#

FLOOD RISK ASSESSMENT

Proposed Ground Mounted Solar Panels
Trevethoe House,
Holbeach St. Marks,
Spalding,
PE12 8EX

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RMA

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FLOOD RISK ASSESSMENT FOR PROPOSED GROUND MOUNTED SOLAR PANELS TREVETHOE HOUSE, HOLBEACH ST MARKS, SPALDING, PE12 8EX

EXECUTIVE SUMMARY

Summary of Possible Sources of Flooding		
Source	Significant	Comment
Fluvial (Main River)	No	No Main River close by
Tidal	High/Medium	The site may be at risk from Tidal sources in the form of residual risk due to the failure of flood management infrastructure such as a breach of a raised flood defence. scenario, today or with an allowance for climate change
Pluvial	No	Not shown on Flooding from Surface Water to be affected for the 0.1% event
Ground Water	No	This location is outside of a groundwater flood alert area.
Overland flow	No	No high ground surrounding the site
Blockage	Low	Riparian watercourse close to the site
Infrastructure	No	No Public sewers in the vicinity of the site
Reservoirs	No	No reservoirs close to the site
Lakes & Canals	No	No lakes or canals close to the site

INTRODUCTION

The Government has placed increasing priority on the need to take full account of the risk associated with flooding at all stages of the planning and development process. This seeks to reduce the future damage to property and the risk to life from incidents of flooding. Their expectations relating to flooding are contained in the National Planning Policy Framework December 2024, (NPPF), which identifies how the issue of flooding is dealt with in the drafting of planning policy and the consideration of planning applications by avoiding inappropriate development in areas at risk from flooding and to direct development away from areas at highest risk.

The NPPF provides that development in areas at risk of flooding should be avoided and seeks to direct development away from areas at highest risk. There is a sequential, risk-based approach to the location of development avoiding where possible, flood risk to people and property managing any residual risk and taking account of the impacts of climate change.

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APPLICATION SITE

The site is located at Trevethoe House, Holbeach St. Marks, Spalding, PE12 8EX, within the South Holland District Council's administrative area. The National Grid Reference is TF 37101 32194. (what3words//emerald. Mincing. Trappings. **Plan 1**

This flood risk assessment has been prepared, for a planning permission to install a ground mounted solar panel array comprising of 112 ground-mounted solar panels of 590W in 3 rows. The array would be mounted above the ground on galvanised steel frames, with the highest point of the array reaching approx. 2.0m above ground level. The solar panels are to serve the applicant's farm with electricity. **Plan 2**

The National Planning Policy Framework Guidance NPPG defines three levels of flood risk depending upon the annual probability of fluvial flooding occurring.

Zone 1 – Low Probability (<0.1%)

Zone 2 – Medium Probability (0.1 – 1.0%)

Zone 3 – High Probability (>1.0%)

The proposed development site is shown to be within an area of Flood Zone 3 "High Probability" as detailed on the Environment Agency's Flood Zone Maps **without defences**, and as defined in Table 1 of NPPG**.**

Table 1: Flood Zones Definition

Flood Zone 3- High Probability
Definition Land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. The water-compatible and less vulnerable uses of land are appropriate in this zone. The highly vulnerable uses should not be permitted in this zone. The more vulnerable and essential infrastructure uses should only be permitted in this zone if the Exception Test is passed. Essential Infrastructure permitted in this zone should be designed and constructed to remain operational and safe for uses in times of flood. **Flood Risk Assessments requirements** All proposals in this zone should be accompanied by a Flood Risk Assessment. **Policy aims.** Developers and local authorities should seek opportunities to: • reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage techniques. • relocate existing development to land with a lower probability of flooding. • create space for flooding to occur by allocating and safeguarding open space for flood storage.

