FLOOD RISK ASSESSMENT
FOR A CHANGE OF USE
AT BRIDGE HOUSE, SURFLEET

FINAL REPORT

ECL1554/MIKE SIBTHORPE PLANNING

DATE JUNE 2025

ELLINGHAM CONSULTING LTD
Email: tim@ellinghamconsulting.co.uk

CONTENTS

1.0 INTRODUCTION

This Flood Risk Assessment has been prepared in accordance with National Planning Policy Framework (NPPF) and supporting planning practice guidance (PPG) on Flood Risk and Coastal Change.

In areas at risk of flooding or for sites of 1 hectare or more, developers are required to undertake a site-specific Flood Risk Assessment to accompany an application for planning permission. This Flood Risk Assessment has been produced on behalf of Kisimul Group Ltd in respect of a development that consists of the change of use to a residential care home at Bridge House, Surfleet.

A planning application for the proposed development is to be submitted by Mike Sibthorpe Planning.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is located at Bridge House, Park Lane, Surfleet, Spalding, PE11 4AF. The National Grid Reference of the site is 52515/32813.

The location of the site is shown in Figure 1.

Figure 1 – Location Plan (© OpenStreetMap contributors)

2.2 Existing Site

The site is on the northern side of Park Lane at the junction with Surfleet Road. The site consists of Bridge House, a two storey dwelling, an outbuilding, and the surrounding land. The River Glen forms the northern boundary of the site. The area of development is 0.16ha.

A topographic survey of the site is provided in Attachment 1. Ground levels around Bridge House are typically between +5.2m OD and +5.5m OD and the finished floor level is +5.55m OD. The eastern part of the site is lower with ground levels between +4.0m OD and +4.7m OD. The finished floor level of the outbuilding is +4.86m OD.

The site is in the Welland and Deepings Internal Drainage Board (IDB) District. Surface water at the site drains through a local network and hence to the IDB drain system. The nearest IDB maintained watercourse, Woods Lane Drain, is 120m south of the site.

The online British Geological Survey maps indicate that the site is likely to be underlain by Oxford Clay Formation mudstone. The bedrock is shown to be overlain with superficial deposits of clay and silt.

2.3 Proposed Development

The proposed development is the change of use to a residential care home.

2.4 Local Development Documents

The South East Lincolnshire Local Plan 2011 – 2036, adopted in March 2019, is the Local Plan for the district. Policy 4: Approach to Flood Risk states the requirements for flood risk reduction.

The South East Lincolnshire Level 1 and Level 2 Strategic Flood Risk Assessment (SFRA) was prepared in June 2017.

The Joint Lincolnshire Flood Risk and Drainage Management Strategy has been prepared by Lincolnshire County Council as the Lead Local Flood Authority. The purpose of the Strategy is to increase the safety of people across Lincolnshire by reducing the number of people at risk of flooding, increasing the resilience of local communities, and reducing the impact of flooding

2.5 Available Flood Risk Information

An extract from the Environment Agency Flood Map for Planning is shown in Figure 2. The site is located within Flood Zone 1, an area with a low probability of flooding.

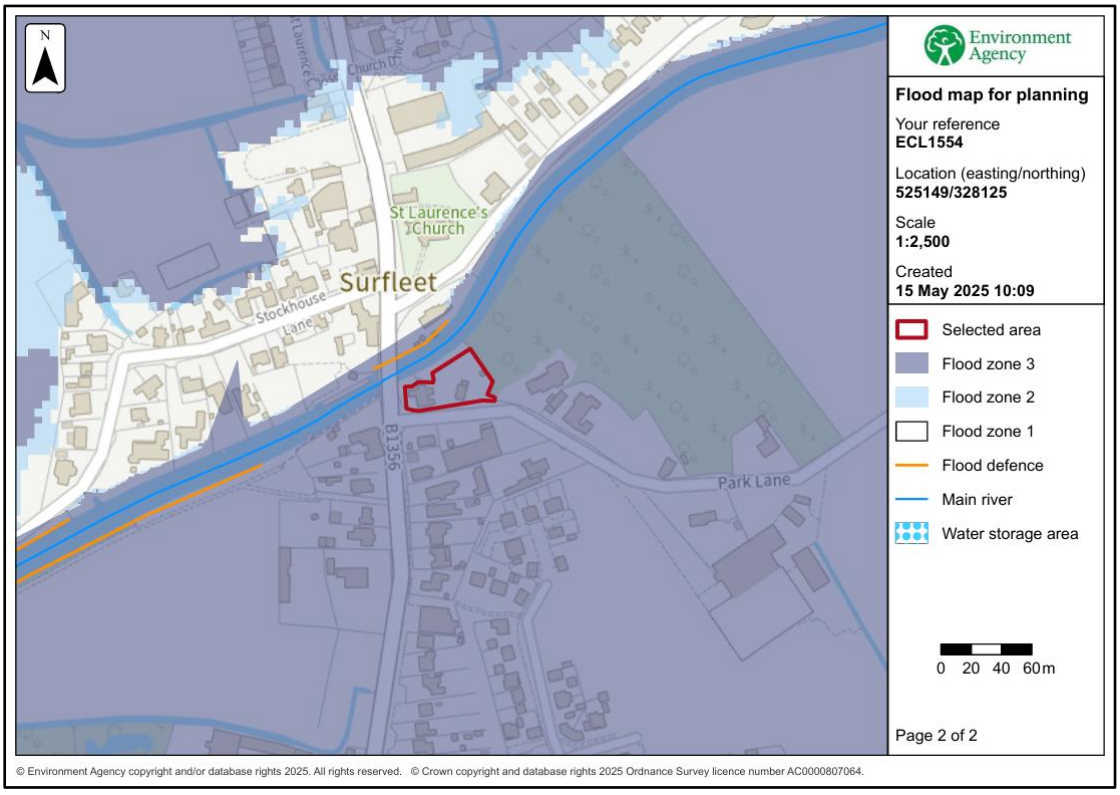


Figure 2 – Environment Agency Flood Map for Planning

The Environment Agency Long Term Flood Risk maps provide an indication of the risk from the primary sources of flooding. The details provided with these maps are summarised in Table 1. The depth of flooding identified is the maximum depth that occurs during a low chance (between 0.1% and 1% chance each year) event.

