

FLOOD RISK ASSESSMENT

**RECONFIGURATION OF GROUND FLOOR OFFICE SPACE
AND CHANGE OF USE ON 1ST FLOOR TO RESIDENTIAL
FAR INGS ROAD, BARTON UPON HUMBER**

Lincolnshire Wildlife Trust
February 2026

DOCUMENT ISSUE RECORD

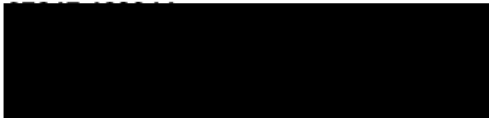
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Limitations

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EXECUTIVE SUMMARY

This Flood Risk Assessment is compliant with the requirements set out in the National Planning Policy Framework, and the associated online Planning Practice Guidance. It has been produced on behalf of Lincolnshire Wildlife Trust. This report demonstrates that the proposed development is not at significant flood risk, and will not increase flood risk to others, subject to the recommended flood mitigation strategies being implemented.

Policy

Development Type	Flood Zone	Vulnerability
BUILDING USED FOR OFFICES. ESSENTIAL RESIDENTIAL ACCOMMODATION	3	LESS VULNERABLE AND WATER COMPATIBLE

Climate Change Allowance

Peak River Flow

LOUTH, GRIMSBY & ANCHOLME MANAGEMENT CATCHMENT	
Allowance Category	Percentage Increase
CENTRAL	4

Sea Level Rise

Area of England	Allowance	2000-2035 (mm/year)	2036-2065 (mm/year)	2066-2095 (mm)/year	2096-2125 (mm/year)
Humber	Higher Central	5.5	8.4	11.1	12.4
	Upper End	6.7	11.0	15.3	17.6

Flood Risk and Mitigation

Flood Risk Source	Level of Risk Without Mitigation	Proposed Mitigation
Residual (Tidal)	High	Residential accommodation on 1 st floor. Flood evacuation plan.
Pluvial	Medium	
Fluvial Tidal Groundwater Sewers	Low	
Reservoir Canal/Artificial	None	

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1.0 INTRODUCTION

- 1.1 This Flood Risk Assessment, (FRA), is compliant with the requirements set out in the National Planning Policy Framework, (NPPF), and the associated online Planning Practice Guidance.
- 1.2 The FRA has been produced on behalf of Lincolnshire Wildlife Trust in respect of a planning application for the reconfiguration of ground floor office space and the change of use on the 1st floor to residential at Far Ings Road, Barton upon Humber.

Data Used

- 1.3 This FRA is based on the following information:
- LiDAR 2m DTM
 - Proposed Plans
 - British Geological Survey Drift & Geology Maps
 - Environment Agency Consultation
 - Environment Agency Data
 - British Geological Survey Hydrogeology Data

Existing Site

- 1.4 The site is located at grid reference TA0114422949 as shown in **Figure 1.1** below.



Figure 1.1 Site Location

- 1.5 LiDAR 2m DTM shows that the existing land level is approximately 2.95m AOD adjacent to the building, and the existing floor level of the building is approximately 3.10m AOD.
- 1.6 The online British Geological Survey maps indicates that the site is located on superficial deposits of clay and silt over a bedrock of chalk.

Proposed Development

- 1.7 The proposed development consists of the reconfiguration of ground floor office space and the change of use on the 1st floor to residential as shown on the extract of the proposed plan below in **Figure 1.2**

