

FLOOD RISK ASSESSMENT (FRA) FOR:

**PROPOSED CHANGE OF USE FROM CURRENT CAMPSITE TO
ACCOMMODATE 4 NO MOBILE HOMES FOR HOLIDAY USE**

Located at:

Manor Bungalow Campsite
Howgarth Lane, Friskney
Boston, Lincolnshire PE22 8PQ

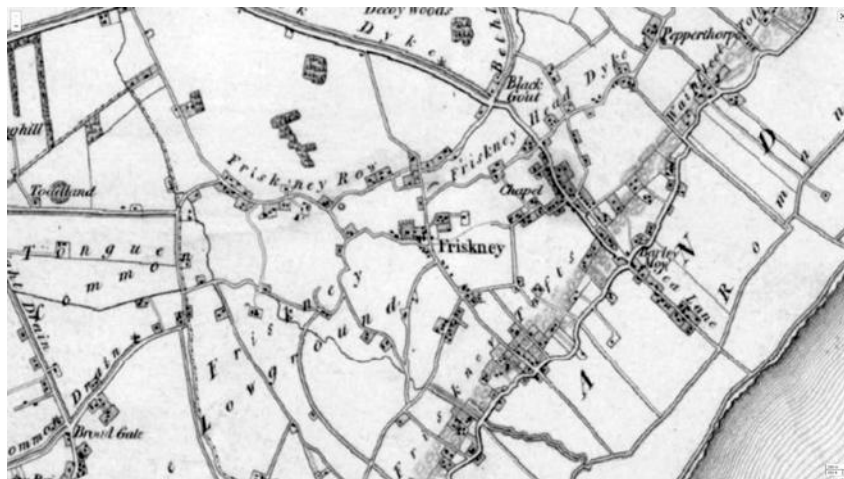
At the request of:

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Friskney ca 1805

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Application Site Details:

Location: Howgarth Campsite is located outside the village of Friskney approximately 0.75 km West of All Saints Church at the village centre.

OS Map Reference: 545321/355263

Three Words: admiral.email.interacts

Area: Campsite approx 0.3 ha. of the total Manor Bungalow Site of approx. 0.7 ha.

Authority: East Lindsey District Council

Flood risk: The area is designated flood risk level 3. (Environment Agency Flood Map for Planning, appendix 3)

1 Introduction:

- 1.1 This Flood Risk Assessment (FRA) accompanies a planning application for a change of use of an existing camp site to providing 4 no static caravans for holiday use.
- 1.2 The Government has placed increasing priority on the need to take full account o the risks associated with flooding at all stages of the planning development process. This course of action seeks to reduce future damage to property and risk of from incidents of flooding. National Planning Authority Policy does not prevent all development in flood risk areas and this would be unsustainable and result in economic stagnation, depriving existing communities of much needed homes, services, employment opportunities etc. It is in the essential interests of the vitality of settlements and for the wider economic and social well being of the community, that development opportunities are not unnecessarily constrained. Accordingly, this FRA will be as follows:
- Identify and address flood risk issues associated with the change of use.
 - Assess if the project is likely to be affected by flooding from all relevant sources both now and in the future.
 - Assess wether the project will increase the flood risk elsewhere.
 - Demonstrate the project is safe and where possible, reduce flood risk.
 - Propose measures with the identified effects and risks.

2 Site Location:

- 2.1 The application site is located to the west of the village centre .75 Km from the church, along the West side of Howgarth Lane. It is situated in an agricultural area (Figure 2)

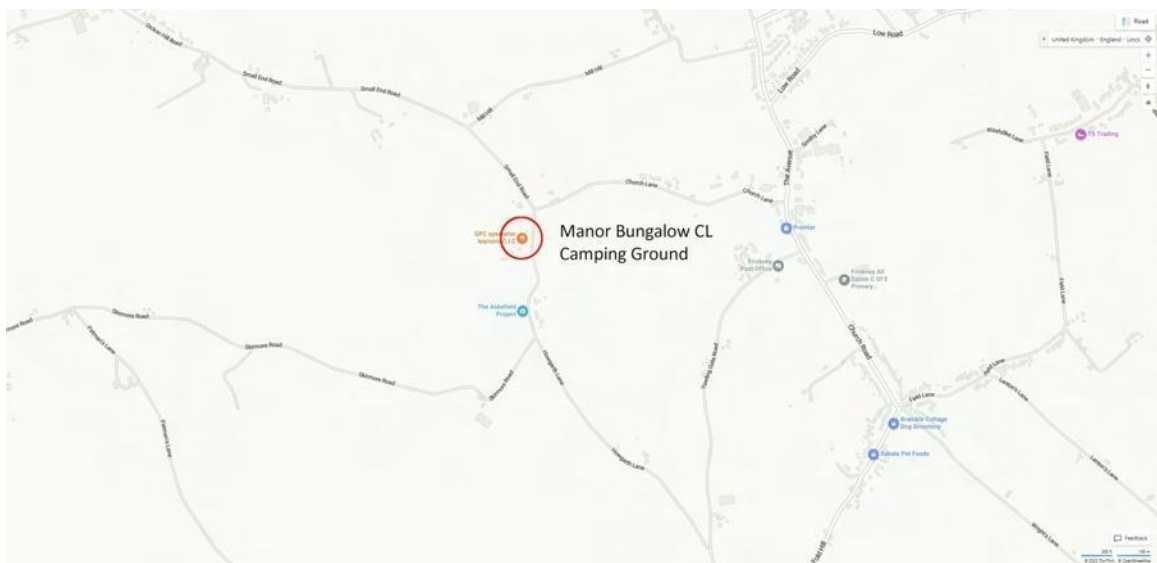


Figure 1: Bing Maps Location



Figure 2: Site location (Google)

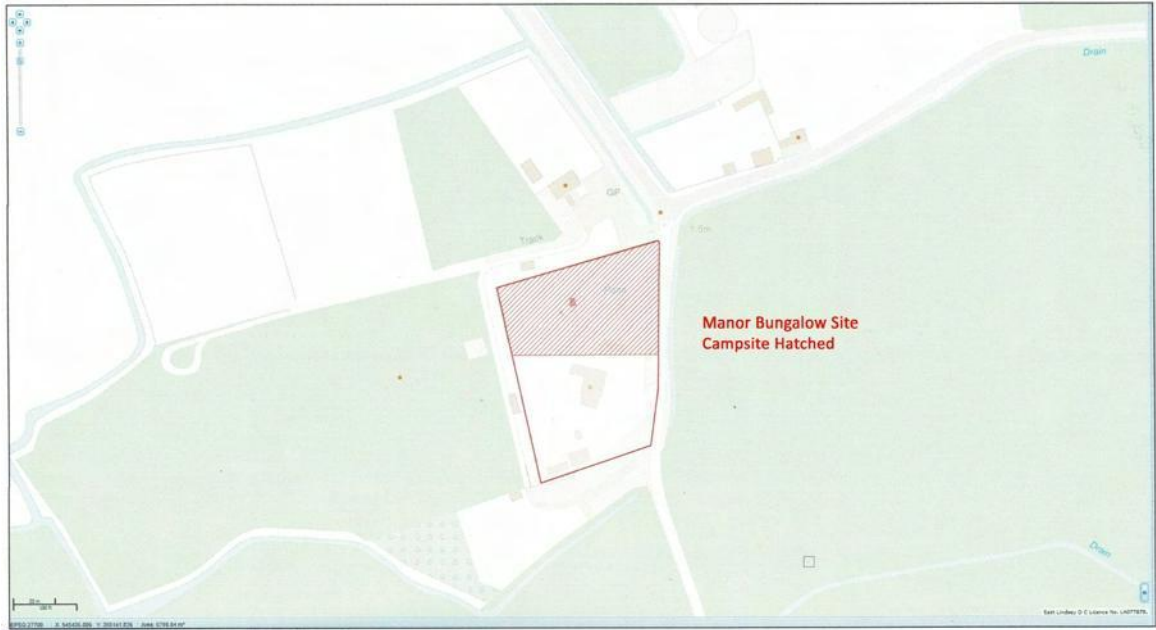


Figure 3: Site location (Planning Portal)