	Present Day		2050 Epoch	
	Risk of Flooding	**Depth (Low chance)**	**Risk of Flooding**	**Depth (Low chance)**
Rivers and the Sea	The site has a very low chance (less than 0.1% chance each year)	No data available	No data available	No data available
Surface Water	The site is outside the area with a low chance (between 0.1% and 1% chance each year)	Not at risk	The site is outside the area with a low chance (between 0.1% and 1% chance each year)	Not at risk
Reservoir	Outside of the area at risk.			

Table 1 – Environment Agency Long Term Flood Risk Maps

Table 2 shows the level of risk at the site within the South East Lincolnshire SFRA.

SFRA Map	Present Day	2116
Residual Flood Hazard Map for the 1% fluvial and 0.5% tidal event	The site is in the 'Danger for Most' area	The site is in the 'Danger for Most' area
Residual Peak Depth Map for the 1% fluvial and 0.5% tidal event	The site is at risk of flooding with depths between 0.5m and 1.0m	The site is at risk of flooding with depths between 1.0m and 2.0m.

Table 2 – Flood Risk within SFRA Maps

Site specific flood risk assessment data provided by the Environment Agency is provided in Attachment 2.

3.0 FLOOD RISK VULNERABILITY

3.1 The Sequential and Exception Test

The NPPF requires the application of a Sequential Test to ensure that new development is in areas with the lowest probability of flooding.

The Exception Test is a method to demonstrate and help ensure that flood risk to people and property will be managed, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

3.2 Vulnerability Classification

Table 2 of the PPG Flood Risk and Coastal Change categorises different types of uses and development according to their vulnerability to flood risk. The proposed development is covered by the description of residential care homes and is classified as 'More Vulnerable'.

Table 3 of the PPG Flood Risk and Coastal Change sets out Flood Risk Vulnerability and flood zone 'compatibility'. The site is in Flood Zone 3 and the development is 'More Vulnerable' therefore it is necessary to complete the Exception Test.

PPG Flood Risk and Coastal Change defines that the lifetime of the development in terms of flood risk and coastal change is 100 years.

3.3 Application of the Sequential and Exception Test

It is for the Local Planning Authority, using the evidence provided and taking advice from the Environment Agency as appropriate, to consider whether an application passes the Sequential Test.

Paragraph 033 of planning practice guidance (PPG) on Flood Risk and Coastal Change states that 'The Sequential Test does not need to be applied for applications for Change of Use (except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site)'.

Paragraph 048 of the PPG states that 'A Change of Use may involve an increase in flood risk if the vulnerability classification of the development is changed. In such cases, the applicant will need to show in their flood risk assessment that future users of the development will not be placed in danger from flood hazards throughout its lifetime.' The mitigation measures proposed in Section 5.2 of this flood risk assessment are such that risks to future users are mitigated.

The Exception Test requires consideration of the wider sustainability benefits of a development and that the development would be safe and residual risks managed.

The South East Lincolnshire Local Plan 2011 – 2036 recognises the growing ageing population and the need for specialist health care provision. The proposed development will contribute to meeting this need.

Section 5 of this Flood Risk Assessment describes the flood mitigation measures and the management of the residual risks, demonstrating that this development will be safe and not increase flood risk elsewhere. The development is considered to pass the Exception Test.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The northern boundary of the site is formed by the River Glen. The risk of flooding at the site is reduced by high ground alongside the River Glen. The River Glen is a Main River and the responsibility of the Environment Agency.

There is a long-term strategy for the maintenance of the Environment Agency defences which is reviewed and updated periodically.

There is an extensive local drainage network managed by Welland and Deepings IDB. Woods Lane Drain, an IDB maintained watercourses, is 120m south of the site. The site and the surrounding land are within the Pinchbeck Marsh catchment and drain in a southerly direction to Pinchbeck Marsh Pumping Station which discharges to Vernatt's Drain.

During the operation and maintenance of its pumping stations, associated structures, and channel systems, the IDB seeks to maintain a general standard capable of providing flood protection to its district. A routine maintenance programme is in place to ensure that the Boards assets are commensurate with the standard of protection that is sought.

Current maintenance standards of the Welland and Deepings IDB and the Environment Agency are generally good.

4.2 Sources of Flooding

A summary of the sources of flooding is provided in Table 3.

Source of Flooding	Level of Risk
Drainage Network Flooding	The risk is assessed in Section 4.3.
Surface Water Flooding	Based upon the EA maps the risk is very low.
Fluvial Flooding	The risk is assessed in Section 4.3 and 4.5.
Tidal Flooding	The Environment Agency have advised the site is not considered to be at risk of tidal flooding.
Reservoir Flooding	Based upon the EA maps the site is not at risk of reservoir flooding.
Groundwater Flooding	There is no evidence to suggest the site is at risk of groundwater flooding.

Table 3 – Sources of Flooding

4.3 Probability of Flooding

The probability of flooding associated with blockages in the Welland and Deepings IDB drainage system is low due to the maintenance standards achieved and managed by the IDB.

Through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and developed areas of 1 in 20 years and 1 in 100 years, respectively. The risk associated with flood events that exceed the standard of protection provided is lowered due to the Welland & Deeping IDB main drains incorporating freeboard. This freeboard provides storage during the exceedance events.

Present day flood levels for the River Glen were provided by the Environment Agency. The flood levels (m AOD) at the model node adjacent to the site are shown in the Table 4 below.

Node	Annual Probability		
	10%	3.3%	1%
Glen 3773	4.17	4.21	4.26

Table 4 – Present day River Glen flood levels (m AOD)

Typical ground levels within the site are above the flood levels within Table 3. The site is not at risk during the 1% annual probability (1 in 100 chance each year) fluvial event.

4.4 Historic Flooding

During the preparation of this assessment, no evidence was discovered of the site being flooded.

4.5 Climate Change

Climate change is likely to impact the site through increased rainfall intensity and duration affecting the local drainage network and increased flood levels in the River Glen.

The Environment Agency peak river flow map shows that for the Welland Management Catchment the peak river flow central allowance is 17% and the higher allowance is 28% for the 2080's (100 year) timeframe.