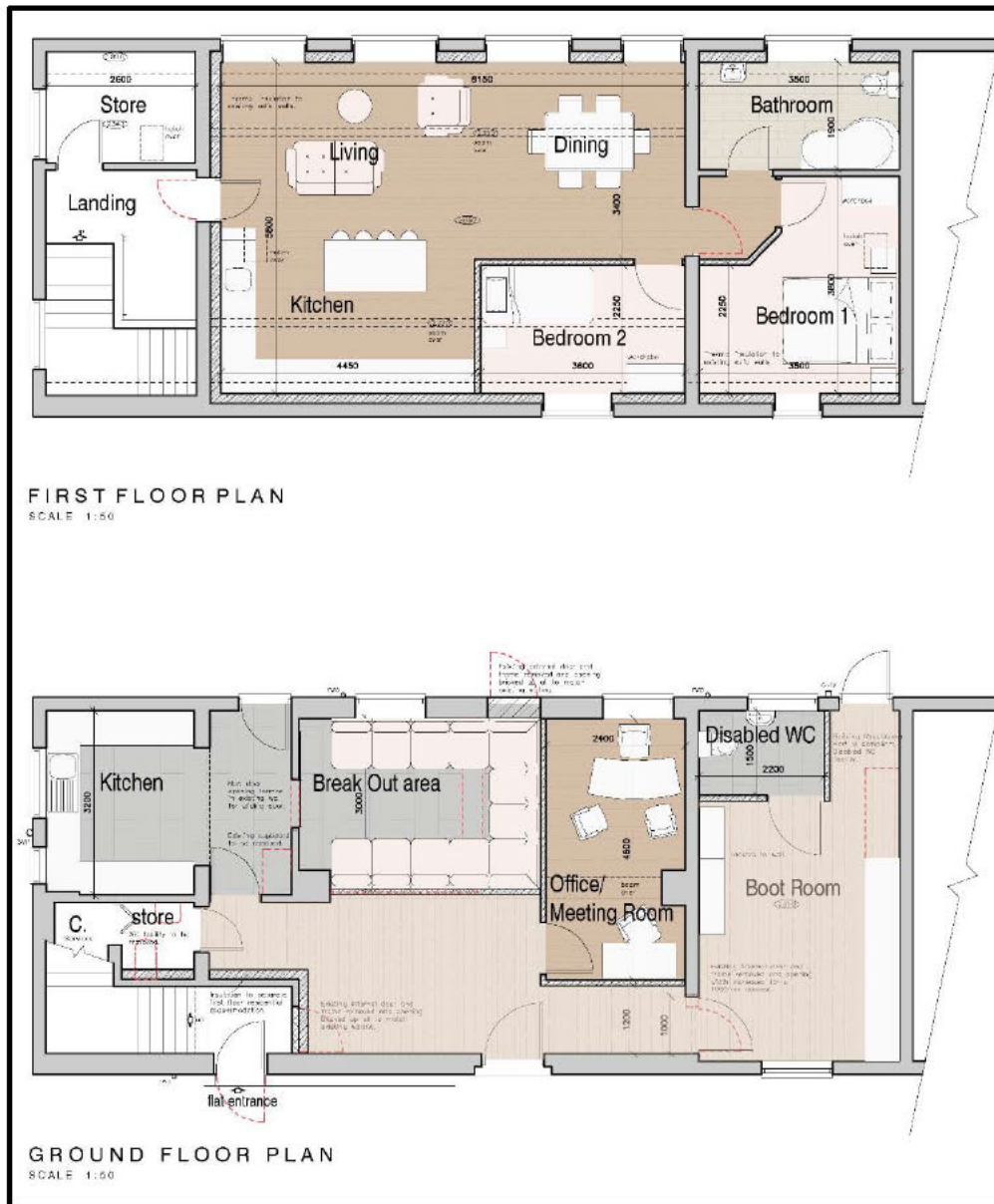


Figure 1.2 Proposed Plan

2.0 FLOOD RISK PLANNING POLICY

National Planning Policy Framework

- 2.1 The NPPF sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. A supporting web-based Planning Practice Guidance is also available.

