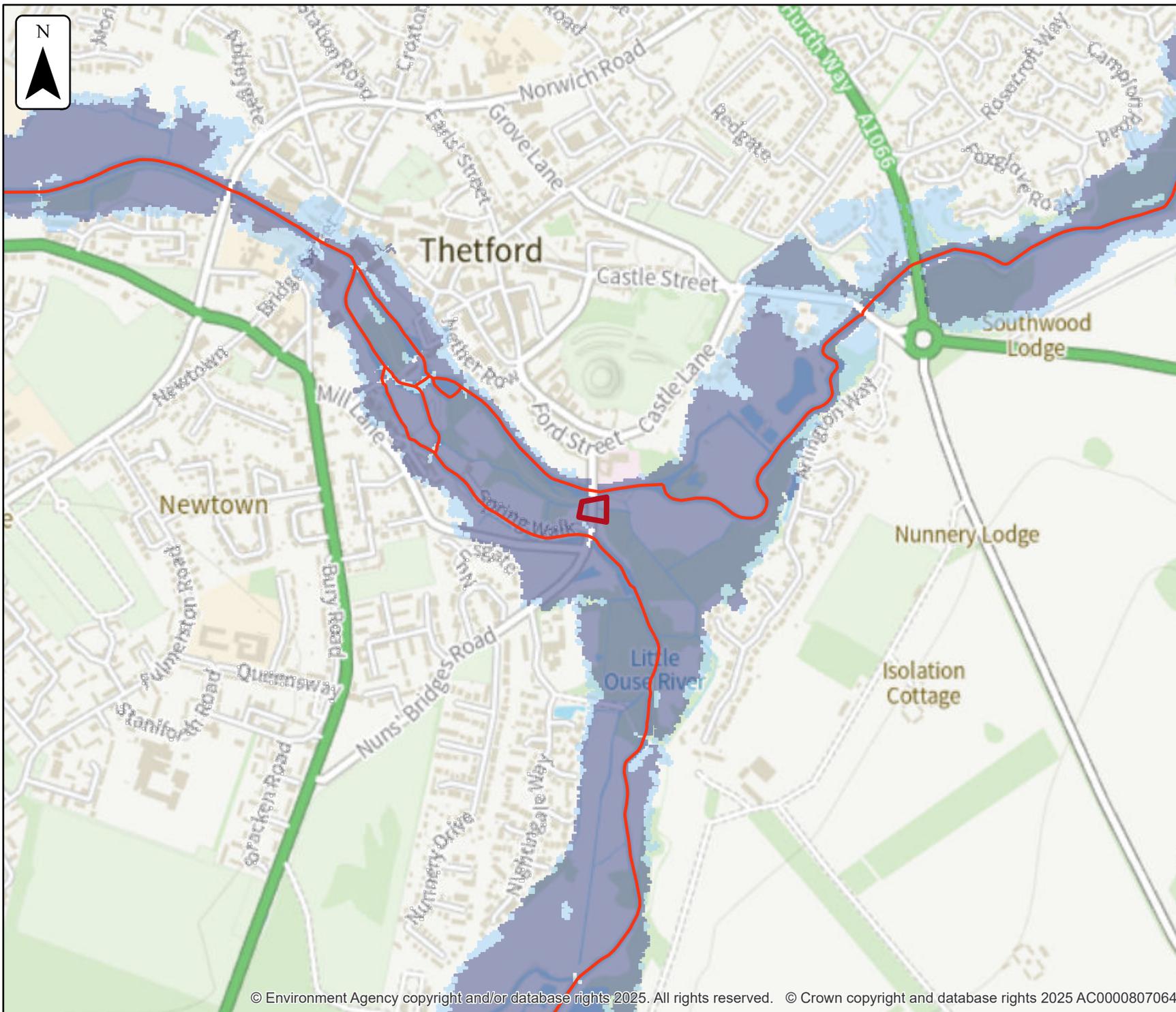
Flood map for planning

Location (easting/northing)
587382/282560

Scale
1:10,000

Created
1 May 2025

-  Selected area
-  Main river
-  Flood defence
-  Water storage area
- Flood Zones 2 and 3 Rivers and Sea
 -  Flood Zone 3
 -  Flood Zone 2