2.2 The site which is approx. 0.3 hectares in area is a field, part of the larger site of Manor Bungalow and the total combined site area is approx 0.7 hectares. Figures 2 and 3 show the part of the site to which the application relates hatched in red. On three sides, North, West and South the application site is bounded by Peters Eden Farm (Askefield Project) for which an application for change of use was submitted in June 2021 and approved. A substantial Flood Risk Assessment accompanied the Peter Eden Farm application and its observations apply equally to the land to which this FRA refers (Application ref. S/053/01358/21).

2.3 Photographs:



P1: Entrance to the camp site off Howgarth Lane.



P2: Camp site welcome board



P3: The campsite benefits from rising ground and is sheltered by trees on all sides.



P4: The Pond at the lowest part of the camp Site. The natural pond is a haven for wildlife but tends to dry out during dry periods.

3 Historical Context

The site is located on an elevated area between a number of ancient sites:



Figure 4: Map showing the extent of the 'Isle' of Friskney and the reclamation of the coastal flood plain.

3.1 Satellite image showing the field patterns and land reclamation patterns between Wrangle and Wainfleet, surrounding Friskney. The field patterns give a clear indication of the extent of the ancient 'Isle' of Friskney, an area of slightly elevated dry land between the Friskney Tofts, a low ridge protecting it from the sea and the fens to the North and West. The main historic sites of importance (listed below) are all grouped along a long bank or ridge and at its highest points. It is also worth noting the northern end of the dry land is marked by the location of Wainfleet St Mary Parish Church, a 11-12 th Century Church retaining some fragments of an even earlier Saxon church on the site. The village that it served was moved to the current location of Wainfleet. This area was reputed to be important because of its salt pans.

- A: Manor Bungalow Campsite
- B: Abbey Remains - Scheduled Ancient Monument
- C: Moated Manor House site with fish ponds
- D: All Saints Church
- E: Moated Manor House Site
- 1-4: Gradual land reclamations

The red line outlines the approx. extent of the 'isle' of Friskney as suggested by medieval field boundaries and lane patterns

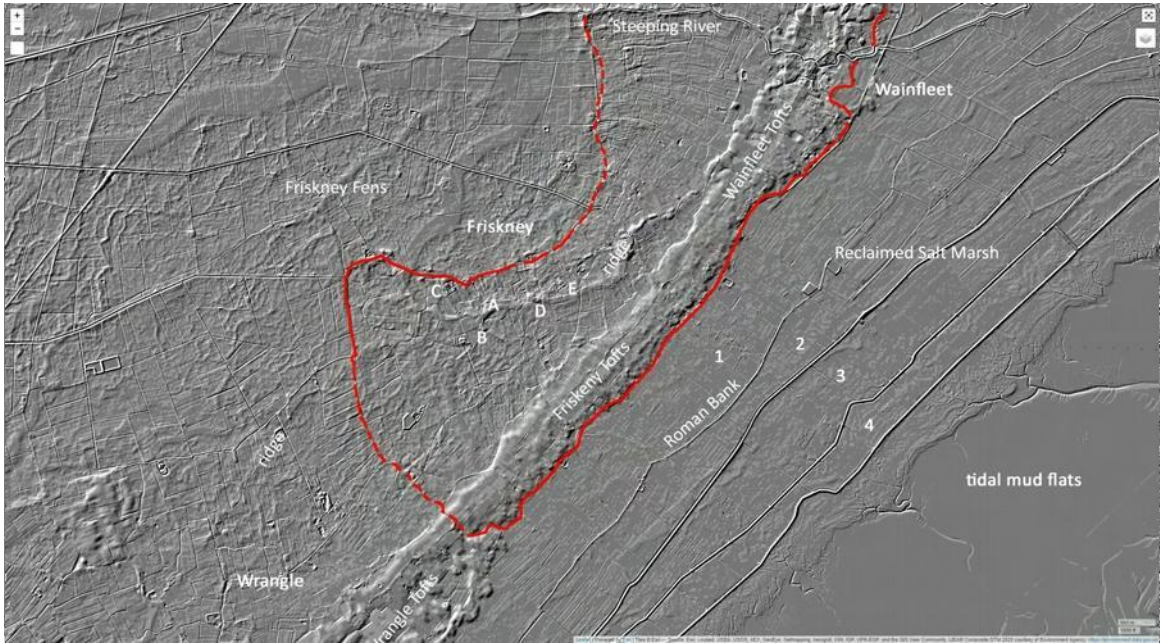


Figure 5: Lidar Mapping.

- 3.2 Lidar Mapping showing clearly the outline of the 'isle' of Friskney and the low ridge of the Friskney Tofts separating it from the tidal flood plane (salt marsh) with its land reclamations. A second, low ridge can be seen behind the low bank and on which Friskney is situated. The campsite is located on a high point on this secondary ridge. Clearly visible is also the Steeping river at Wainfleet winding its way through the elevated bank that separated Wainfleet from the sea. The current A52 follows the old coastline until Wainfleet where a modern bypass cuts through straight across the former salt marsh.



Figure 6: extract of a larger map showing the disposition of rivers and drains of the fens from Lincoln into Norfolk.

The effect of the topography as illustrated in the above satellite and lidar imagery analysis is clearly seen in the drainage pattern of the area: the area drains away Westwards from the higher ground between Old Leake and Wainfleet towards the Hobhole Drain and leaving a blank area between Wainfleet to the North-East and Old Leake blank and drained separately. The approximate location of the campsite is marked with a red dot.