Sequential Test

- 2.2 The NPPF requires a sequential risk-based approach to be undertaken to individual applications in areas known to be at risk now or in the future from any form of flooding. Within this context the aim of a Sequential Test is to steer new development to areas with the lowest risk of flooding from any source.
- 2.3 The sequential test should be used in areas known to be at risk now or in the future from any form of flooding, except in situations where a site-specific flood risk assessment demonstrates that no built development within the site boundary, including access or escape routes, land raising or other potentially vulnerable elements, would be located on an area that would be at risk of flooding from any source, now and in the future (having regard to potential changes in flood risk).

Flood Zone Definition

Flood Zone 1	Low probability (1 in 1000 annual probability of river or sea flooding (<0.1%)).
Flood Zone 2	Medium probability (between 1 in 100 and 1 in 1000 annual probability of river flooding (1.0%-.0.1%) or between 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5%-.0.1%) in any given year).
Flood Zone 3a	High probability (1 in 100 or great annual probability of river flooding (>1.0%) or 1 in 200 or greater annual probability of sea flooding (>0.5%) in any given year).
Flood Zone 3b	This zone comprises land where water must flow or be stored in times of flood. Land which would flood with an annual probability of 1 in 30 (3.3%), or is designed to flood in an extreme flood (0.1%) should provide a starting point for discussions to identify functional floodplain.

- 2.4 The aim is to steer new development to Flood Zone 1 and where there are no reasonably available sites in Flood Zone 1, local planning authorities in their decision making should consider the flood risk vulnerability of land uses and consider reasonably available sites in Flood Zone 2, applying the Exception Test if required. Only where there are no reasonably available sites in Flood Zones 1 or 2 should the suitability of sites in Flood Zone 3 be considered.
- 2.5 The guidance also sets out the vulnerability to flooding of different land uses and this land use is highlighted below.

Flood Risk Vulnerability Classification

Essential Infrastructure

- Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk.
- Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity supply including generation, storage and distribution systems; including electricity generating power stations, grid and primary substations storage; and water treatment works that need to remain operational in times of flood.
- Wind turbines.
- Solar farms

Highly Vulnerable

- Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding.
- Emergency dispersal points.
- Basement dwellings.
- Caravans, mobile homes and park homes intended for permanent residential use.
- Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure'.)

More Vulnerable

- Hospitals
- Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.
- Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
- Non-residential uses for health services, nurseries and educational establishments.
- Landfill and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

Less Vulnerable

- Police, ambulance and fire stations which are not required to be operational during flooding.
- **Buildings used for** shops; financial, professional and other services; restaurants, cafes and hot food takeaways; **offices**; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure.
- Land and buildings used for agriculture and forestry.
- Waste treatment (except landfill and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works which do not need to remain operational during times of flood.
- Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.
- Car parks.

Water Compatible

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- **Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan**

Exception Test

2.6 Having applied the sequential test, if it is not possible for development to be located in areas with a lower risk of flooding (taking into account wider sustainable development objectives), the exception test may have to be applied. The need for the exception test will depend on the potential vulnerability of the site and of the development proposed. The first part of the Exception Test is to show that the proposed development will provide wider sustainability benefits to the community that outweigh flood risk. The second part is the requirement for a FRA to demonstrate that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The guidance states when the application of the Exception Test is required and this is summarised below.

Flood Zone 1	Exception Test is not required	All.
Flood Zone 2	Exception Test is not required	Essential Infrastructure; More Vulnerable; Less Vulnerable; Water Compatible;
	Exception Test required	Highly Vulnerable.
Flood Zone 3a	Exception Test is not required	Less vulnerable; Water Compatible.
	Exception Test required	Essential Infrastructure; More Vulnerable.
	Should not be permitted	Highly vulnerable.
Flood Zone 3b	Exception Test is not required	Water Compatible.
	Exception Test required	Essential Infrastructure; Highly vulnerable;
	Should not be permitted	More vulnerable; Less vulnerable.

Development Proposals

- 2.8 The proposed development consists of a building used for offices and essential residential accommodation.

Flood Zones

- 2.9 The Flood Zones, including allowances for climate change up to 2125, are shown on **Figure 2.1** below which shows the site to be in Flood Zone 3.