Past floods

Past flood events included in this document

The recorded flood outlines included in this document are for areas of land local to your site location that have been flooded by any of these sources:

- ephemeral water
- main rivers
- ordinary watercourses
- the sea
- unknown

Data limitations

The outlines do not include flooding from:

- drainage where rainfall has led to surface water ponding or overland runoff
- artificial, water-bearing sewer, water supply and wastewater treatment pipelines

Changes to flood defences

The defences (also known as assets) that were in place may also have changed. For example, assets may have been built more recently than the last recorded flood outline.

What the recorded flood outlines dataset is

The recorded flood outlines are a geographical information system (GIS) data layer that show our verified records of areas that have flooded in the past from:

- rivers
- the sea
- groundwater
- surface water

[Download the complete recorded flood outlines dataset](#), which includes data quality flags for outlines recorded after April 2020. This indicates the confidence we have in an outline.

Get flood information from other organisations

Contact Norfolk County Lead Local Flood Authority (LLFA) and your drainage board to get information about past flooding caused by surface water or drainage systems.



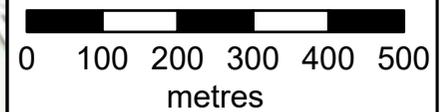
Past floods

Location (easting/northing)
587382/282560

Scale
1:10,000

Created
1 May 2025

-  Selected area
-  Main river
- Date of flood event
-  1968
-  1947



Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
1968	1968	unknown	unknown	Yes
1947	1947	unknown	unknown	Yes

Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios
- modelled node point map(s) showing the points used to get the data to model the scenarios and table(s) providing details of the flood risk for different return periods
- map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

Modelled scenarios

The following scenarios are included:

- No defences exist modelled fluvial: risk of flooding from rivers where there are no flood defences
- No defences exist climate change modelled fluvial: risk of flooding from rivers where there are no flood defences, including estimated impact of climate change



No defences exist climate change modelled fluvial extent

Location (easting/northing)
587382/282560

Scale Created
1:10,000 1 May 2025

Model name
**EAn EasternRivers
LittleOuse MP4b 2015**

-  Selected area
-  Main river
- Modelled flood extent
 -  1% AEP (+20%)

Flood extents may not be visible where they overlap other return periods





No defences exist modelled fluvial extent

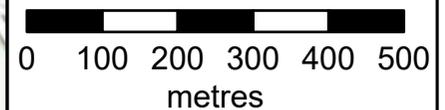
Location (easting/northing)
587382/282560

Scale Created
1:10,000 1 May 2025

Model name
**EAn EasternRivers
LittleOuse MP4b 2015**

-  Selected area
-  Main river
- Modelled flood extent**
-  5% AEP
-  2% AEP
-  1.33% AEP
-  1% AEP
-  0.5% AEP
-  0.1% AEP

Flood extents may not be visible where they overlap other return periods





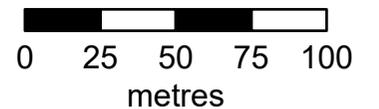
**No defences exist
climate change
modelled fluvial
node locations**

Location (easting/northing)
587382/282560

Scale Created
1:2,500 1 May 2025

Model name
**EAn EasternRivers
LittleOuse MP4b 2015**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

No defences exist climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	
				Level	Flow
1	1283190	587289	282630	11.11	23.30
2	1282865	587319	282609	11.13	23.90
3	1282992	587348	282604	11.13	23.85
4	1283131	587370	282599	11.12	23.84
5	1282934	587371	282509	11.15	21.75
6	1283120	587379	282503	11.35	21.75
7	1282987	587390	282491	11.38	21.13
8	1283061	587390	282595	11.30	23.84
9	1283060	587410	282599	11.32	23.53
10	1283107	587455	282606	11.37	19.36

Data in this table comes from the EAn EasternRivers LittleOuse MP4b 2015 model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.