The data provided by the Environment Agency included estimates for the 1% annual probability event with 20% climate change event and the 0.1% annual probability event with 20% climate change event.

During 1% annual probability event with 20% climate change the modelled flood level is +4.78m OD and the flow is 53.28m^3/s. During 0.1% annual probability event with 20% climate change the modelled flood level is +4.81m OD and the flow is 62.34m^3/s.

Based upon these flows and levels the flood level during the 1% annual probability event with 20% climate change event is estimated to be +4.80m OD

The eastern part of the site would be at risk if flood water within the site reached this level. The lowest ground levels are +4.0m OD therefore the maximum flood depth is 0.8m. Flood depths on the access routes within and into the site would be up to 0.1m.

The finished floor levels of the dwelling and outbuilding are above the fluvial flood level. In summary the existing floor levels are appropriate for the design life of the development (i.e. 100 years).

4.6 Residual Risk

The South East Lincolnshire SFRA includes maps demonstrating the impact of a breach in 2116. When the climate change allowances are applied to the combination of a 1% annual probability (1 in 100 chance each year) fluvial event and a 0.5% annual probability (1 in 200 chance each year) tidal event the majority of the site is at risk with a peak depth between 0.5m and 1.0m. An extract from this map is shown in Figure 3 below.

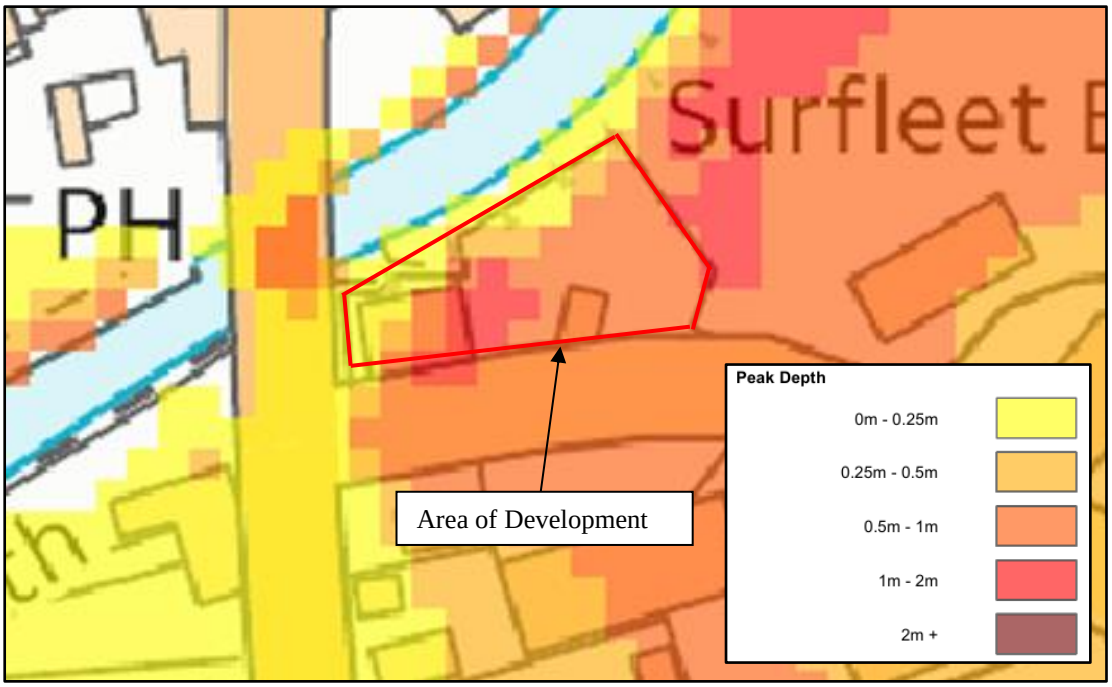


Figure 3 – SFRA 2116 Residual Flood Depth Map

The flood depths shown within Figure 3 do not correlate with the topographic survey undertaken at the site. For example, the western part of the site, around the dwelling, has ground levels between 0.5m and 1.0m higher than the eastern part of the site.

The Residual Flood Depth Maps confirm that the site is at risk however there is a low confidence in the flood depths indicated in some parts of the site. Whilst the lowest parts of the site could experience flood depths up to 0.8m the ground levels around the house are above the flood level. Similarly the ground level on the driveway on the eastern side of the outbuilding is such that the flood depth would be less than 0.25m.

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is low. Failure of Pinchbeck Marsh Pumping Station could lead to an increased level of risk within the IDB District.

The probability of the site flooding from any Environment Agency system is less than 1% annual probability (1 in 100 chance each year) because of the standards of the existing flood defences. Over time there will be a gradual increase in risk to the site due to climate change. During the design life of the development parts of the site are at risk with flood depths up to 0.8m however the existing finished floor levels of the dwelling and outbuilding are above the flood level.

The SFRA considers the residual risk associated with overtopping and a breach in the defences in 2115. The maps confirm that the site is at risk with depths between 0.5m and 1.0m in the lowest parts of the site however there is a low confidence in the flood depths indicated in some parts of the site.

There will be no increase in impermeable area associated with the development so there is no potential that flood risk will be increased elsewhere.

5.2 Mitigation Measures

Based upon the information available during the preparation of this flood risk assessment it is recommended that any refurbishment of the dwelling or outbuilding considers the use of flood resilient (recovery) construction for a depth of 0.5m above finished floor level.

The risk of flooding is lowered as the dwelling and outbuilding have two storeys.

The developer should ensure that the user of the dwelling and outbuilding is sufficiently aware of the risk of flooding, and the standard of the existing defences. The Environment Agency operates a flood warning system for properties at risk of flooding to enable householders to protect life or take actions to manage the effect of flooding on property. Floodline Warnings Service is a national system run by the Environment Agency for broadcasting flooding warnings. The user of the dwelling and outbuilding should register to receive flood warnings.

Should there be a failure of Pinchbeck Marsh Pumping Station and conditions were such to put properties and land at risk of flooding, the IDB would take emergency action to maintain the drainage level of service by using temporary pumping equipment.