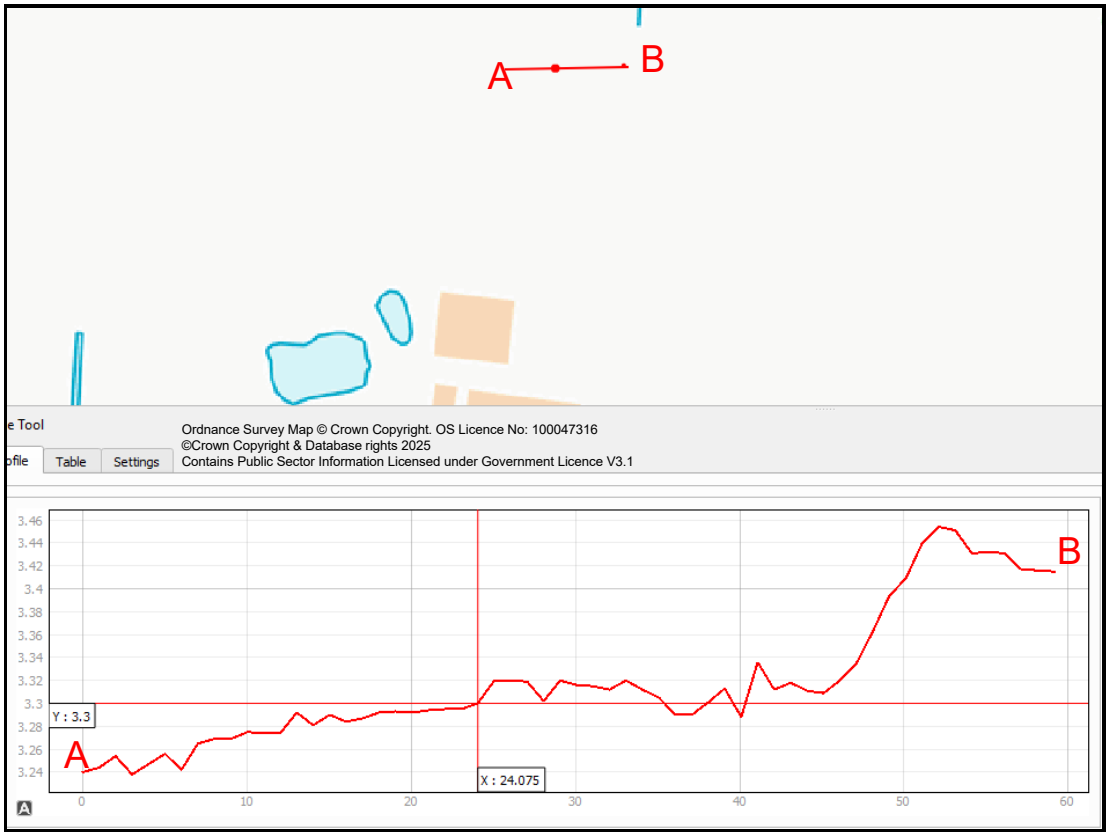
Applying the Flood Risk Vulnerability Classification in Appendix 3 NPPF, the proposed use for the site for the solar panels to provide the applicant's farm with electricity it is assumed to be classified as "Less Vulnerable". Less vulnerable uses, as set out in Table 2 NPPG, are appropriate in this zone.

Table 2: Flood Risk Vulnerability Classification

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

Site Levels

Lidar 1m DTM data reveals that land levels around the site average 3.30mODN, Lapwater Lane at the site entrance being at a level of 3.46mODN.



Lidar Cross Section A-B

DRAINAGE AUTHORITIES

Environment Agency

The Environment Agency has permissive powers for reducing the risk of flooding from designated main rivers and from the sea.

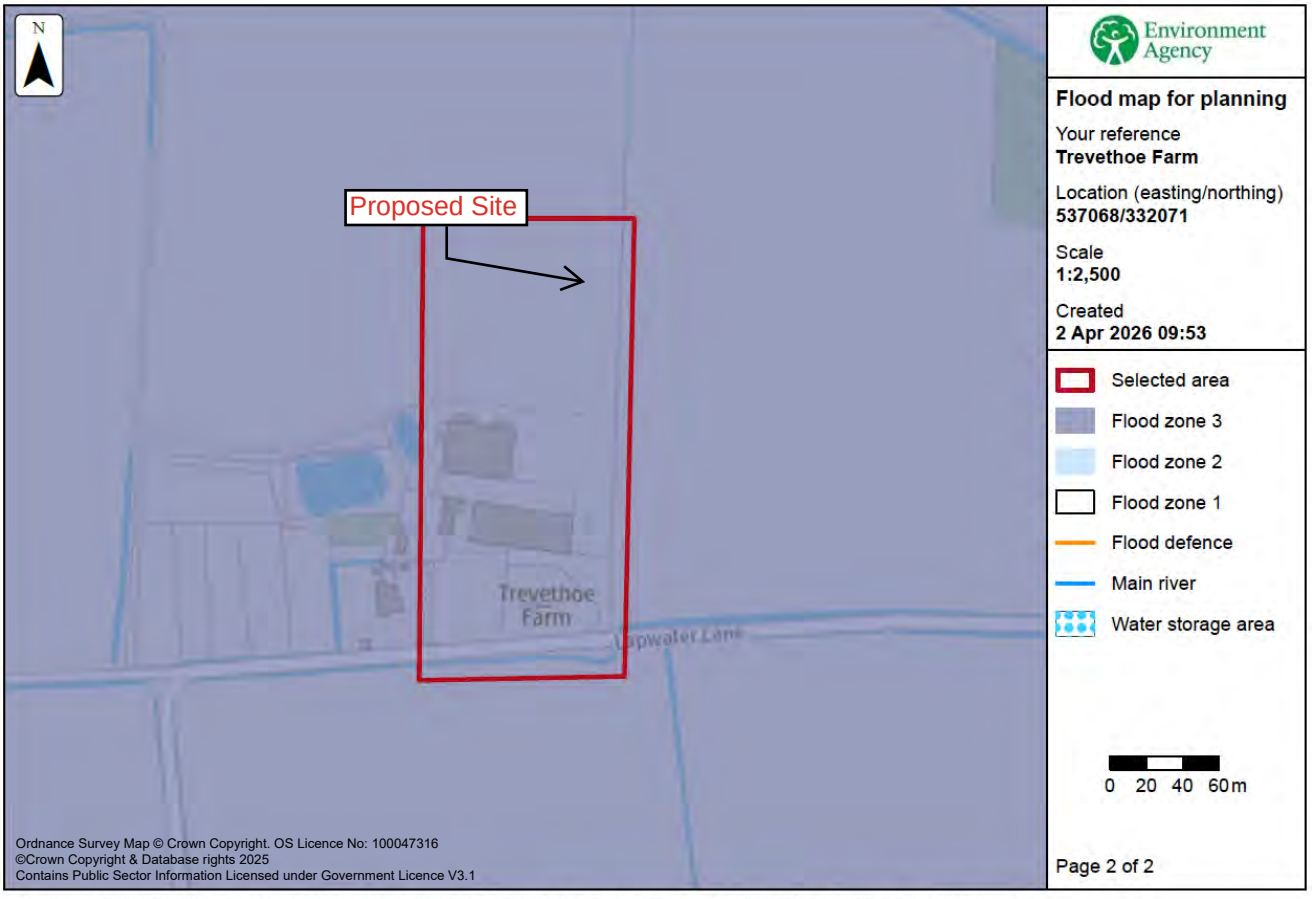
The following potential sources of flooding affecting the development site have been identified as:

- The Wash / Welland (Tidal)

The flood zone maps indicate that the area would be flooded without flood defences The Flood Map indicates the area at risk of flooding, **assuming no flood defences exist**, for a flood event 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 event with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater. To meet the requirements of the National Planning Policy Framework, these defences are removed in their entirety to produce the Flood Map for Planning (Rivers and Sea). The map therefore shows the full extent of areas that would be at risk of flooding if no defences existed, and water could spread out across the floodplain.

Flood Zones

These maps were updated on the 25th March 2025 and show that the site is considered at risk from tidal/fluvial flooding as it is all located within an area zoned as Flood Zone 3a.The maps indicate that the area would be flooded, without flood defences, which are in place, (with an annual probability of more than 0.5% i.e., return frequency of less than 1 in 200 years for tidal flooding or more than 1.33% return frequency of less than 1 in 100 years for fluvial flooding).



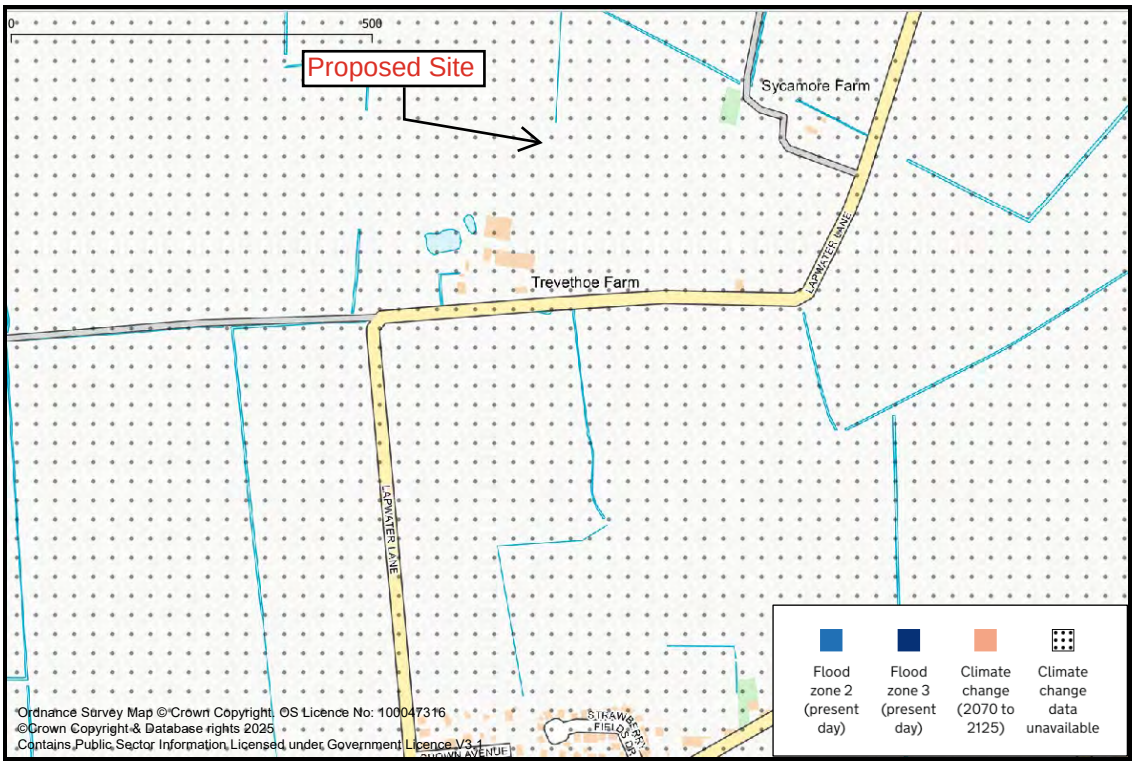
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Flood Map for Planning (Source EA)