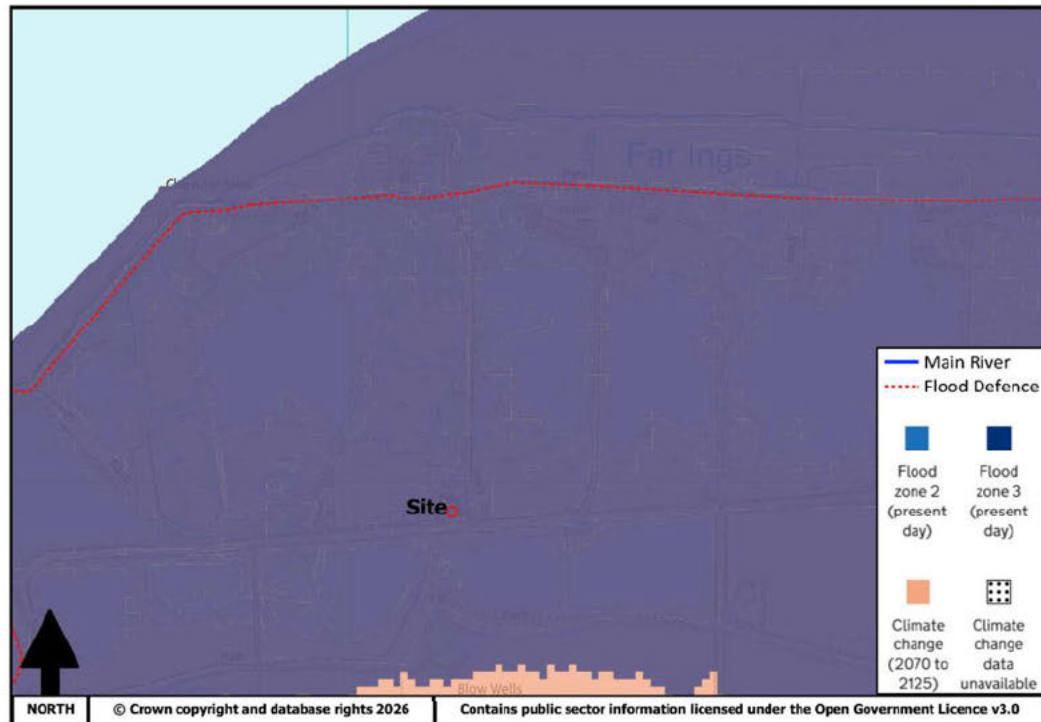


Figure 2.1 Flood Zones

Development Vulnerability

- 2.10 Buildings used for offices are less vulnerable.
- 2.11 Essential residential accommodation is water compatible.
- 2.12 The NPPF states that *“Applications for some minor development and changes of use should not be subject to the Sequential or Exception Tests but should still meet the requirements for site-specific flood risk assessments.”*
- 2.13 The proposed development is for a change of use and therefore not subjected to the Sequential and Exception Tests.
- 2.14 A FRA is required to ensure the development will remain safe over its lifetime from all sources of flooding and not increase flood risk elsewhere.

3.0 CLIMATE CHANGE

- 3.1 The NPPF sets out how the planning system should help minimise vulnerability and provide resilience to the impacts of climate change.
- 3.2 As the Government’s expert on flood risk on 19th February 2016 the Environment Agency, (EA), published revised climate change allowances to support the NPPF. The sea level rise allowances were revised on the 17th December 2019, the peak river flows revised on the 20th July 2021 and the peak rainfall allowances were revised on 10th May 2022.
- 3.3 The climate change allowances are based on projections and different scenarios of carbon dioxide (CO2) emissions to the atmosphere and provide predictions of anticipated change for:
- peak river flow and peak rainfall intensity by river Management Catchment;
 - sea level rise;
 - offshore wind speed and extreme wave height.