4 Proposals and background:

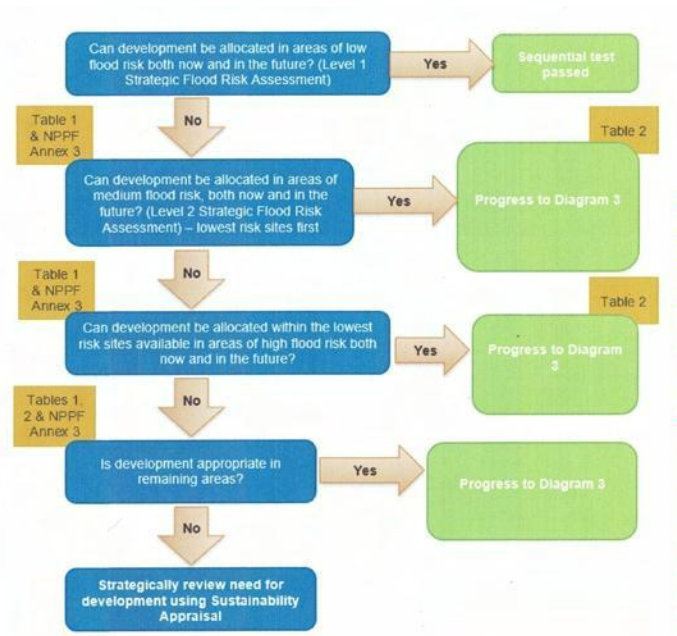
- 4.1 The field which is occupied by the campsite is located on a high spot of the low ridge that defines the North edge of the ancient 'Isle' of Friskney (see historical context). It has been providing a source of income for the GPC Specialist Tearoom CIC, a non-funded Community Interest Company providing training for learning disabled young people in a secure environment. The CIC is now into its 3rd year. The project is also providing a considerable contribution as a meeting place for the local community, and is providing a warm space for the community during the winter.
- 4.2 Self funding has however become more difficult under the strains of recent national economic circumstances while the maintenance of the site has also become more expensive and time consuming. It has therefore been decided that a better and more stable income can be realised by ending the current campsite in favour of locating four caravan homes for holiday use on the site.

5 Involvement and sources:

- 5.1 Information for this assessment has been collected from a number of different sources, including Local historical evidence, Local Planning Authority, the Environment Agency and the Internal Drainage Board ao.

6 The Sequential & Exception Tests:

- 6.1 This risk-base approach seeks to place the change of use that is most vulnerable away from areas that are most at risk.
- 6.2 The change of use area is at the higher level of an area at very low risk of flooding as illustrated in the attached flood risks maps.
- 6.3 This change of use falls into the East Lindsey District Council SFRA Category 1: Low probability risk of flooding.
- 6.4 When applying the test the proposal passes the test being in zone 1; more vulnerable use category is considered compatible.
- 6.5 A further exception test would not be required for the more vulnerable classification.



7 Potential Sources of Flooding:

7.1 Surface Water Flooding: Flood Risk Maps.

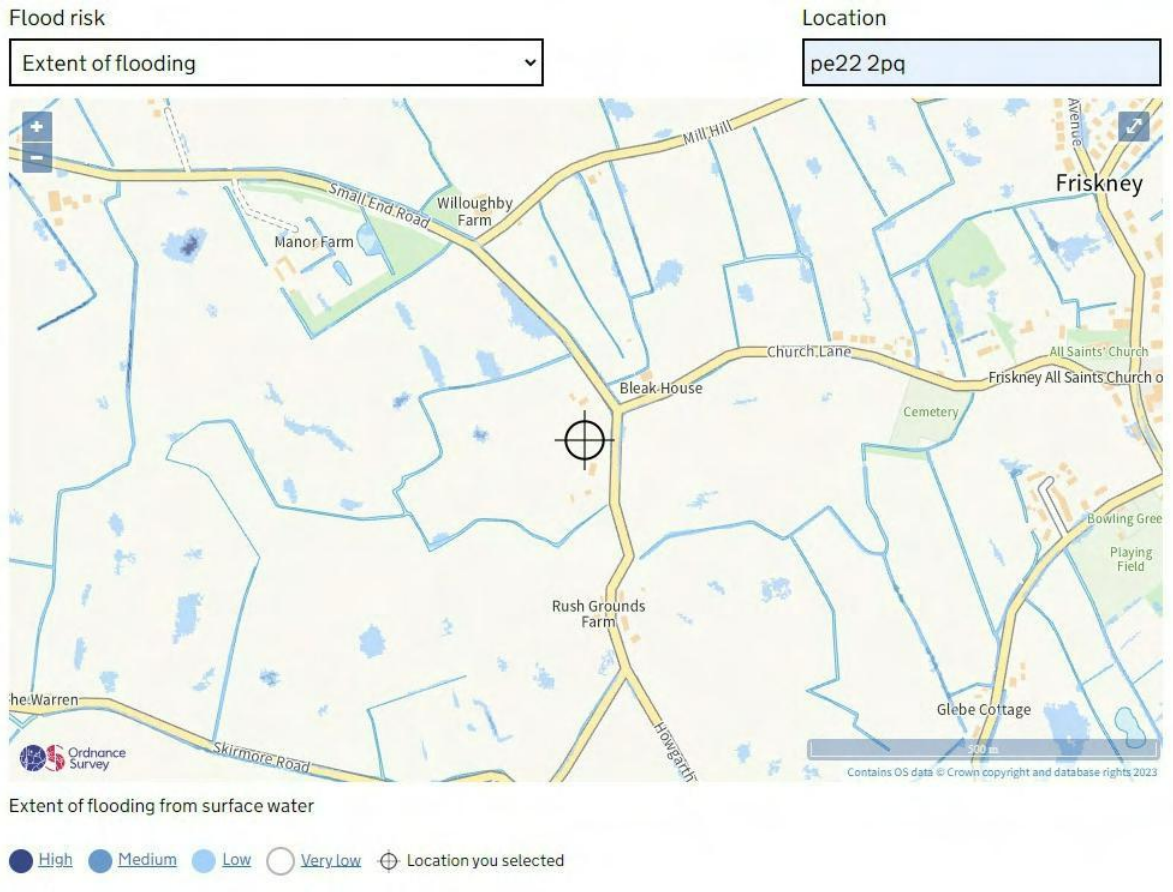


Fig 7 Map showing the General Extent of Flood Risk



Fig 8a Depth of Flood (High Risk)



Fig 8b Velocity of Flood (High Risk)



Fig 9a Depth of Flood (Medium Risk)



Fig 9b Velocity of Flood (Medium Risk)



Fig 10a Depth of Flood (Low Risk)



Fig 10b Velocity of Flood (Low Risk)

7.2 Risk of Flooding from Rivers and the Sea

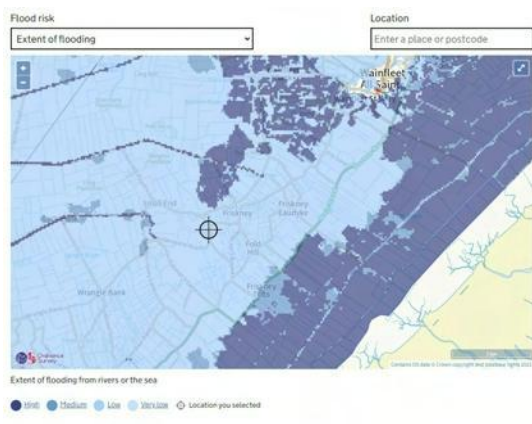


Fig 11a Extent of Flood from the Sea



Fig 11b depth and Flow Estimates at Monitoring Stations

8 Flood History:

8.1 No history of flooding has been recorded for the application site.

9 Potential Flooding Impact:

9.1 It is considered that the proposed change of use is unlikely to suffer from fluvial flooding. In the unlikely event of flooding from water courses by overtopping was to occur during an extreme event it would result in very shallow depths of water and very low velocity (if any). The volume of water would drain away to the lower areas of the fens relatively quickly and dispersed over a wide area where it would be intercepted by the regional system of dykes and drains. The large pond at the site serves as a buffer reservoir to store a volume of water in case of an extreme downpour.