On the 27 August 2025 the Environment Agency added a new layer on "Flood Map for Planning Flood Zones plus

Climate Change", which shows how the combined extent of Flood Zones 2 and 3 could increase with climate change over the next century. Flood zone 1 sites that are within the 'flood zones plus climate change extent should be treated as if they were in flood zone 2.

In this location, all or part of the site is included in an area where flood zones plus climate change data is not currently available, while the Environment Agency make important improvements to their data. The site therefore remains in Flood Zone 3.



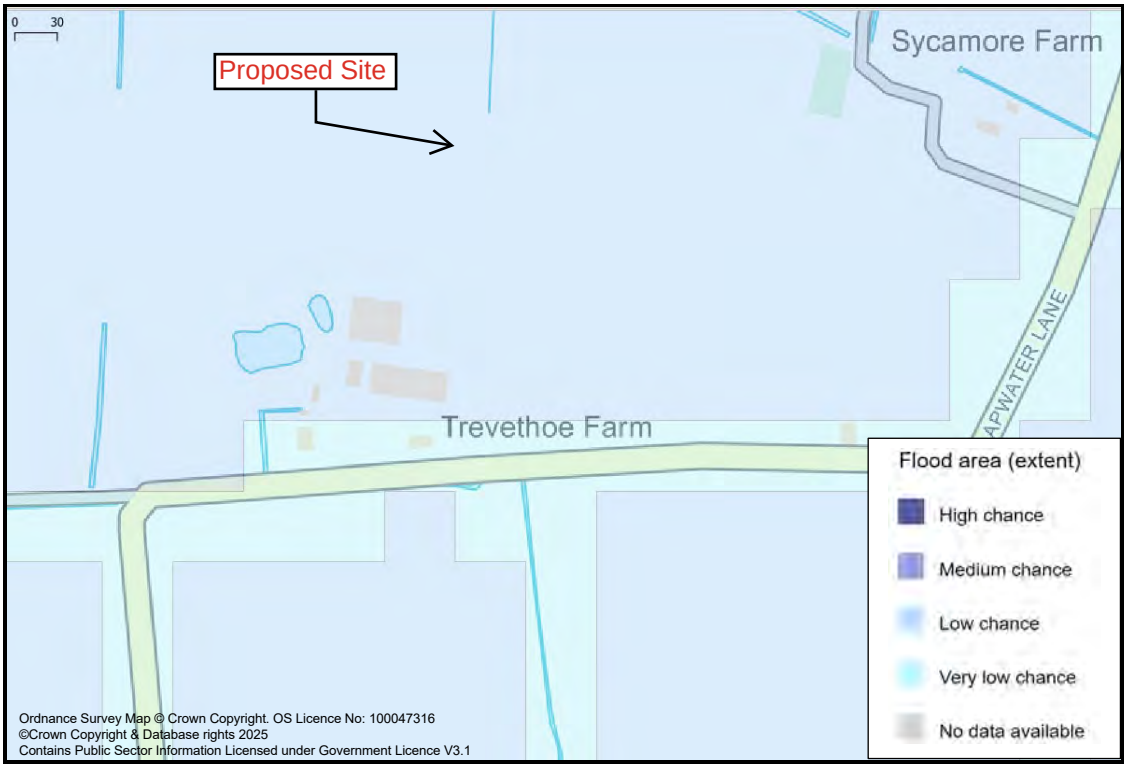
Flood Map for Planning with Climate Change (Source EA)