Peak River Flow Allowances

- 3.4 The peak river flow allowances show the anticipated changes to peak flow by Management Catchment with three allowances; central; higher central and upper end. This proposed development is in the Louth, Grimsby & Ancholme Management Catchment.
- 3.5 The appropriate allowance depends on the Flood Zone and vulnerability classification of the development and for this proposal it is appropriate to use the Central allowance.
- 3.6 The following climate change allowances in peak river flows therefore need to be applied:

LOUTH, GRIMSBY & ANCHOLME	
Allowance Category	Percentage Increase
Central	4

Table 3.1 Climate Change Allowances for Peak River Flow

Peak Rainfall Intensity Allowance

- 3.7 Increased rainfall affects river levels and land and urban drainage and should be applied to surface water drainage systems. However, the proposed development does not increase the impermeable area for these allowances to apply.

Sea Level Allowances

- 3.8 There is a range of allowances for each region and epoch or time frame for sea level rise as follows:

Area of England	Allowance	2000-2035 (mm/year)	2036-2065 (mm/year)	2066-2095 (mm)/year	2096-2125 (mm/year)
Humber	Higher Central	5.5	8.4	11.1	12.4
	Upper End	6.7	11.0	15.3	17.6

Table 3.2 Climate Change Allowances for Sea Level Rise

4.0 FLOOD RISK SOURCES

- 4.1 The following flood risk sources have been identified and where mitigation is required to reduce the flood risk this is discussed in **Section 5**.

Fluvial

Main River

- 4.2 Information provided by the EA confirms that the site is not affected by flooding from Main Rivers.

Ordinary Watercourses

- 4.3 The site lies within the district of the North East Lindsey Internal Drainage Board.
- 4.4 The risk of flooding from fluvial sources is low.

Tidal

- 4.5 The site is approximately 0.50km from the Humber estuary to the north.
- 4.6 Information provided by the EA confirms that the existing tidal defences protecting this site consist of earth embankments in combination with concrete crest. They are in fair condition and reduce the risk of flooding (at the defence) to a 5% (1 in 20) chance of occurring in any year. The EA inspect these defences routinely to ensure potential defects are identified.

Residual Risk

- 4.7 The site is protected from flooding by defences, including a raised defence. However, if that defence was to be breached or overtopped then flooding could occur.

Breaching

- 4.8 The EA have provided mapping which show the breach flood depths on and around the site.

Climate Change

- 4.9 **Figure 4.1** below shows the breach depths for the 0.5% (1:200) + climate change event.