9.2 The proposed static caravans are by their construction elevated some two feet above the surrounding surface of the site and it is very unlikely they would be flooded.

9.3 It is likely there would be ample time for evacuation of the site or take precautionary action.

9.4 The likelihood of the site being flooded by over topping of the sea defences is considered very low given the height of the sea defences, the distance from the application site to the sea defences and its location on higher ground. The hazard maps show the risk of flooding from the sea (or rivers) is very unlikely. The likelihood of a breach is also considered very low considering the current condition of the sea defences and the commitment to maintain and raise the sea defences in the future. Whilst the risk of a breach remains, however low, it is unlikely to affect the site to any degree and not rise to a level likely to penetrate the static caravans.

9.5 Whilst the change of use is stated to be in the flood plain, historic evidence shows it to be elevated and historically dry. There is no reason to believe there would be a risk to life from flooding.

9.6 The amount of impermeable area within the site **will not be increased** by the proposed change of use.

10 Mitigation Measures

10.1 A precautionary approach is adopted to ensure that the change of use is safe and not exposed to unnecessary flooding.

10.2 To ensure that the legs and wheels of the static caravans are properly supported to avoid settlement into the ground in case of saturation.

11 Conclusion:

In order to establish a realistic view of Flood Risk to the application site in the immediate and long term future, it is necessary to look at the past development of the location and what is known about historic flood events, its current state as well as the likely environmental changes that will affect the site in the future.

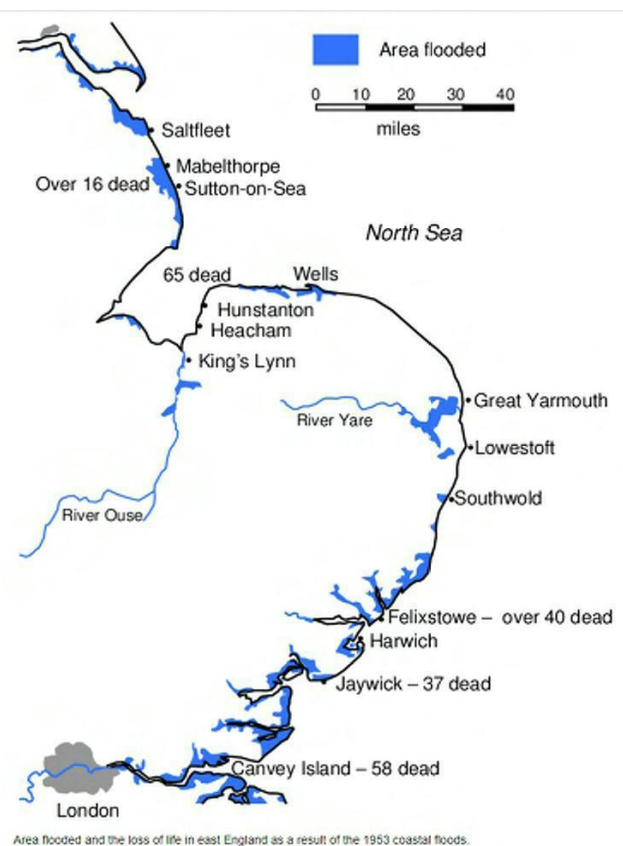
11.1 Historical development and risk:

The geographical location of the site supported by the historical research above, shows the location of the campsite to be on a higher ground, historically a preferred location for the ancient church and abbey, and at least two moated manor houses (both of which are no longer extant) of which remnants of the moats and domestic sites survive. This physical evidence is immediately visible, but there is also some suggestion that the site was indeed in use during Saxon times. There is no record of flooding. This illustrates this location to have throughout its history to have been free of flooding by the sea.

Flooding from surface water (rainfall) is also limited and the drainage of the 'isle' of Friskney towards the fens on the North and West side, and from there to the Hobhole drain, is also an indication of low risk from that source. The nature of the soil however, would retain water and encourage standing water collected in small low areas.

Sea defences around the wash are well maintained and regularly inspected and there is no current reason to assume there is a risk of breaches or overtopping. There is a good management structure in place to both maintain the sea defences as well as the drainage of the fens.

It is as well here to draw attention to events of February 1953, when large areas of the North Sea coast were inundated during the historic gales and storm surge that caused great economic damage and loss of life on both sides of the North Sea. An analytical map (right) shows the extent of inundation and the associated loss of life. There was none along this part of the coast, and indeed the fens were generally spared inundation.



11.2 Current risk:

It is unlikely there is any risk of flooding from surface water at the campsite in the short term, provided the regional system of dykes (drains and ditches) continues to be well maintained. This application does not involve the creation of hard surfaces and the current grass will be maintained and there is no treat of increase in risk to the surrounding area. The site also benefits from a large natural pond which has until recently been used by newts as a breeding area. Regrettably evidence of newts has not been observed since recent development of the adjacent site.

11.3 Future risk:

In the near future the current situation is not likely to change. However, in the long term future (50-100 years) the threat from sea level rises caused by the effects of global warming, may change the threat of inundation from the sea to the wider area significantly, and in the very long term future it now seems realistic to foresee a situation where some low lying areas of Lincolnshire will be inundated when to keep them dry will be deemed unsustainable. As for when these events will come to pass is speculation, though current world wide events demonstrate that the pace of global warming is accelerating faster than previously expected and with it its consequences. It is a situation which affects all low lying coastal areas and flood plains world wide, and not relevant to this application.