It is recommended that surface water run-off is managed so that stormwater from the development will not affect any adjoining properties or increase the flood risk elsewhere.

6.0 CONCLUSIONS

As a result of the assessment, the following conclusions have been reached.

- The proposed development is the change of use to a residential care home at Bridge House, Park Lane, Surfleet.

- The site is located within an Internal Drainage Board catchment and through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and developed areas of 1 in 20 and 1 in 100 years, respectively.

- The proposed development is in Flood Zone 3. Part of the site is at risk during the 1% annual probability (1 in 100 chance each year) event including an allowance for climate change however the finished floor level of the existing building and outbuilding are above the flood level.

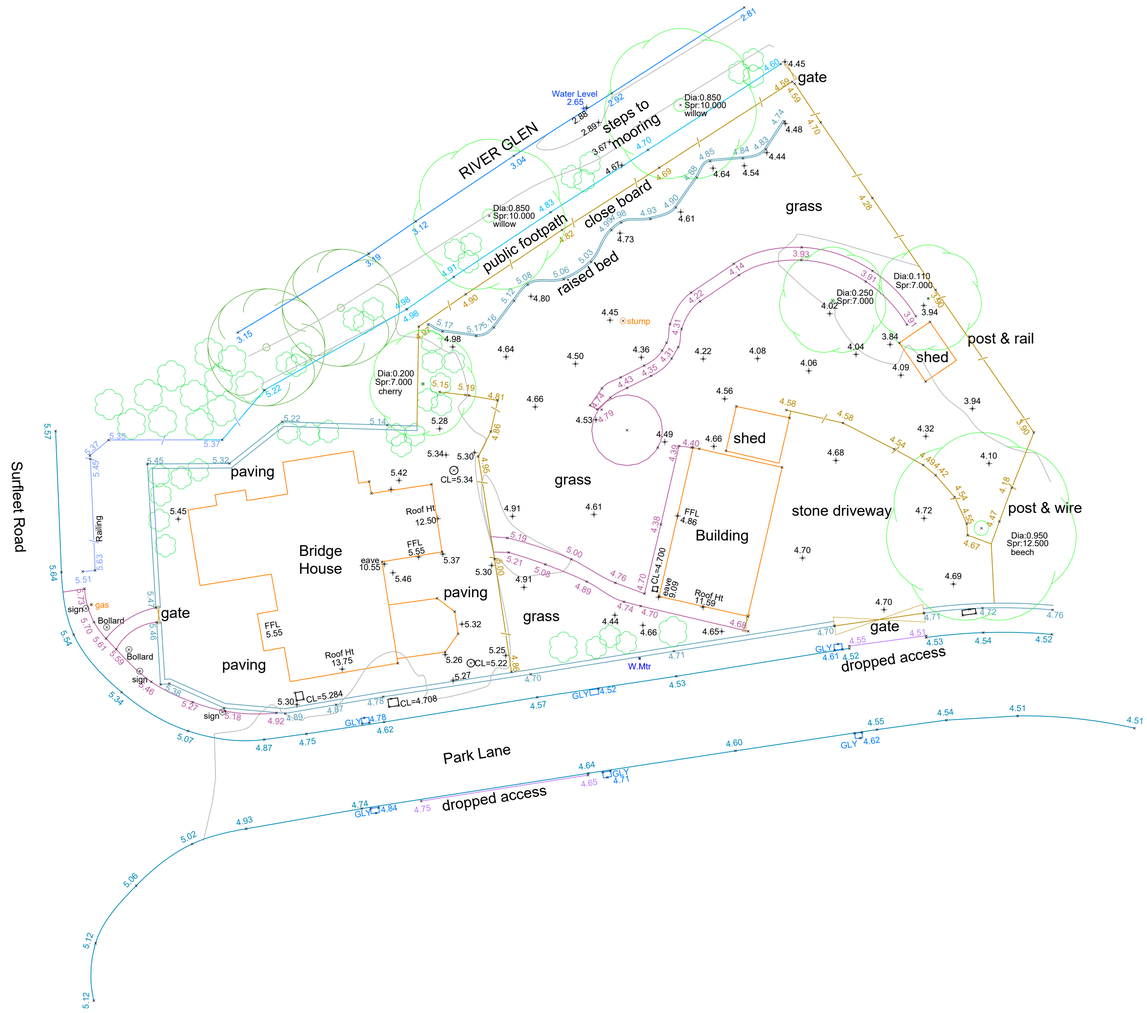
- There is a residual risk associated with a breach of the defences. During the design life of the development parts of the site are at risk with flood depths up to 0.8m.

- It is recommended that that any refurbishment of the dwelling or outbuilding considers the use of flood resilient (recovery) construction for a depth of 0.5m above finished floor level.

- The development passes the Sequential Test and Exception Test and is therefore suitable for the proposed location.

ATTACHMENT 1

TOPOGRAPHIC SURVEY
(DWG BH220525)



tree (indicative)

tree (Surveyed)

Fir tree

Planting - indicative

Dia:0.000 Tree - bole diameter
Spr:0000 Tree - Canopy spread
Text: Tree - Species

"W.Mtr Water meter
SV Sluice Valve
W.O. Wash out
A.V. Air Valve
CBL T.V.x3 cable tv box (x number in group)
gas Gas meter box or service entry
CL= 0.00 Manhole cover level
INV= 0.00 Invert of pipe
FFL Finished floor level
Bollard Bollard
BT BT Box
sign Road sign / street sign
Bench Bench
LP Lamp post
EP Electricity Pole

Edge of Tarmac (no kerb set) - 6.137
Pin Kerb Level (back) - 6.14
Top of Kerb Level (back of kerb) - 6.22
Road Channel Level (face of kerb) - 6.09

Spot Level 5.93
GLY5.97 Gully

Wall (height + material)
Foul Water Sewer
Surface Water Sewer
Top of Bank
Bottom of Bank
Track
Overhead Wire (s)
Excavation Scar
Post & Rail Fence
Verge
Concrete
Internal Wall
Steel Column

North.
(Indicative)

M.D Surveys
4 Beech Drive
Ryhall
Stamford
Lincolnshire
PE9 4EW
Tel 01780 763378
mob 07484 870454
email mdsurveys@btinternet.com