Risk of Flooding from Rivers & Sea

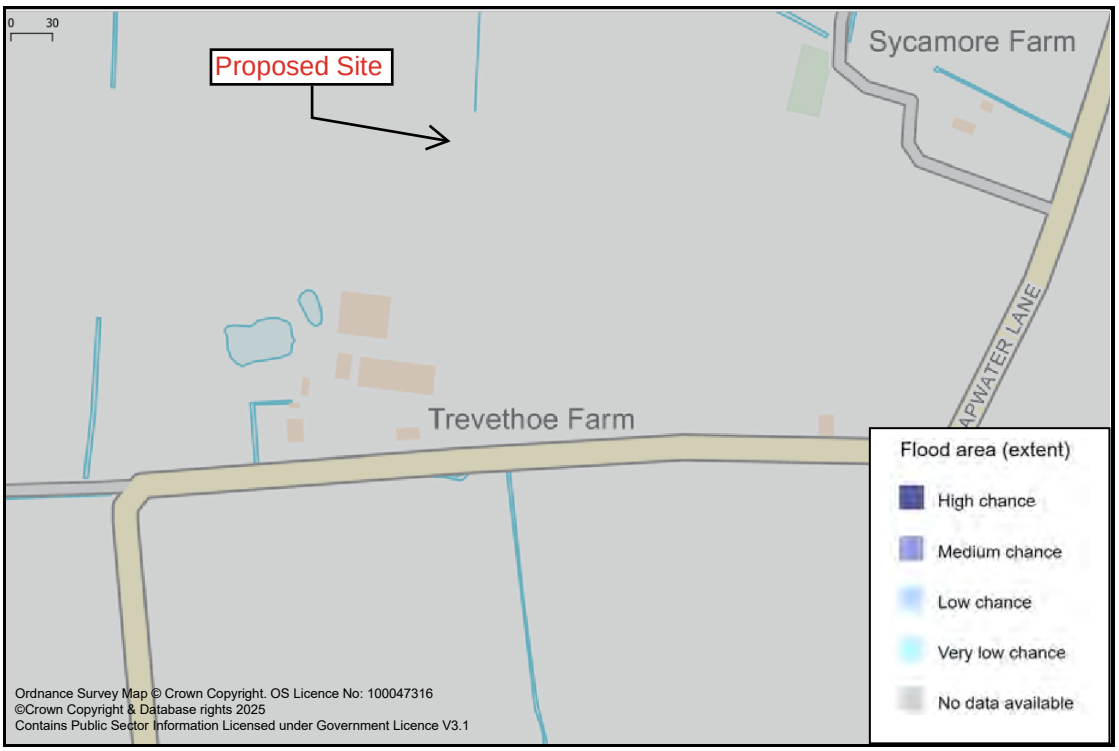
The Risk of flooding from Rivers and Sea maps were updated in January 2025 and for the present day these show that the site for the development, to be a Low Chance. Low means that each year, this area has a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%). This takes into account the effect of any flood defences that may be in this area. Flood defences reduce, but do not completely stop the chance of flooding as they can be overtopped or fail.

The chance of flooding for the area defined in any given year is shown below:

- **High:** greater than 1 in 30 (3.3%).
- **Medium:** between 1 in 100 (1%) and 1 in 30 (3.3%).
- **Low:** between 1 in 1000 (0.1%) and 1 in 100 (1%).
- **Very Low:** less than 1 in 1000 (0.1%)



Risk of flooding From Rivers & Sea Map Present Day (Source EA)



Risk of Flooding from Rivers & Sea Map with Climate change (Source EA)

The Environment Agency do not have at present, any published data for climate change.

Schemes in the Area

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

Fluvial Flood Risk

The site is not considered to be at risk from a fluvial Main River.

River Welland / The Wash.

The site is located approximately 3.3Km south of the tidal River Welland and 4.2Km west from the Wash. The tidal defences protecting this site consist of earth embankments. They are in fair condition and reduce the risk of flooding (at the defence) to a 0.67% (1 in 150) chance of occurring in any year. The Environment Agency inspect these defences routinely to ensure potential defects are identified.

Breach Analysis to Welland / The Wash Defences

Taking the precautionary approach, the Hazard Rating following a breach which in Flood Risk Assessment (FD 2320) Guidance for New Development Phase 2 R& D Technical Report these are classified as low <0.75, moderate 0.75 - 1.25, significant 1.25 - 2.00 and extreme >2.0 based upon an empirical measure of velocity and depth.

HR = d x (v + 0.5) +DF

Where V = Flood flow velocity (m/sec) D = Flood depth (m)

DF = A debris factor included to represent the greater damage, or risk of injury to people, that can occur if debris is swept along with the water. = 0.5 for depths <0.25 or 1.0 for depths.

For the degree of Flood Hazard to be classified as low HR must be <0.75

Flood Hazard			Description
	<0.75	Low	**Caution –** Flood Zone with shallow flowing water or deep standing water.
	0.75 – 1.25	Moderate	**Danger for Some -** (i.e. children) Danger Flood Zone with deep or fast flowing water.
	1.25 – 2.0	Significant	**Danger for Most –** Danger Flood Zone with deep fast flowing water.
	>2.0	Extreme	**Danger for All** – Extreme Danger Flood Zone with deep fast flowing water.

This Flood Risk Assessment has taken the results of the (2017) updated South Holland Strategic Flood Risk Assessment (SHSFRA) into account in its findings.

The whole of the tidal flooding information has been replaced by the mapping from the latest Environment Agency Tidal Hazard mapping. Where the mapping for an area contains both fluvial and tidal components, the more severe of the two has been presented.