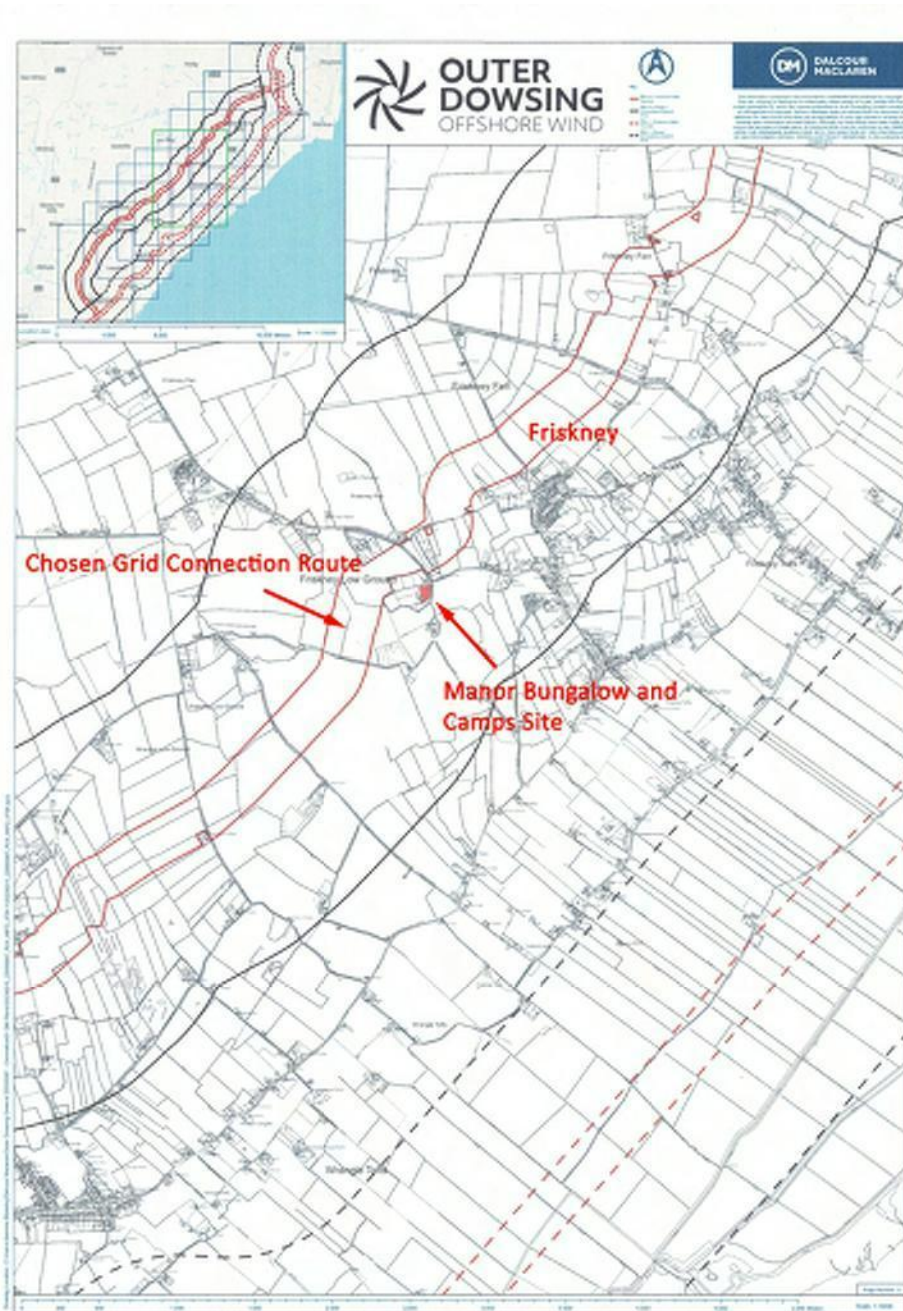
11.4 This application:

The application to which this assessment relates is for a change of use to replace the current campsite for touring campervans with four static caravans for holiday use. Such use is by its nature time restricted and it highly unlikely that flooding will be an issue.

The environmental effect of the proposed use should also be considered in relation to the existing use. There is no evidence that discharge of effluent (sewage) generated by the proposed use will be significant. The discharge of sewage will be reduced due to a periodically less intense use of the site (less pressure from busy times) and improvement of the sewerage handling system by the inclusion of proper drainage and a modern passive sewage treatment plant to replace the current septic tank.

12 Other Anticipated Significant Area Developments

- 12.1 Outer Dowsing will be routing their cables just NW from the application site location. It is not expected this development will have a detrimental effect on the application site.
- 12.2 Note: The route of the Outer Dowsing cuts between the application site and the ancient moated manor site to the North. Historical evidence suggests the land in between may have archaeology. The fish ponds at the moated site were known to be part of the breeding area for newts.



Appendix 1 : Flood Warning and Evacuation Plan

Manor Bungalow Campsite, Howgarth Lane, Friskney PE22 8PQ

1 General:

- 1.1 This Flood Warning and Evacuation Plan records the contingency measures that have been drawn up to provide maximum safety to all caravan residents, visitors, and staff of Manor Bungalow Campsite during a major flood event. The plan will be disseminated to the emergency services to ensure responding agencies are aware of the pre-planned emergency measures.
- 1.2 The aim of this plan is to enable a safe and well organised evacuation of guests, visitors, and staff of the site during a major flood event should one occur.
- 1.3 The main objective of this plan is to raise awareness of the risk of the site being flooded, to detail the Flood Warnings and to outline how the plan is triggered and what actions are required by the all caravan residents, guests, and staff of the site. It will be issued to all interested parties to provide advice and guidance to all caravan residents, visitors and staff in the event of an extreme flood event affecting the site to ensure their safe evacuation from the site. The Evacuation plan will be clearly displayed on the site Notice Boards and/or inside the static caravans.
- 1.4 All staff, at their induction course and the caravan residents, upon their first occupation of the site, will be given a full briefing on flood risk including this FEWP and it will be explained how it is to be used in the event of a flood event arising from a breach of the tidal flood defences and how to advise all staff, guests and visitors on site. Mobile phone contact numbers will be requested from all guests so that the Site Manager can contact them in the event of an emergency.
- 1.5 The campsite is located within the coastal flood plain of the North Sea and the site is deemed to be at risk from flooding if no defences were present, from extreme weather which will give rise to peak flows as identified on the Environment Agency's Flood Maps.
- 1.6 All caravan residents, visitors and staff at the site will be using facilities, which are classified as being vulnerable in flood conditions. The area is protected by adequate flood defences which are maintained by the Environment Agency.
- 1.7 The risk of tidal flooding of the site is extremely low and would only occur following a rare combination of events such as a breach of the defences at the peak of an extreme tide surge event. A tide surge is dependent on a combination of extreme high tides and weather conditions in the North Sea. which occurs normally during the winter months. The area is protected from flooding by the flood defences along the coastline.
- 1.8 The Environment Agency aim to provide at least 2 hours warning between the Flood Warning alert being issued and the commencement of flooding. The Environment Agency recommend that all caravan residents, visitors, and staff should prepare to evacuate when a Flood Warning or Severe Flood Warning status is issued. If flood levels continue to rise, the site caravan residents, visitors and staff will be advised to evacuate before safe access to evacuation routes is lost.
- 1.9 The overall responsibility for managing a flood event on the site and for the co-ordination of flood warnings and evacuation procedures lies with the Manor Bungalow Campsite owner. Manor Bungalow Campsite owner has registered with the Environment Agency's Flood Warnings Direct free flood warning service for the Site Manager to receive all levels of warnings including alerts.