Job Title : Site survey - Bridge House - Surfleet - Spalding

Client : Kisimul Group Ltd

Drawn : MDS Date : 30th May 2025

Drawing number: BH220525 Scale 1:200 on A1 sheet

THE DEPICTION OF A WALL, FENCE OR HEDGE DOES NOT NECESSARILY REPRESENT A LEGAL BOUNDARY. IT IS THE CLIENTS RESPONSIBILITY TO CONFIRM LEGAL BOUNDARIES WITH THE VENDOR / CONTRACTOR

Survey information is as result of measurement to existing features and does not imply legal ownership of boundaries or land divisions. Where boundary alignment lines are added to the survey drawing and are taken from legal documents or other information supplied they are done so within the constraints of drawing quality and scale. They are provided on the basis of opinion and do not imply legal contract.
Drainage information is as a result of surface inspection only, no chambers have been accessed.
Manhole and pipe diameters should be checked before design and construction

This plan should only be used for its original purpose. No responsibility will be accepted if this plan if supplied to any party other than the original client.

All dimensions should be checked on site prior to design and construction.

DO NOT SCALE FROM THIS DRAWING

All tree heights and spreads are approximate
We have tried to identify tree types, however, if tree species is critical specialist advise should be sought.

The data used for the computation of horizontal & vertical control for this survey was recorded using survey grade GPS receivers and corrected data from Trimble VRS Services using Geoid model OSTN15 with OSGM 15 .
Station establishment was carried out in accordance with best practice guidelines issued by The Survey Association.

ATTACHMENT 2

ENVIRONMENT AGENCY
FLOOD RISK ASSESSMENT DATA

Tim Ellingham
tim@ellinghamconsulting.co.uk

Our ref: EIR2025-09459
Date: 06/06/2025

Dear Tim,

Flood Risk Information for Park Lane, Surfleet

The flood risk information for the above site is set out below and attached. It is important you read any contextual notes on the maps provided.

If you are preparing a Flood Risk Assessment (FRA) for this site, please note this information may not be sufficient by itself to produce an adequate FRA to demonstrate the development is safe over its lifetime. Additional information may be required to carry out an appropriate assessment of all risks, such as the consequences of a breach in the flood defences.

We aim to review our information on a regular basis, so if you are using this data more than twelve months from the date of this letter, please contact us again to check it is still valid.

Please read the letter in full as the information covered has been updated in **April 2025.**

1. Flood Map for Planning

The attached map includes the current Flood Map for Planning for your area. The map indicates the Area at Risk of Flooding (Flood Zone 3) and the Extreme Flood Outline (Flood Zone 2) **assuming no flood defences exist.**

The Area at Risk of Flooding shows the land that could be impacted from a flood with a 0.5% or greater chance of occurring in any year for flooding from the sea, or a 1% or greater chance of occurring in any year for fluvial (river) flooding.

The Extreme Flood Outline shows the land that could be impacted from a flood which has between a 1% and 0.1% chance of occurring in any year for fluvial (river) flooding, or between a 0.5% and 0.1% annual probability of sea flooding, or the highest recorded historic extent if greater.

In some locations, such as around the fens and the large coastal floodplains, showing the area at risk of flooding assuming no defences may give a slightly misleading picture in that if there were no flood defences, water would spread out across these large floodplains. This flooding could cover large areas of land but to relatively shallow depths and could leave pockets of locally slightly higher land as isolated dry islands. It is important to understand the actual risk of the flooding to these dry islands, particularly in the event of defence failure.

The Flood Map for Planning also shows the location of formal raised flood defences and flood storage reservoirs. It represents areas at risk of flooding for present day only and does not take account of climate change.

The Flood Map for Planning only indicates the extent and likelihood of flooding from rivers or the sea. It should also be remembered flooding may occur from other sources such as surface water sewers, road drainage, etc.

2. Recorded Flood Outlines

With regards to the history of flooding I can advise we do not have any records of flooding in this area. It is possible recent flooding may have occurred which we are currently investigating, therefore this information may be subject to change. It is possible other flooding may have occurred which other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist) have responsibility.

Please note, our Recorded Flood Outlines do not reflect the latest September 2024 – January 2025 flood incidents. Due to the scale of the events, it will take time to gather the information and verify the extent of the flooding before we are able to provide this information.

3. Schemes in the area

There are no ongoing capital projects to reduce or sustain the current flood risk to this area.

4. Fluvial Flood Risk Information

This site is considered to be at risk of flooding from main rivers.

The site may also be at risk from local ordinary watercourses for which other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist) have responsibility.

4.1 Fluvial Defence Information

There are no formal flood defences reducing the risk of flooding to this site.

4.2 Fluvial Modelled Levels and Flows

Available modelled fluvial flood levels and flows for the model nodes shown on the attached map are set out in the data table attached. This data is taken from the model named on the data table, which is the most up-to-date model currently available.

Please note these levels are “in-channel” levels and therefore may not represent the flood level on the floodplain, particularly where the channel is embanked or has raised defences.

Our models may not have the most up to date climate change allowances. In time we will update our models for the latest allowances. You should refer to 'Flood risk assessments: climate change allowances' to check if the allowances modelled are appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.

4.3 Fluvial Modelled Flood Extents

Please find attached a map showing available modelled flood extents, taking into account flood defences, for your area. This data is taken from the model named on the map, which is the most up-to-date model currently available.

In some cases the flood extents shown may not be from main river, but may be from other sources such as IDB lowland drainage networks.

4.4 Fluvial Hazard Mapping

For certain locations we have carried out modelling to map the maximum values of flood depth, velocity and hazard rating (danger to people) resulting from overtopping and / or breaching of defences at specific locations for a number of scenarios.
At present this information is available for fluvial flood risk in Northampton, Lincoln, Wainfleet and some isolated rural locations.
The number of locations we have this information for is expected to increase in time.

At present this site is not covered by any Environment Agency hazard mapping.

Detailed Hazard Mapping is available within the 2017 Update of South Holland Strategic Flood Risk Assessment. This can be downloaded via the following link:

http://www.southeastlincslocalplan.org/water/

5. Tidal Flood Risk Information

This site is not considered to be at risk from tidal flooding.