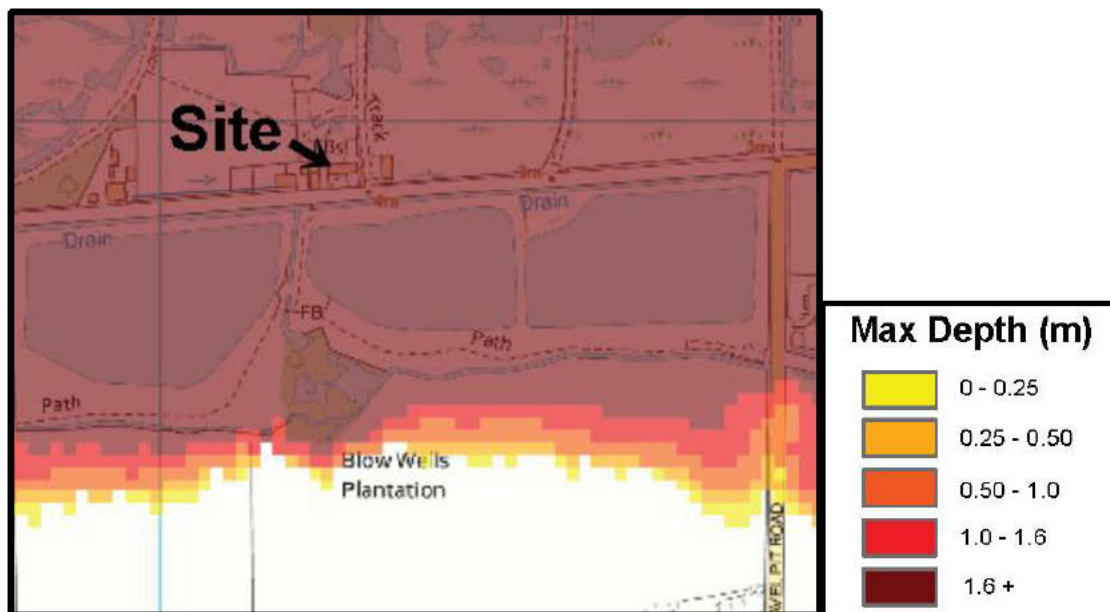


Figure 4.1 Breach Depths for 0.5% (1:200) + Climate Change Event

4.10 The 0.5% (1:200) + climate change event breach depths are greater than 1.60m AOD.

Overtopping

4.11 The EA have provided mapping which show the overtopping flood depths on and around the site.

4.12 The information provided by the EA confirms that the site is not at risk due to overtopping in the present day.

Climate Change

4.13 Whilst overtopping is shown due to the impact of climate change it has been assumed that as the EA and other organisations have a policy to take account of climate change then overtopping in the future has not been considered further.

4.14 The residual risk of flooding from tidal sources is high.

Pluvial

4.15 The EA have produced maps that show the chance of flooding from surface water to areas of land. Climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk between 2040 and 2060.

4.16 The flood Risk is displayed as one of three likelihood categories:

- High Greater than or equal to 1 in 30 (3.3%) chance of flooding in any year.
- Medium Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year.
- Low Less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year.