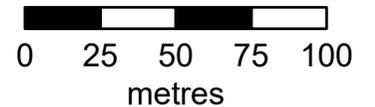
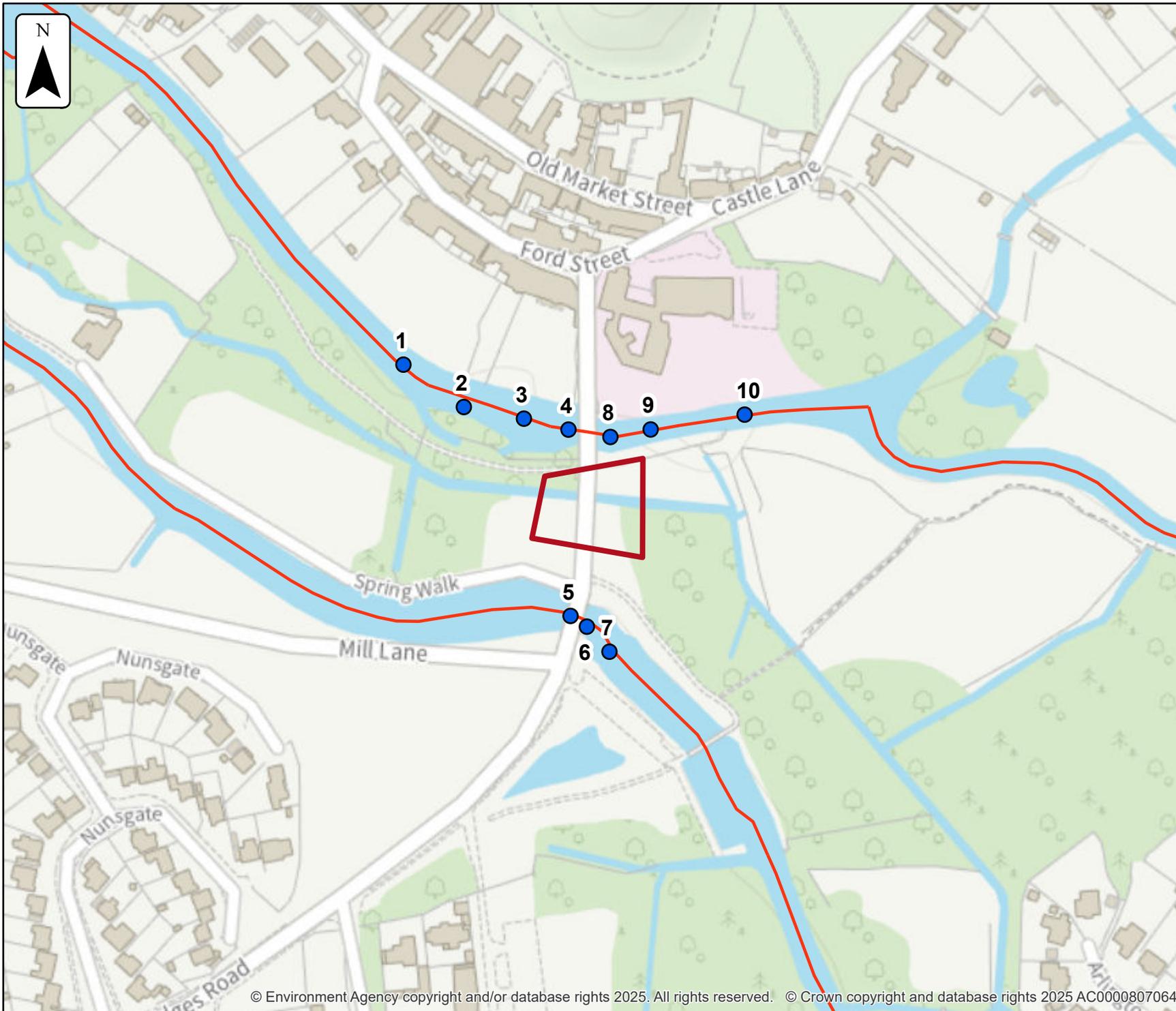
No defences exist modelled fluvial node locations

Location (easting/northing)
587382/282560

Scale Created
1:2,500 1 May 2025

Model name
**EAn EasternRivers
LittleOuse MP4b 2015**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