The present-day for the Residual Flood Hazard, Depth and Velocity District –1% fluvial and 0.5% Tidal Event Probability maps show that the site where the proposed development is to be located is within hazard area of

Less than 0.75 (Low hazard), Depth of flooding 0 – 0.25m, velocity 0 - 0.3m/sec**. Map 1**

With climate change (2115) the Residual Flood Hazard, Depth and Velocity District –1% fluvial and 0.5% Tidal Event Probability maps show that the site where the proposed development is to be located is within hazard area of Greater than 2.0 (Danger for All) Depth of flooding 1.0 – 1.6m, velocity 0 - 0.3m/sec. **Map 2**

Both National and Local Plan Policy offer support for small scale renewable energy development like what is proposed here.

SOUTH HOLLAND INTERNAL DRAINAGE BOARD

The proposed development site is located within the catchment area of South Holland Internal Drainage Board. The Board are therefore responsible to operate and maintain the arterial fluvial system.

The Board's nearest maintained watercourses close to the site is to the south of Lapwater Lane.



South Holland IDB Drainage Map

HISTORIC FLOODING

The site is not shown on the historic flood map to have been affected by previous flood events

FLOODING FROM OTHER SOURCES

Flooding is a natural process and can happen at any time from sources other than watercourses and the sea.

- Flooding from land can occur from intense rainfall, often over short duration of time that is unable to soak into the ground or enter the drainage system. However, with the natural topographic nature of the ground being flat, with no high ground around the site this will not cause any rapid inundation of the site and is likely only lead to local ponding of shallow depth and low velocity. It is concluded that flooding from this source is limited to minor isolated cases and is not of strategic significance as regards to flood risk.

- Groundwater flooding occurs when groundwater levels increase sufficiently for the water table to intersect the ground surface. Groundwater flooding can occur in a variety of geological settings including valleys, in areas underlain by chalk, and in river valleys with thick deposits of alluvium and river gravels. The area is not known to suffer from any groundwater problems. This location is outside of a groundwater flood alert area.

- Flooding from sewers can occur from overloading from heavy rainfall caused by blockages or having inadequate capacity. There are no public sewers close to the site.

- Non-natural or artificial sources of flooding such as reservoirs, lakes, or canals where water is stored above natural ground level could cause flooding if the structure fails or is over topped.

Reservoirs

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. The mapping displays two scenarios as follows:

- Dry this is the extent when the river levels are normal,
- Wet this is the extent when there is also flooding from rivers.

The mapping displays a worst-case scenario and is only intended as a guide. The site is shown to be at no risk of flooding due to the failure of a large, raised reservoir in both the dry and wet day scenarios. All large reservoirs must be inspected and supervised by reservoir panel engineers as detailed by the enforcement authority for the Reservoirs Act 1975 in England. The EA are responsible to ensure that reservoirs are inspected regularly, and essential safety work is carried out. As such, the risk of flooding from this source is relatively low.

Canals and or Artificial Water Bodies

The site is not at risk of flooding from canals and or Artificial Water Bodies.