6. Development Planning

If you would like local guidance on preparing a flood risk assessment for a planning application, please contact our Sustainable Places team at LNplanning@environment-agency.gov.uk. It will help if you mention this data request and attach your site location plan.

We provide free preliminary advice; additional/detailed advice, review of draft FRAs and meetings are chargeable at a rate set to cover our costs, currently £100 (plus VAT) per hour of staff time. Further details are available on our website at https://www.gov.uk/guidance/developers-get-environmental-advice-on-your-planning-proposals.

General advice on flood risk assessment for planning applications can be found on GOV.UK at https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications

Climate change will increase flood risk due to overtopping of defences. Please note, unless specified otherwise, the climate change data included has an allowance for 20% increase in flow. Updated guidance on how climate change could affect flood risk to new development - 'Flood risk assessments: climate change allowances' was published on GOV.UK in **July 2021**. The appropriate updated climate change allowance should be applied in a Flood Risk Assessment.

You should also consult the Strategic Flood Risk Assessment produced by your local planning authority.

7. Data Licence and Other Supporting Information

We respond to requests for recorded information we hold under the Freedom of Information Act 2000 (FOIA) and the associated Environmental Information Regulations 2004 (EIR).

This information is provided in accordance with the Open Government Licence which can be found here: http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

Further information on flood risk can be found on the GOV.UK website at: https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather

Rights of appeal

If you are not satisfied with our decision, you can contact us within two calendar months to ask for the decision to be reviewed. We will then conduct an internal review of our response to your request and give you our decision in writing within 40 working days.

If you are not satisfied with the outcome of the internal review, you can then make an appeal to the Information Commissioner Office, the statutory regulator for EIR and the Freedom of Information Act 2002. The address is: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire. SK9 5AF.

Tel: 0303 123 1113 (local rate) or 01625 545 745 (national rate) | Fax: 01625 524 510
Email: casework@ico.org.uk | Website: www.ico.org.uk

8. Other Flood Risk Management Authorities

The information provided with this letter relates to flood risk from main river or the sea. The Flood Map for Surface Water can be viewed at https://www.gov.uk/check-long-term-flood-risk

Additional information may be available from other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist).

I hope we have correctly interpreted your request. If you have any queries or would like to discuss the content of this letter further please contact Christopher using the email address below and quoting our EIR reference number above.

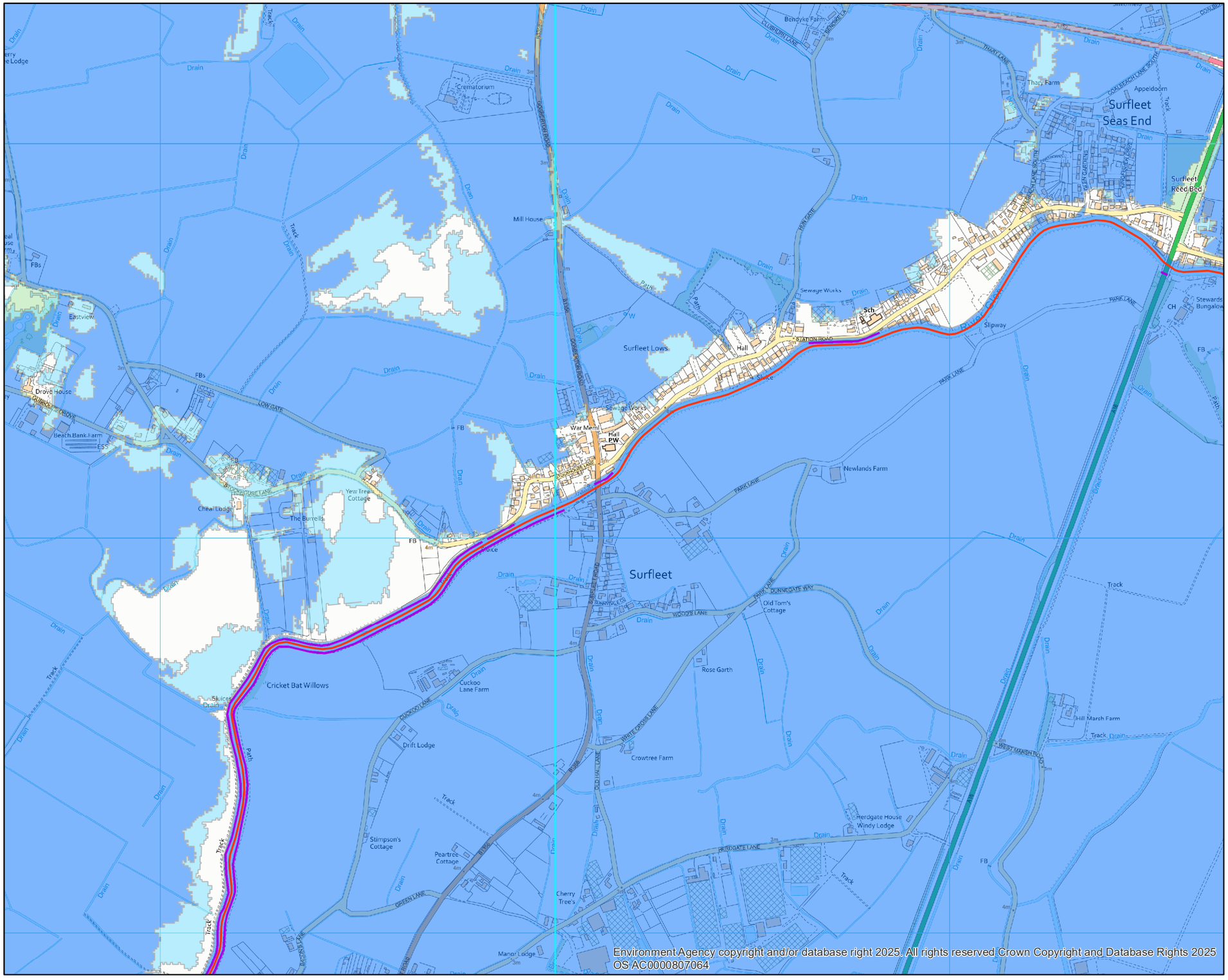
Yours sincerely,

+44 7385226602

for John O'Neill
Welland and Nene Partnerships and Strategic Overview Team Leader
e-mail PSOWN@environment-agency.gov.uk