No defences exist

Label	Modelled location ID	Easting	Northing	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level
1	1283190	587289	282630	11.0	11.07	11.31
2	1282865	587319	282609	11.0	11.08	11.32
3	1282992	587348	282604	11.01	11.09	11.32
4	1283131	587370	282599	11.0	11.08	11.33
5	1282934	587371	282509	11.08	11.12	11.32
6	1283120	587379	282503	11.26	11.31	11.50
7	1282987	587390	282491	11.29	11.35	11.53
8	1283061	587390	282595	11.19	11.26	11.54
9	1283060	587410	282599	11.20	11.28	11.57
10	1283107	587455	282606	11.26	11.33	11.60

Data in this table comes from the EAn EasternRivers LittleOuse MP4b 2015 model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.

No defences exist

Label	Modelled location ID	Easting	Northing	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow
1	1283190	587289	282630	21.22	22.55	27.12
2	1282865	587319	282609	22.82	23.64	27.87
3	1282992	587348	282604	23.50	23.79	26.33
4	1283131	587370	282599	23.49	23.79	25.77
5	1282934	587371	282509	20.39	21.39	22.69
6	1283120	587379	282503	20.39	21.39	22.69
7	1282987	587390	282491	20.0	20.85	22.05
8	1283061	587390	282595	23.49	23.79	25.77
9	1283060	587410	282599	23.24	23.47	28.42
10	1283107	587455	282606	19.29	19.34	21.27

Data in this table comes from the EAn EasternRivers LittleOuse MP4b 2015 model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.



No defences exist modelled fluvial extent and height

Location (easting/northing)
587382/282560

Scale Created
1:500 1 May 2025

Model name
**EAn EasternRivers
LittleOuse MP4b 2015**

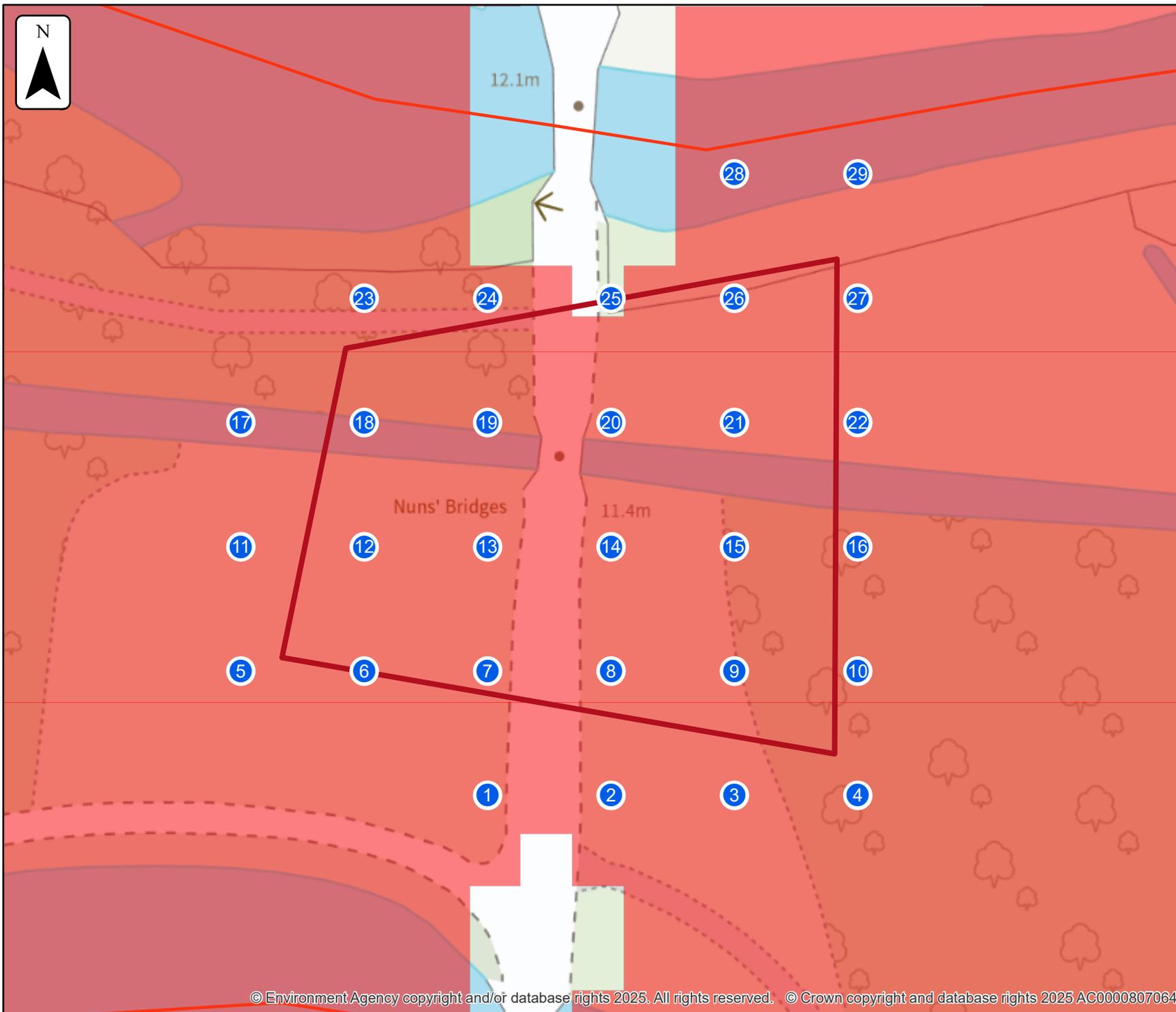
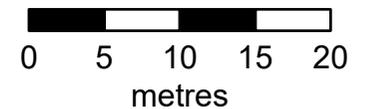
 Selected area