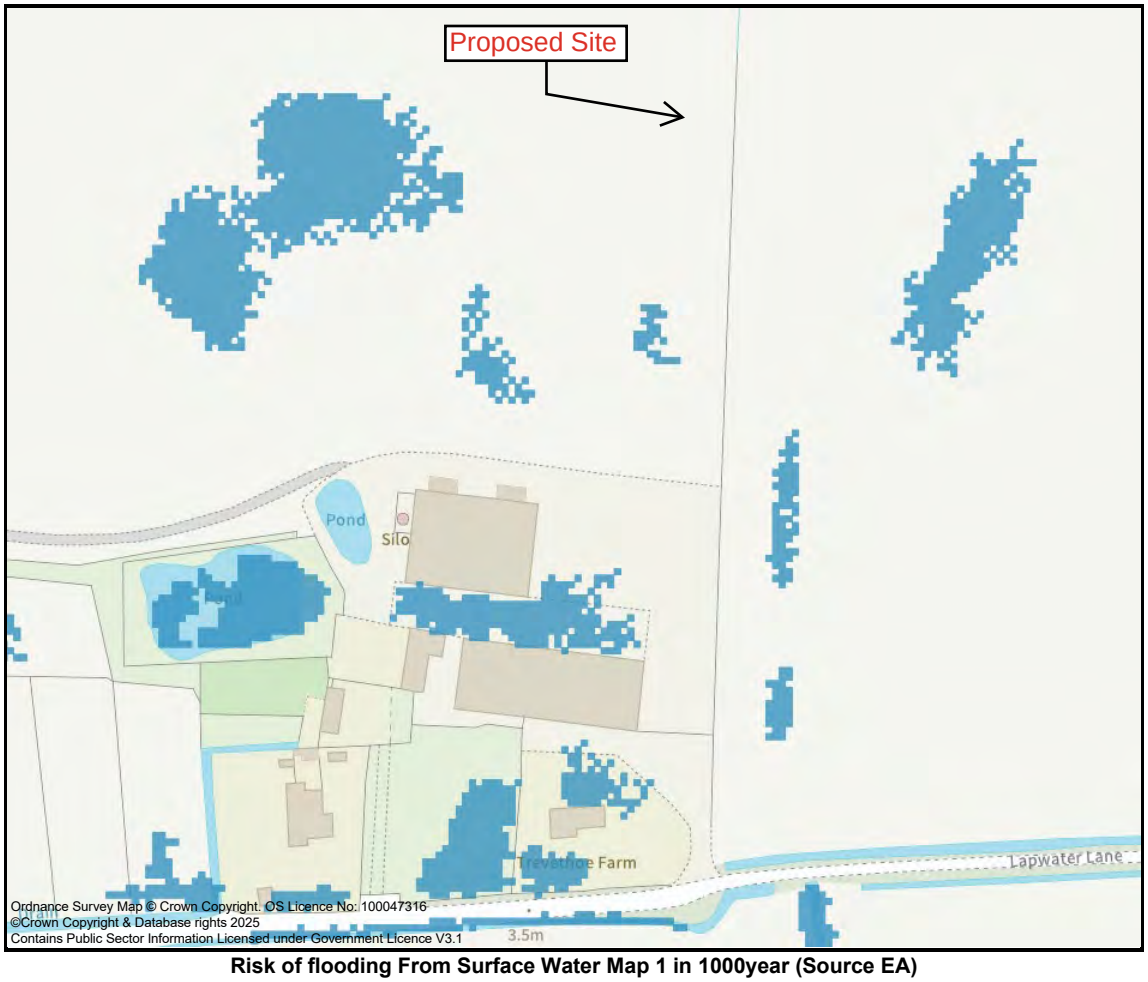
SURFACE WATER FLOODING

The Risk of flooding from surface water was updated in January 2025 and for the1 in 1000-year scenario the map shows the proposed location for the development, to have no chance of flooding.

The chance of flooding for the area defined in any given year is shown below:

- **High:** greater than 1 in 30 (3.3%).
- **Medium:** between 1 in 100 (1%) and 1 in 30 (3.3%).
- **Low:** between 1 in 1000 (0.1%) and 1 in 100 (1%).
- **Very Low:** less than 1 in 1000 (0.1%)

The RoFSW products are an assessment of where surface water flooding may occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. It includes information about flooding extents and depths.



Risk of flooding From Surface Water Map 1 in 1000year (Source EA)

There is a caveat contained in the Environment Agency's "Product description for the risk of flooding from surface water." *RoFSW outputs are generally not suitable for property level assessment; instead, they estimate flood risk to an area of land. The method used does not provide information relating to when the floodwater may be deep enough to start causing damage or disruption to homes, roads or other infrastructure.*

A near-term epoch (2040 – 2060 “2050s” epoch) and central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections.

SEQUENTIAL APPROACH

When applying the sequential approach for flood risk in accordance NPPF the site of the development would fall into Flood Zone 3 (High Probability) as the site is shown to be within the tidal/fluvial flood plain as shown on the Environment Agency’s Flood Map without defences in place.

The Environment Agency categorise land into one of three Flood Zones.

- Flood Zone 1 is land outside the 0.1% floodplain (with a chance of flooding of less than 0.1% chance in any given year)
- Flood Zone 2 is land that falls between the 1 in 100-year extent and the 1 in 1000-year extent (a chance of flooding between 1% and 0.1% in any given year)
- Flood Zone 3a is land which falls within the 1 in 100-year flood extent (has a 1% chance of a flood occurring in any given year).

Applying the Flood Risk Vulnerability Classification in Annexe 3 NPPF, the proposed use is classified as, “Less Vulnerable” with Table 1 of NPPG stating that such uses are appropriate in this zone (as summarised in Table 2 NPPG).

Table 2: Flood Risk Vulnerability and Flood Zone ‘Incompatibility’

Flood Risk Vulnerability Classification		Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone	Flood Zone 1	✓	✓	✓	✓	✓
	Flood Zone 2	✓	✓	Exception Test Required	✓	✓
	Flood Zone 3a	Exception Test Required	✓	✗	Exception Test Required	✓
	Flood Zone 3b Functional Floodplain	Exception Test Required	✓	✗	✗	✗

Sequential & Exception Test

NPPF Guidance Paragraphs 161 - 186 requires development within high areas of flood risk be determined using a sequential risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account the impacts of climate change.

The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding.

The NPPF states that development should not be permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding. It is important to note that the Sequential Test does not specifically mean that sites such as this cannot be developed, rather that sites at less risk should be developed first.

Both National and Local Plan Policy offer support for small scale renewable energy developments. Chapter 14 of the National Planning Policy Framework (NPPF) discusses the challenge of climate change, and paragraph 167 states that local planning authorities should give significant weight to the need to support energy efficiency and low carbon heating improvements to existing buildings, both domestic and non-domestic (including through installation of heat pumps and solar panels where these do not already benefit from permitted development rights).

The solar panels are to serve the applicant's farm with electricity and as such need to be sited close to the farm.