- 1.10 The Environment Agency will send them a message via a Text, E-mail, mobile or landline or Fax when these have been issued.
- 1.11 For all residents using the holiday let, instructions will be given by the site owner, up on them taking occupation of the holiday let, for them to sign up to Environment Agency's Flood Warnings Direct free flood warning service to receive all levels of warnings including alerts in case the site owner is ill or not on site. When they have left the site then they will deregister from the service.
- 1.12 In the event of an advance warning being received of a possible flooding, all caravan residents, visitors and staff on site will be alerted by the Site Manager All will then assemble at the designated assembly and pick up area and a roll call will be taken and reported to the Site Manager. If a flood warning being received affecting the site, the following plan and action will be implemented. Also, the Environment Agency's website should be monitored regularly for new warnings.
- 1.13 All staff using the site facilities will familiarize themselves with the evacuation procedure and evacuation route, which will be given to them. Do not panic stay calm and reassure others, listen to the local radio for up to date information and to act accordingly.
- 1.14 Manor Bungalow Campsite owners are ultimately responsible for making the decision of whether the residents evacuate or shelter on site, in the event of a flood incident. However, all should heed the advice/ warnings and follow the instructions of the emergency services.
- 1.15 The Local Authority has a legal obligation to provide assistance to evacuees under the Homelessness Act 2002. However, residents must be aware that at times of widespread flooding local services may have difficulty providing assistance for a large number of evacuees. In this instance guests, may be advised to stay at the site by the relevant authorities.
- 1.16 The Plan will have four trigger points:

1 FLOOD ALERT:



- 1.1 The Environment Agency will issue a Flood Alert status when flooding is possible. Issued 2 hours to 2 days in advance of flooding. The Site Manager will be informed, and they will patrol the site and inform all caravan residents, visitors, and staff on site that a FLOOD ALERT status had been received.
- 1.2 Flood Alert: - All caravan residents, visitors and staff will be informed personally, of an increased flood threat and ensure that they are aware of possible site evacuation if the situation deteriorates, the likelihood of the site being flooded and that they should be prepared to leave the site, be vigilant regarding weather conditions s forecasts and tide levels, and stay tuned to local radio or TV. Make sure that others are aware of the present flood warning status and that they are aware of what this means and what to do if a further warning is received.

Means: Flooding of low-lying land & roads is expected.

What to do:

- Monitor local news and weather forecasts.
- Check on an hourly basis with Flood line for updates.
- Be aware of water levels near you. Check if tidal levels are rising. If water is already on the flood plain, consider leaving the site.
- Be prepared to act on your Flood Plan.
- Charge your mobile phone.
- Think about what items you would want to move to safety during a flood.

2 FLOOD WARNING



- 2.1 The flood warning will be issued, half an hour to 1 day, in advance of flooding, when water levels are rising, it is advised to safeguard the property and prepare to evacuate.
- 2.2 The Site Manager will ensure, upon receipt of this warning, that steps are taken to close the site and if it is safe to do so, all caravan residents, visitors and staff must be evacuated from the site before the safe egress is lost. In the case of the situation deteriorating but if there is water already on the flood plain, be aware that parts of the evacuation route may be up to 1 M depth of flooding. All movable belongings will be moved to a safe place as high as possible.
- 2.3 If the site is to be evacuated, all caravan residents, visitors and staff will proceed to the village of Burgh le Marsh which is outside the flood risk area. For those residents without their own transport the site owner will arrange to transport these residents to the nearest transport hub for an onward journey back home.
- 2.4 The safe evacuation route will be advised by the emergency services.
- 2.5 Follow the Red emergency evacuation road signs shown below, or as advised by the Emergency Services



- 2.6 Any vulnerable people such as those with impaired hearing or sight or with restricted mobility, will be assisted by the staff.

Means: Flooding of homes and businesses is expected to ACT NOW.

What to do:

- Act on the flood plan.
- Move all cars to safety.
- Prepare to turn off gas, water and electricity from all equipment. Safety lockout procedures should be used.
- Protect yourself, and help other.

3 SEVERE FLOOD WARNING:

- 3.1 Severe flood warning means that severe flooding is expected. Issued when flooding poses a significant threat to life and different actions are required. There is extreme danger to life and property and people are advised to act immediately i.e. Evacuate if it is safe to do so.
- 3.2 Upon receiving this warning, the Site Manager must close down the site and check to ensure that all caravan residents, visitors and staff have left the site. The local authority, the emergency services and the Environment Agency will be managing the situation, with widespread flooding potentially over a large area, and will endeavour to provide advice on an evacuation route, shelter and assistance to the evacuees.
Ensure that all staff involved in the flood plan know the location of the gas, electricity and water main supplies and how to turn them off.
- 3.3 Before evacuating the site, the Site Manager must ensure that the site is secure. If flood waters have entered the site, switch off all power by removing the mains isolators, to minimise risk of fire or electrocution. All staff to be sent home. Staff advised to call the Site Manager for further information on the site reopening.

Means: Act now severe flooding is expected and extreme danger to life & property.

What to do:

- If safe to do so, stay in a high place, with a means of escape or evacuate the site as stated in the plan or as advised by the Emergency Services.
- Avoid electricity sources.
- Avoid walking or driving through flood water.
- In danger, call 999 immediately.
- Listen to emergency services. Act on the flood plan.

4 WARNINGS NO LONGER IN FORCE

Means: No further flooding is expected. Water levels will go down.

What to do:

- Listen to emergency service.
 - Keep listening to weather reports.
 - Only return to evacuated buildings when told to do so.
 - Beware of sharp objects and pollution in floodwaters.
- 4.1 When the Environment Agency has issued the all clear notice for the area, the Site Manager should contact the local authority to check that it is safe to return to their property.
- 4.2 The Site Manager should be aware that if floodwaters have entered the property it will need to be cleaned disinfected and repaired and fully dried out prior to reoccupation. Ask for advice before cleaning up. The building must be checked to ensure it is safe before entering the building, and if there are any doubts professional opinion should be sought.
- 4.3 If there is any doubt that appliances may be water damaged, they must be checked before switching the power or gas back on. Contact the insurance company as soon as possible to get their approval before arranging any clean-up or repairs.

2 ANNUAL REVIEW

- 2.1 Manor Bungalow Campsite owners must review the Flood Evacuation Plan at least annually, in accordance with Environment Agency guidance and considering the rise in sea/river level due to global warming and the following actions: -
- Read and understand the plan and update the contact lists.
 - Contact the Environment Agency to check that the flood risk to the property has not changed.
 - Contact the Environment Agency Flood line Service to ensure that you are still registered to receive flood alerts by your preferred method.
 - Know how and where to isolate gas, water, and electric supplies.
 - At least once a year a test, of the evacuation plan will be carried out with all staff to ensure that all they are familiar with the plan and its procedures.
- 2.2 An Emergency grab kit must be provided on site within a safe area and maintained on a regular basis, which contains the following: -
- Bottled water.
 - A first-aid kit, including a supply of any essential medication.
 - A windup or battery torch radio and supply of batteries.
 - Non-perishable food items.
 - A list of useful telephone numbers.
 - Wellington boots or similar waterproof boots.
 - Know how to turn off the gas, electricity, and water mains supplies.
 - A copy of the insurance cover – ensure it covers flood damage.

REMEMBER :

DO NOT walk through flowing water - Currents can be deceptive and shallow and fast moving water can knock you off your feet.

DO NOT swim through fast flowing water -You may get swept a way or struck by an object in the water.

If you mus walk in in standing water - Use a pole to ensure thyat you not step into deep water, open manholes or ditches.

DO NOT drive through a flooded area - You may not be able to see abrupt drop offs and depths over 0.5 M that can carry a car way.

AVOID CONTACT with flood water - It may be contaminated with sewage, oil, chemicals or other substances.