 Main river

Modelled 2D grid
Water level in mAOD

-  0 - 0.0
-  0.0 - 1.5
-  1.5 - 3.0
-  3.0 - 4.5
-  4.5 - 6.0
-  6.0 - 7.5
-  7.5 - 9.0
-  9.0 - 10.5
-  10.5 - 12.0

This map shows the
0.1% AEP height data



Sample point data

No defences exist

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
1	587372	282533	NoData	NoData	NoData	NoData	NoData	NoData	0.01	0.02	0.05	0.08	0.23
2	587384	282533	NoData	NoData	NoData	0.03	0.04	0.05	0.06	0.08	0.11	0.15	0.30
3	587396	282533	NoData	0.19	0.25	0.29	0.31	0.33	0.36	0.39	0.43	0.47	0.63
4	587408	282533	0.35	0.46	0.54	0.60	0.62	0.64	0.68	0.71	0.76	0.82	1.00
5	587348	282545	NoData	0.00	0.02	0.02	0.03	0.04	0.07	0.12	0.19	0.26	0.48
6	587360	282545	NoData	NoData	0.03	0.04	0.05	0.06	0.08	0.12	0.19	0.26	0.47
7	587372	282545	NoData	NoData	NoData	NoData	0	0	0.02	0.05	0.11	0.16	0.33
8	587384	282545	NoData	NoData	NoData	NoData	0.18	0.18	0.21	0.25	0.30	0.35	0.51
9	587396	282545	0.18	0.25	0.34	0.39	0.42	0.43	0.47	0.51	0.56	0.61	0.79
10	587408	282545	0.42	0.53	0.61	0.66	0.69	0.70	0.75	0.78	0.83	0.88	1.07
11	587348	282557	NoData	0.00	0.00	0.01	0.01	0.02	0.07	0.12	0.23	0.31	0.53
12	587360	282557	NoData	NoData	0.17	0.19	0.21	0.22	0.25	0.30	0.40	0.48	0.70