4.17 The climate change, (2040 – 2060), risk of flooding map is shown below in **Figure 4.2**.

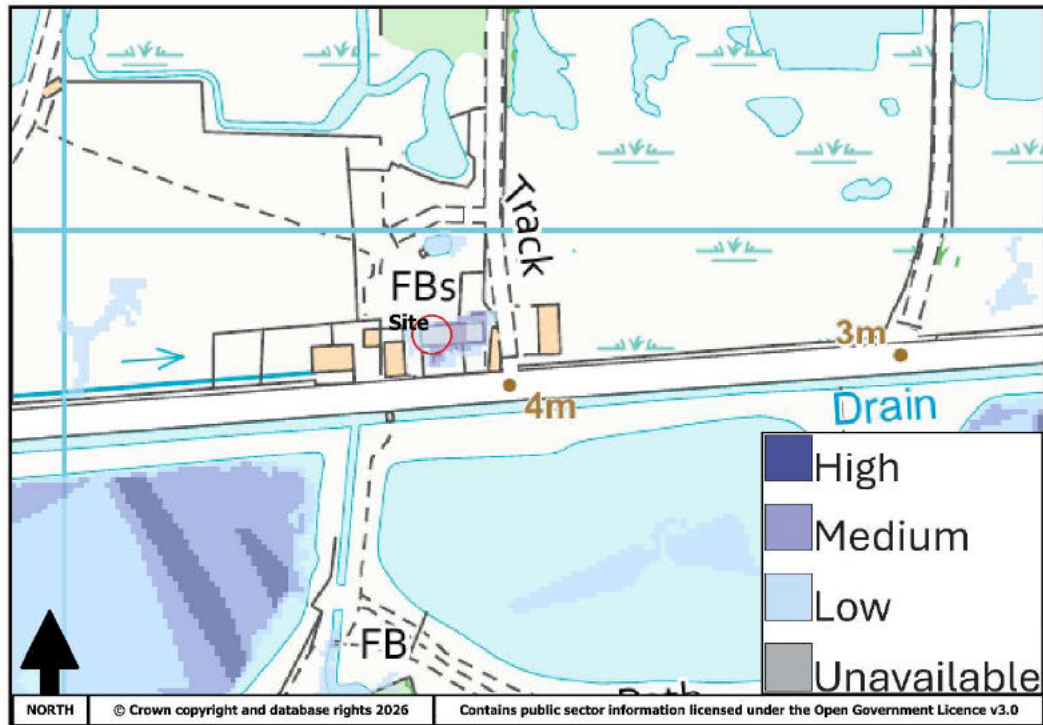


Figure 4.2 Risk of Flooding from Surface Water (2040 – 2060)

Flood Depths

4.18 The dataset also presents the likelihood of flooding for the following depths:

Flood Depth	Likelihood
1.20m	NONE
0.90m	NONE
0.60m	NONE
0.30m	LOW
0.20m	MEDIUM

Table 4.1 Flood Depths from Surface Water (2040 – 2060)

4.19 The risk of flooding from pluvial sources (2040 – 2060) is medium with a low likelihood flood depths will reach 0.30m.

Groundwater

4.20 The site is located on a highly productive aquifer and there are no known instances of groundwater flooding in the area.

4.21 The risk of flooding from groundwater is low.

Sewers

- 4.22 Public maintained sewers are unlikely to pose a significant flood risk as they are well maintained.
- 4.23 The risk of flooding from existing sewers is low.

Reservoirs

- 4.24 The EA has prepared reservoir failure flood risk mapping to show the largest area that might be flooded if a reservoir were to fail and release the water it holds.
- 4.25 The site is not at risk of flooding from reservoirs.

Canals and Artificial Water Bodies

- 4.26 The site is not at risk of flooding from canals.

5.0 MITIGATION

- 5.1 Section 4.0 has identified the sources of flooding which could potentially pose a risk to the site and the proposed development. This section of the FRA sets out the mitigation measures which are to be incorporated within the proposed development to address and reduce the risk of flooding to within acceptable levels.

Site Layout

- 5.2 The proposed development is at a high residual risk of flooding from tidal sources.
- 5.3 The 0.5% (1:200) + climate change event breach depths are greater than 1.60m AOD.
- 5.4 The existing land level is approximately 2.95m AOD adjacent to the building, and the existing floor level of the building is approximately 3.10m AOD.
- 5.5 The existing ground floor is used for office and meeting rooms and this will be reconfigured.
- 5.6 All the residential accommodation will be on the 1st floor.
- 5.7 Additional flood resilience measures will be included in the reconfiguration of the ground floor, where required, as follows;
- Water resisting airbricks.
 - Backwater valves and non-return valves.
- 5.8 It is recommended that the Lincolnshire Wildlife Trust sign up to the EA flood warning service and a flood evacuation plan be the subject of a condition which includes as a minimum;
- Potential sources of flooding and severity;
 - Flood warning trigger level;
 - Actions to be taken by staff on receipt of warning;
 - Identification of escape routes and potential flood depths, (see below);
 - Deploying flood protection and safe refuge;
 - Reoccupation of the Site;
 - Training and Exercising;

6.0 CONCLUSIONS

- 6.1 This FRA is compliant with the requirements set out in the NPPF and the associated online Planning Practice Guidance.
- 6.2 The FRA has been produced on behalf of Lincolnshire Wildlife Trust.
- 6.3 This report demonstrates that the proposed development is not at significant flood risk, and will not increase flood risk to others, subject to the recommended flood mitigation strategies being implemented.
- 6.4 The identified risks and mitigation measures are summarised below;

Flood Risk Source	Level of Risk Without Mitigation	Proposed Mitigation
Residual (Tidal)	High	Residential accommodation on 1 st floor. Flood evacuation plan.
Pluvial	Medium	
Fluvial Tidal Groundwater Sewers	Low	
Reservoir Canal/Artificial	None	

Table 6.1 Summary of Risk and Mitigation

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