2.3 The Floodline telephone number is 0345 988 1188 for up to date flood information.

The following lists are to be completed by the Site Manager, added to as necessary and updated monthly

Emergency Contacts

Service	Contact Information
Emergency Services	
E A Flood Warnings Direct	
East Lindsey District Council	
Electricity Supplier & Meter No	
Gas Supplier & Meter No	
Water Supplier & Meter No	
Insurance Company & Policy No	
Local radio station	

Site Contact list

Name	Address	Telephone	Mobile

Key locations

Service Cut Off point	Location	Shut Down procedure
Electricity Do not touch if standing in water		
Gas		
Water		
Oil Based Products		
Chemicals etc.		

Appendix 2 (Environment Agency Extract):

Provision of Flood Risk Information for Howgarth Campsite, Manor Bungalow, Howgarth Lane, Friskney, Boston PE22 2PQ

Flood Map

The attached map includes the current Flood Map for this area. The Flood Map indicates the area at risk of flooding, assuming no flood defences exist, for a flood with a 0.5% chance of occurring in any year for flooding from the sea, or a 1% chance of occurring for fluvial (river) flooding. It also shows the extent of the Extreme Flood Outline which represents the extent of a flood with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater.

In some locations, such as around the fens and the large coastal flood plains, 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 flood plains. 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 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 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.

History of Flooding

With regards to the history of flooding there are no records of flooding in this area. It is possible other flooding may have occurred of which there are no records, and other organisations, such as the Local Authority or Internal Drainage Boards, may have records.

Tidal Flood Risk Information

Tidal Defence Information

The tidal defences protecting this site consist of earth embankments which are supplemented by salt marsh. They are in fair condition and reduce the risk of flooding to a 0.67% (1 in 150) chance of occurring in any year. These defences are inspected routinely to ensure potential defects are identified.

Tidal Flood Levels

The attached table shows our current best estimate for extreme tide levels. Levels for the Humber Estuary have an assessment date of 2014, with others having an assessment date of 2006, which should be used with any consideration of future increases due to climate change.

Modelled Hazard Mapping

For certain locations the Environment Agency has 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 along the full coastal / tidal flood plain, except the tidal Witham Haven in Boston (upstream of Hobhole) where only breaching and not overtopping has been modelled and the tidal River Welland upstream of Fosdyke Bridge where neither breaching nor overtopping are available. Hazard mapping is also available for fluvial flood risk in Northampton, Thrapston, Lincoln, Brigg, Wainfleet and some isolated rural locations. The number of locations this information is available for is expected to increase in time.

Hazard Mapping – Breaching

The attached maps show the maximum values of flood depth, velocity and hazard rating (danger to people) resulting from breaching of the defences at specific locations for the scenarios below. For some locations the breach mapping also includes flooding from overtopping if this is expected in that scenario. The location of modelled tidal breaches is shown on a separate attached map.

- ☞ Year 2115 0.5% (1 in 200) chance
- ☞ Year 2115 0.1% (1 in 1000) chance

This site is not affected by breaching of the defences for the present day (2006) scenarios.

Hazard Mapping – Overtopping

The attached maps show the maximum values of flood depth, velocity and hazard rating (danger to people) resulting from simulated overtopping of defences for the following scenarios:

- ☞ Year 2115 0.5% (1 in 200) chance
- ☞ Year 2115 0.1% (1 in 1000) chance

Your site is not affected by overtopping of the defences for the present day (2006) scenarios

Development Planning

If you have requested this information to help inform a development proposal, then you should note the information on GOV.UK on the use of our information for Flood Risk Assessments. We recommend that you undertake a formal pre-application enquiry using the form available from the website.

<https://www.gov.uk/planning-applications-assessing-flood-risk>

<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

Climate change will increase flood risk due to overtopping of defences. Please note 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 February 2016. 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.

Supporting Information

Please see the Standard Notice or licence for details of permitted use. The Standard Notice can be found at the link below.

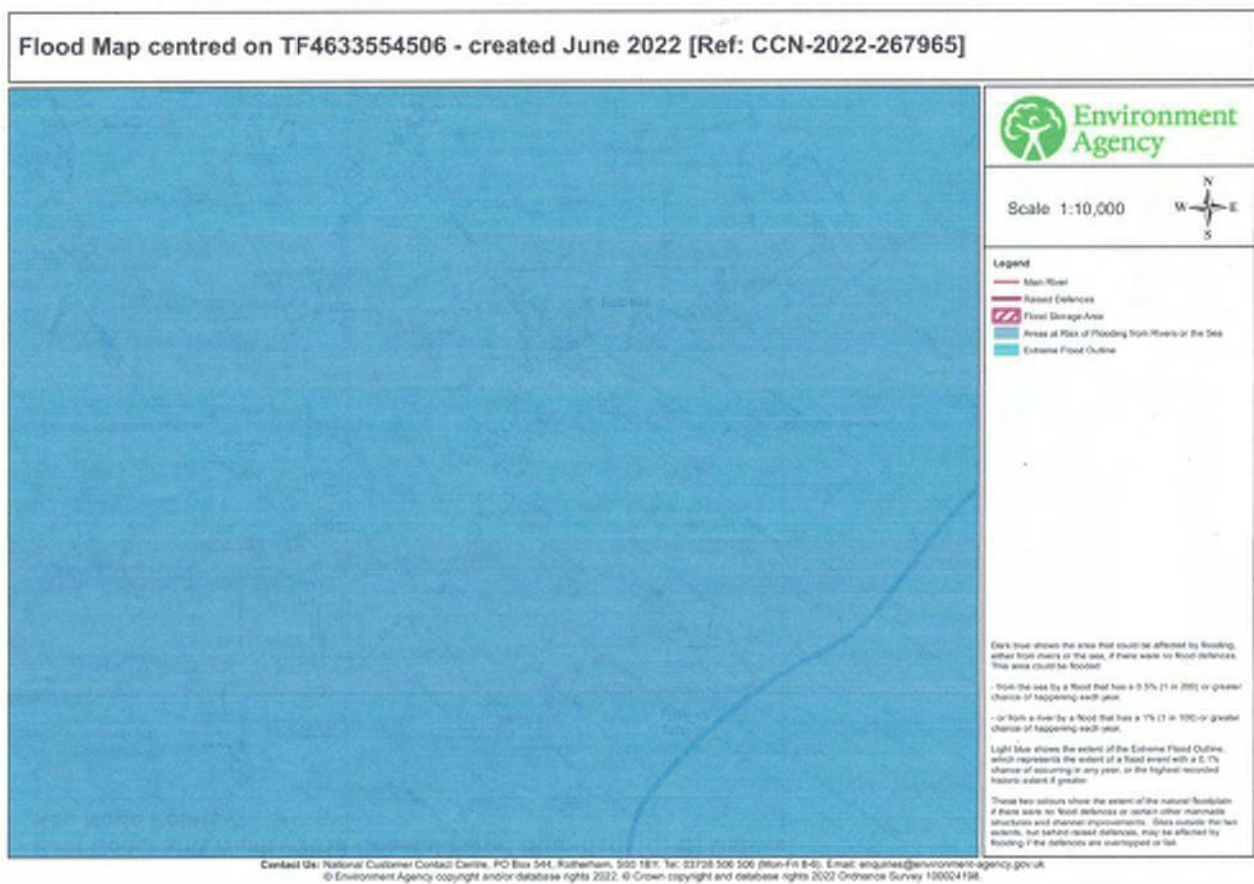
<http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

The Environment Agency responds to requests for recorded information we hold under the Freedom of Information Act 2000 (FOIA) and the associated Environmental Information Regulations 2004 (EIR). Further information on flood risk can be found on the GOV.UK website at:
<https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>

Other Flood Risk Management Authorities

The information here provided relates to flood risk from main river or the sea. Additional information may be available from the Lead Local Flood Authority (ie County Council or Unitary Authority) or, where they exist, the Internal Drainage Board (Witham Fourth).