Enc.
Flood Map for Planning
Modelled Node Points Map
Modelled Fluvial Levels and Flows Data Sheet
Modelled Flood Extent Maps

Flood Map centred on TF 25149 28125 - created June 2025 [Ref: EIR-2025-09459]



Environment Agency

Scale 1:10,000

N

Legend

- Main Rivers
- Raised Defences
- Flood Storage Areas

Flood Zones 2 and 3 Rivers and Sea Flood Zone

- Flood Zone 2
- Flood Zone 3

Dark blue shows the area that could be affected by flooding, either from rivers or the sea, if there were no flood defences. This represents land that could be impacted by a flood which has a 1% (1 in 100) or greater chance of occurring in any year from rivers or 0.5% (1 in 200) or greater annual probability of flooding from the sea.

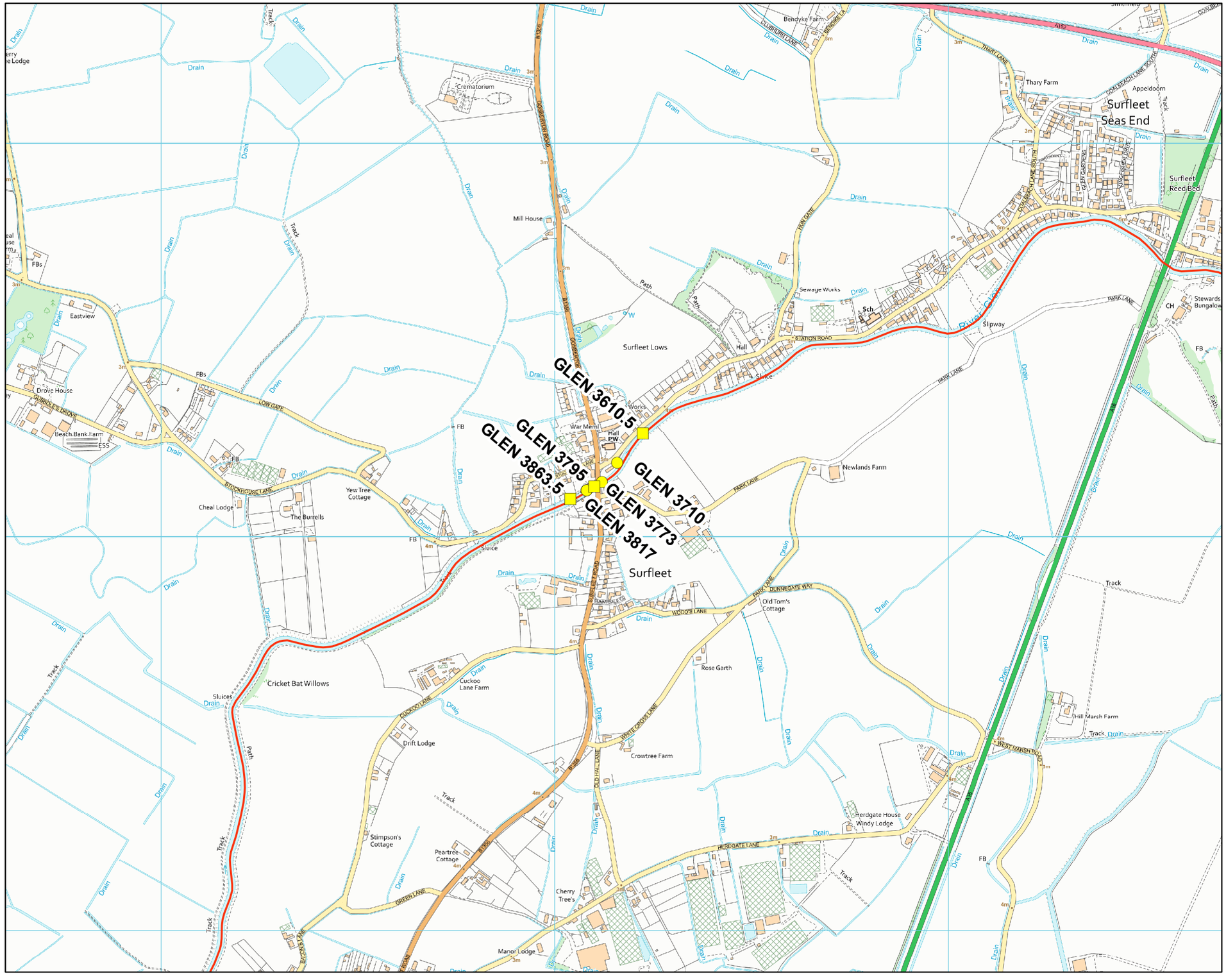
Light blue shows the extent of the Extreme Flood Outline. This represents land that could be impacted by a flood which has between a 1% and 0.1% (1 in 100 to 1 in 1000) chance of occurring in any year from rivers or between 0.5% and 0.1% (1 in 200 to 1 in 1000) annual probability of flooding from the sea, or the highest recorded historic extent if greater.

These two colours show the extent of the natural floodplain if there were no flood defences or certain other manmade structures and channel improvements. Sites outside the two extents, but behind raised defences, may be affected by flooding if the defences are overtopped or fail.

Created by the Partnerships and Strategic Overview Team, Kettering

Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

Modelled Nodes Map centred on TF 25149 28125 - created June 2025 [Ref: EIR-2025-09459]



Environment Agency

Scale 1:10,000

N

Legend

- Modelled Flows
- Modelled Levels
- Main Rivers

Created by the Partnerships and Strategic Overview Team, Kettering

Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

Fluvial Flood Levels (mODN)

The fluvial flood levels for the model nodes shown on the attached map are set out in the table below. They are measured in metres above Ordnance Datum Newlyn (mODN).