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
13	587372	282557	0.32	0.39	0.43	0.46	0.49	0.49	0.52	0.56	0.64	0.71	0.90
14	587384	282557	NoData	NoData	NoData	NoData	1.52	1.53	1.57	1.60	1.66	1.72	1.89
15	587396	282557	0.49	0.59	0.68	0.73	0.75	0.77	0.81	0.85	0.90	0.95	1.13
16	587408	282557	0.77	0.87	0.96	1.01	1.03	1.05	1.09	1.13	1.18	1.23	1.41
17	587348	282569	0.42	0.57	0.64	0.69	0.72	0.73	0.79	0.85	0.97	1.05	1.28
18	587360	282569	0.42	0.56	0.65	0.70	0.73	0.74	0.79	0.84	0.95	1.03	1.25
19	587372	282569	0.77	0.87	0.94	0.98	1.01	1.02	1.06	1.10	1.17	1.23	1.41
20	587384	282569	0.88	0.96	1.01	1.05	1.07	1.08	1.11	1.14	1.19	1.24	1.43
21	587396	282569	0.95	1.06	1.14	1.19	1.22	1.23	1.28	1.31	1.36	1.41	1.60
22	587408	282569	0.87	0.98	1.06	1.11	1.14	1.15	1.19	1.23	1.28	1.33	1.52
23	587360	282581	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.13
24	587372	282581	0.18	0.19	0.20	0.20	0.20	0.20	0.21	0.21	0.21	0.22	0.26

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
25	587384	282581	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
26	587396	282581	NoData	NoData	NoData	NoData	NoData	NoData	0.01	0.02	0.05	0.10	0.34
27	587408	282581	0.10	0.12	0.13	0.14	0.15	0.15	0.18	0.20	0.24	0.31	0.52
28	587396	282593	1.03	1.13	1.18	1.20	1.21	1.22	1.25	1.27	1.30	1.35	1.53
29	587408	282593	0.88	0.97	1.00	1.03	1.04	1.04	1.06	1.08	1.11	1.15	1.30
Max value in selected area:			1.29	1.39	1.47	1.52	1.54	1.56	1.60	1.63	1.70	1.75	1.93

Data in this table comes from the EAn EasternRivers LittleOuse MP4b 2015 model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

No defences exist

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height	Height	Height
1	587372	282533	NoData	NoData	NoData	NoData	NoData	NoData	11.14	11.18	11.22	11.26	11.41
2	587384	282533	NoData	NoData	NoData	11.12	11.14	11.16	11.20	11.23	11.28	11.32	11.48
3	587396	282533	NoData	10.99	11.07	11.13	11.15	11.17	11.21	11.24	11.29	11.34	11.52
4	587408	282533	10.88	10.99	11.07	11.13	11.15	11.17	11.21	11.24	11.29	11.35	11.53
5	587348	282545	NoData	10.82	10.86	10.87	10.88	10.89	10.91	10.97	11.04	11.11	11.33
6	587360	282545	NoData	NoData	10.88	10.90	10.92	10.93	10.95	10.99	11.06	11.13	11.34
7	587372	282545	NoData	NoData	NoData	NoData	11.05	11.05	11.08	11.11	11.17	11.23	11.40
8	587384	282545	NoData	NoData	NoData	NoData	11.13	11.15	11.18	11.22	11.27	11.32	11.48
9	587396	282545	10.88	10.99	11.07	11.13	11.15	11.17	11.21	11.24	11.29	11.34	11.52
10	587408	282545	10.88	10.99	11.07	11.13	11.15	11.17	11.21	11.24	11.29	11.35	11.53
11	587348	282557	NoData	10.72	10.76	10.78	10.79	10.80	10.85	10.90	11.01	11.09	11.32
12	587360	282557	NoData	NoData	10.78	10.81	10.83	10.84	10.87	10.92	11.02	11.10	11.32