Enc.
Flood Map
Estimated Tide Levels



East Coast and Wash: Immingham to the West Lighthouse
2018 Coastal Flood Boundary Extreme Sea Levels



EPA Par	Location	Easting	Northing	Annual Chance (1 in 10) of Tide Level in metres ODN																				
				1			5			10			100			200			500			1000		
				Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound					
				2.0%	50%	97.5%	2.0%	50%	97.5%	2.0%	50%	97.5%	2.0%	50%	97.5%	2.0%	50%	97.5%	2.0%	50%	97.5%			
2888	Immingham	52000	47525	4.16	4.17	4.19	4.30	4.31	4.32	4.73	4.80	5.06	4.80	4.90	5.19	4.93	5.06	5.47	4.98	5.14	5.39	5.15	5.38	4.97
2889	Heborough Wash	52100	47810	4.14	4.15	4.17	4.48	4.51	4.60	4.76	4.77	4.97	4.80	4.90	5.16	4.90	5.03	5.38	4.94	5.10	5.37	5.13	5.34	5.07
2890	Grimsby	52900	47040	3.98	3.99	4.01	4.37	4.34	4.40	4.53	4.60	4.90	4.57	4.71	4.97	4.71	4.94	5.19	4.74	4.90	5.21	4.98	5.11	4.74
2896	Buck Beck	52470	45700	3.87	3.88	3.90	4.19	4.20	4.28	4.41	4.50	4.68	4.30	4.41	4.66	4.41	4.73	5.10	4.36	4.60	5.02	4.80	5.01	4.66
2910	Taney	52620	45827	3.85	3.86	3.88	4.17	4.20	4.30	4.40	4.60	4.67	4.48	4.61	4.86	4.60	4.75	5.10	4.43	4.67	5.07	4.80	5.06	4.68
2916	Osney Wash	54300	47967	3.80	3.83	3.86	4.14	4.19	4.27	4.38	4.44	4.65	4.47	4.60	4.90	4.54	4.74	5.10	4.40	4.62	5.02	4.81	5.08	4.63
2928	Belford	54700	39080	3.79	3.79	3.82	4.11	4.10	4.28	4.36	4.48	4.64	4.47	4.59	4.86	4.57	4.74	5.11	4.40	4.63	5.01	4.80	5.11	4.76
2942	Breyth	55100	38660	3.72	3.74	3.77	4.06	4.11	4.20	4.32	4.43	4.61	4.40	4.57	4.87	4.56	4.73	5.10	4.40	4.63	5.04	4.80	5.15	4.60
2966	Coltgar Point	55700	38181	4.18	4.17	4.20	4.51	4.56	4.67	4.76	4.85	5.06	4.80	4.97	5.27	4.94	5.10	5.49	4.80	5.18	5.63	5.14	5.41	4.93
302_14	Holbeak	50800	54710	4.16	4.17	4.21	4.40	4.44	4.66	4.66	4.79	5.06	4.79	4.90	5.20	4.90	5.24	4.46	4.92	5.11	5.37	4.95	5.21	4.98
302_3	Grimsby Barton Barrage	52700	34002	4.30	4.34	4.36	4.57	4.60	4.67	4.73	4.83	5.04	4.86	4.97	5.27	4.93	5.00	4.40	4.94	5.13	5.39	4.98	5.25	4.94
302_5	Friskyle Bridge	51800	35054	4.40	4.40	4.42	4.51	4.55	4.47	4.56	4.68	4.90	4.71	4.85	4.73	4.82	4.96	4.38	4.87	4.98	5.12	4.91	4.29	4.97
4008	West Lighthouse	50000	32871	4.87	4.88	4.87	3.21	3.28	3.37	3.46	3.36	3.78	3.86	3.68	3.98	3.86	3.82	4.21	3.71	3.88	4.34	3.86	4.16	4.41
-	March Road	52000	32001	-	1.04	-	-	1.66	-	-	3.73	-	-	4.86	-	-	6.86	-	-	-	-	-	-	-
-	Halbeach	54110	38942	-	1.83	-	-	3.26	-	-	5.53	-	-	5.66	-	-	5.79	-	-	-	-	-	-	-
-	Spalding Market	51700	29809	-	1.67	-	-	4.80	-	-	4.22	-	-	4.32	-	-	4.42	-	-	-	-	-	-	-

Dataset version: 2018 04 06
Data is 10 minutes resolution. All cells in dataset geographic coordinates.
See metadata regarding units of data.

Email: enquiries@environment-agency.gov.uk
www.gov.uk/government/organisations/environment-agency

East Coast and Wash - 2018 Coastal Flood Boundary [CFB] Dataset
Key Node Points



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Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1B5. Tel: 03708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk



★ Modelled Breach Locations

0 3.5 7 14
Kilometers

This map indicates the location of where we have modelled the consequence of breaches in the defences along the coastline and tidal rivers. We have mapped the maximum values of Hazard Rating (Danger to People), Depth and Velocity.

We have not assumed that all breaches occur at the same time, but have modelled each breach individually and overlaid the results to find the maximum values.

Our modelling only considers the consequences of a breach, it does not make any assumption about the likelihood of a breach occurring. Our defences generally provide a good standard of flood defence but a risk of breaching remains.

Please contact the Environment Agency for information on how these maps are used in the management of food risk.

General Enquiries No: 03709 506 506

Weekday calls cost 1p per min up to 1p per min BT Western Unlimited. Mobile and other providers charges may vary.



**Northern Area Tidal
Hazard Mapping**

Location of Modelled Breaches



Flood map for planning

Your reference	Location (easting/northing)	Created
<Unspecified>	545320/355269	1 Sep 2023 23:08

**Your selected location is in flood zone 3
– an area with a high probability of flooding.**

This means:

- you may need to complete a flood risk assessment for development in this area
- you should ask the Environment Agency about the level of flood protection at your location and request a Flood Defence Breach Hazard Map (You can email the Environment Agency at: enquiries@environment-agency.gov.uk)
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (find out more at www.gov.uk/guidance/flood-risk-assessment-standing-advice)

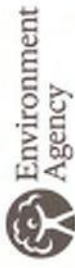
Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference
<Unspecified>
Location (easting/northing)
545320/355269

Scale
1:2500
Created
1 Sep 2023 23:08