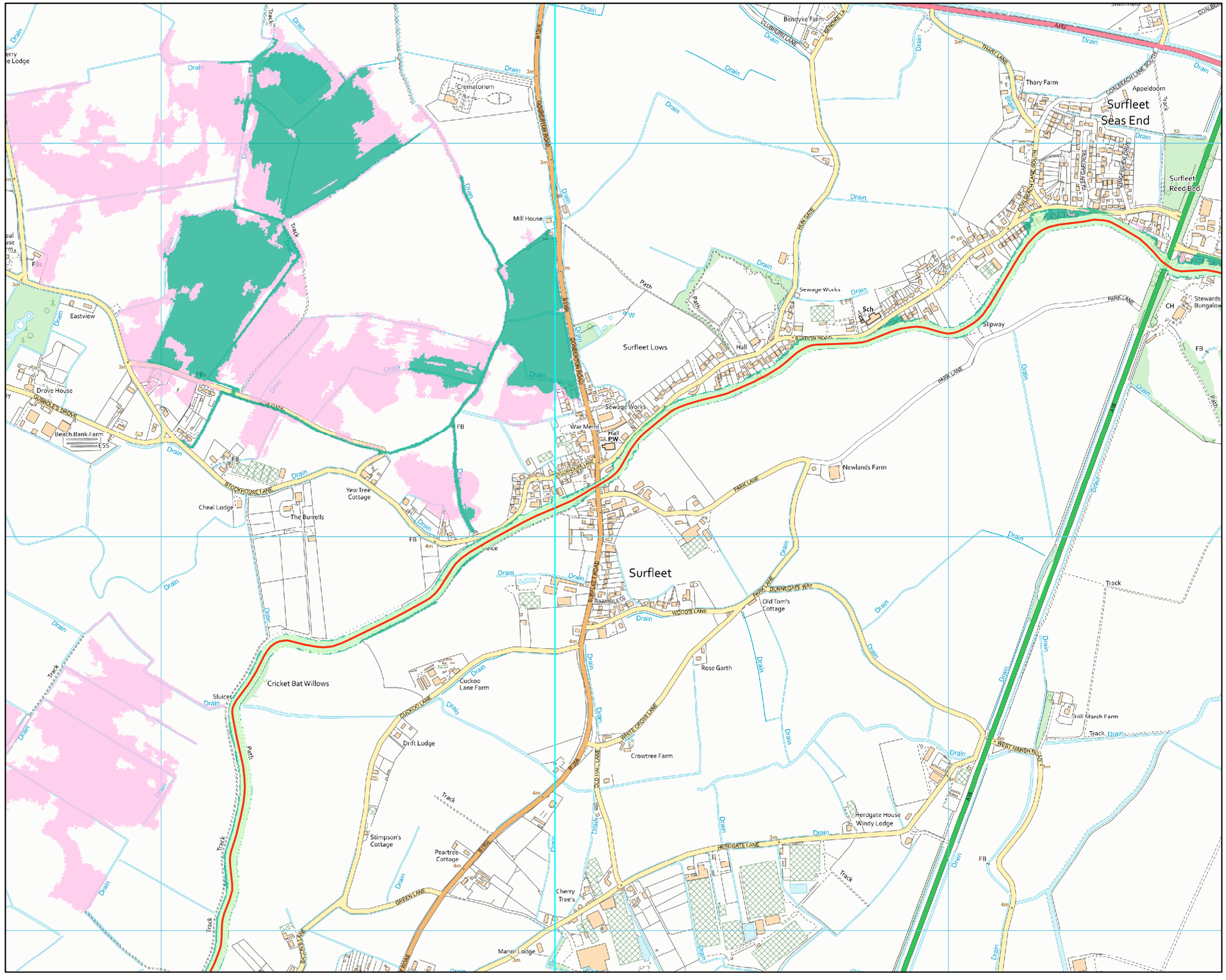
			Annual Exceedance Probability - Maximum Water Levels (mODN)											
Node Label	Easting	Northing	50% (1 in 2)	20% (1 in 5)	10% (1 in 10)	5% (1 in 20)	3.33% (1in 30)	2% (1 in 50)	1.33% (1 in 75)	1% (1 in 100)	1% (1 in 100) inc 20% Climate Change	0.5% (1 in 200)	0.1% (1 in 1000)	0.1% (1 in 1000) inc 20% Climate Change
GLEN 3710	525159	328188	3.96	4.11	4.17	4.21	4.21	4.23	4.25	4.26	4.77	4.30	4.38	4.82
GLEN 3773	525119	328139	3.96	4.11	4.17	4.21	4.21	4.23	4.25	4.26	4.78	4.31	4.38	4.81
GLEN 3817	525080	328118	3.96	4.11	4.17	4.22	4.21	4.23	4.25	4.26	4.78	4.31	4.39	4.81

Fluvial Flood Flows (m^3/s)

The fluvial flood flows for the model nodes shown on the attached map are set out in the table below. They are measured in metres cubed per second (m^3/s).

			Annual Exceedance Probability - Maximum Flows (m^3/s)											
Node Label	Easting	Northing	50% (1 in 2)	20% (1 in 5)	10% (1 in 10)	5% (1 in 20)	3.33% (1in 30)	2% (1 in 50)	1.33% (1 in 75)	1% (1 in 100)	1% (1 in 100) inc 20% Climate Change	0.5% (1 in 200)	0.1% (1 in 1000)	0.1% (1 in 1000) inc 20% Climate Change
GLEN 3610.5	525223	328263	34.62	37.58	39.71	41.93	41.86	43.61	43.90	44.61	54.16	47.00	55.91	63.13
GLEN 3795	525100	328129	33.82	36.86	38.84	40.99	41.15	42.49	43.12	43.47	53.28	46.15	55.14	62.34
GLEN 3863.5	525039	328097	33.48	36.53	38.44	40.55	40.82	41.95	42.75	42.94	52.85	45.85	54.77	61.97

Modelled Flood Extents (with defences) Model: Welland Glen (2016) centred on TF 25149 28125 - created June 2025 [Ref: EIR-2025-09459]



Environment Agency

Scale 1:10,000

N

Legend

- Main Rivers
- 3.33% (1 in 30) fluvial event
- 1% (1 in 100) fluvial event
- 1% (1 in 100) inc 20% climate change fluvial event
- 0.1% (1 in 1000) fluvial event
- 0.1% (1 in 1000) inc 20% climate change fluvial event

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