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height	Height	Height
13	587372	282557	10.60	10.72	10.80	10.85	10.94	10.95	10.99	11.02	11.11	11.18	11.36
14	587384	282557	NoData	NoData	NoData	NoData	11.09	11.11	11.15	11.18	11.25	11.30	11.48
15	587396	282557	10.88	10.99	11.07	11.13	11.15	11.17	11.21	11.24	11.29	11.35	11.53
16	587408	282557	10.88	10.99	11.07	11.13	11.15	11.17	11.21	11.24	11.29	11.35	11.53
17	587348	282569	10.41	10.60	10.67	10.72	10.75	10.77	10.83	10.89	11.01	11.09	11.31
18	587360	282569	10.42	10.57	10.67	10.73	10.76	10.77	10.83	10.89	11.01	11.09	11.31
19	587372	282569	10.58	10.74	10.82	10.88	10.91	10.92	10.97	11.02	11.11	11.18	11.36
20	587384	282569	10.80	10.91	10.99	11.05	11.07	11.09	11.13	11.17	11.23	11.28	11.47
21	587396	282569	10.88	10.99	11.07	11.13	11.15	11.17	11.21	11.24	11.29	11.35	11.53
22	587408	282569	10.88	10.99	11.07	11.12	11.15	11.17	11.21	11.24	11.29	11.35	11.53
23	587360	282581	10.73	10.85	10.90	10.92	10.93	10.93	10.95	10.97	11.01	11.09	11.34
24	587372	282581	10.73	10.85	10.89	10.92	10.93	10.93	10.95	10.96	11.00	11.08	11.34

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height	Height	Height
25	587384	282581	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
26	587396	282581	NoData	NoData	NoData	NoData	NoData	NoData	11.20	11.21	11.24	11.30	11.53
27	587408	282581	10.88	10.99	11.07	11.12	11.14	11.16	11.19	11.21	11.26	11.32	11.54
28	587396	282593	10.76	10.92	10.99	11.03	11.05	11.06	11.10	11.14	11.19	11.27	11.56
29	587408	282593	10.76	10.92	11.00	11.04	11.06	11.07	11.11	11.15	11.20	11.28	11.57
Max value in selected area:			10.88	10.99	11.08	11.13	11.16	11.17	11.21	11.25	11.29	11.35	11.53

Data in this table comes from the EAn EasternRivers LittleOuse MP4b 2015 model. Height values are shown in mAOD, and depth values are shown in metres.

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'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



No defences exist climate change modelled fluvial extent and height

Location (easting/northing)
587382/282560

Scale Created
1:500 1 May 2025

Model name
**EAn EasternRivers
LittleOuse MP4b 2015**

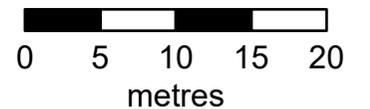
 Selected area

 Main river

Modelled 2D grid
Water level in mAOD

-  0 - 0.0
-  0.0 - 1.5
-  1.5 - 3.0
-  3.0 - 4.5
-  4.5 - 6.0
-  6.0 - 7.5
-  7.5 - 9.0
-  9.0 - 10.5
-  10.5 - 12.0

This map shows the
1% AEP +20% height data



Sample point data

No defences exist climate change

Label	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
			Depth	Height
1	587372	282533	0.10	11.28
2	587384	282533	0.18	11.35
3	587396	282533	0.49	11.37
4	587408	282533	0.85	11.38
5	587348	282545	0.31	11.16
6	587360	282545	0.30	11.17
7	587372	282545	0.19	11.26
8	587384	282545	0.38	11.35
9	587396	282545	0.64	11.38
10	587408	282545	0.92	11.38
11	587348	282557	0.35	11.14
12	587360	282557	0.52	11.15

Label	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
			Depth	Height
13	587372	282557	0.75	11.22
14	587384	282557	1.75	11.34
15	587396	282557	0.98	11.38
16	587408	282557	1.26	11.38
17	587348	282569	1.10	11.13
18	587360	282569	1.07	11.13
19	587372	282569	1.26	11.21
20	587384	282569	1.28	11.31
21	587396	282569	1.45	11.38
22	587408	282569	1.37	11.38
23	587360	282581	0.11	11.13
24	587372	282581	0.23	11.12

Label	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
			Depth	Height
25	587384	282581	NoData	NoData
26	587396	282581	0.14	11.34
27	587408	282581	0.34	11.35
28	587396	282593	1.37	11.31
29	587408	282593	1.17	11.32
Max value in selected area:			1.79	11.38

Data in this table comes from the EAn EasternRivers LittleOuse MP4b 2015 model. Height values are shown in mAOD, and depth values are shown in metres.

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'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

Your Lead Local Flood Authority is Norfolk County.

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

Help and advice

Contact the East Anglia Environment Agency team at enquiries_eastanglia@environment-agency.gov.uk for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for