All the land within their ownership is within the same flood risk classification and as such the panels cannot be located elsewhere that is at a lesser risk of flooding.

The exception test is in two parts with the first part being that it must be demonstrated that a development would provide wider sustainability benefits to a community. The proposal will provide benefits through the provision of renewable energy to help meet net zero targets and the construction phase of the development will result in local jobs. No risk to life is associated with the development.

The second part of the exception test is that it must be demonstrated that the development will be safe for its lifetime. This FRA No risk to life is associated with the development.

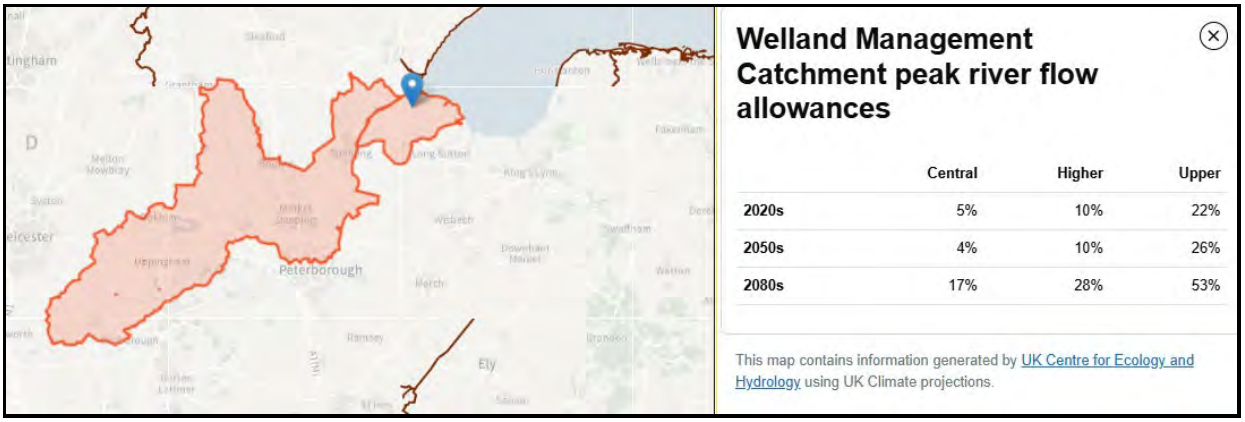
It is concluded that the Sequential and Exception Tests are satisfied.

CLIMATE CHANGE

Global warming is now recognised that it is likely to affect the frequency and severity of extreme events for both tidal and fluvial flooding. The Climate change allowances in the NPPF Guidance was updated, for sea level rise on the17th December 2019, the peak river flows on the 20th of July 2021and peak rainfall allowances 10th of May 2022.

For flood risk assessments, use the Management Catchment Climate Changes for the peak river flow map. Management catchments are sub-catchments of River Basin Districts.

The site is located within the Welland Management Catchment within the Anglian River Basin District, for sites within Flood Zone 2 or 3a for "Less Vulnerable" land uses, the Central allowances figures, in the Table below, should be used.



Peak River Flow Allowances

The results have a climate change increase of 20% added to the peak river flows whereas the updated guidance (20 July 2021) the Central allowance (17%) should be used for "More Vulnerable" uses in flood zone 3a should be added for developments in Anglian RBD/ Welland management catchment.

Peak River flow allowances within the Management Catchment Allowances				
River Basin District /Management Catchment	Allowance category	Total potential change anticipated for '2020s'. (2015 to2039)	Total potential change anticipated for '2050s'. (2040 to2069)	Total potential change anticipated for '2080s'. (2070 to2115)
Anglian/ Welland	Upper End	22%	26%	53%
	Higher Central	10%	10%	28%
	Central	5%	4%	17%

The effect of global warming on peak rainfall allowances is given in Table 1.

Table 1 Peak Rainfall Intensity

Table 1 Peak rainfall intensity allowance in small and urban catchments (1961 to1990 baseline)			
Applies across all of England	Total potential change anticipated for 2010 to 2039	Total potential change anticipated for 2040 to 2059	Total potential change anticipated for 2060 to 2115
Upper End	10%	20%	40%
Central	5%	10%	20%

The annual sea rise due to climate change is given in NPPF and the recommended contingency allowances are stated in Table 2

Table 2 Peak Sea Level Rise

Table 2 Peak Sea level allowance for each epoch in (mm) per year with cumulative sea level rise for each epoch in brackets (use 1981to 2000 baseline)						
Area of England) (Use River Basin	Allowance	2000 to 2035	2036 to 2065	2066 to 2095	2096 to 2125	Cumulative Rise 2000 to 2125 (m)
Anglian	Higher Central	5.8 (203mm)	8.7 (261mm)	11.6 (348mm)	13 (390mm)	1.20m
Anglian	Upper End	7 (245mm)	11.3 (339mm)	15.8 (474mm)	18.1 (543mm)	1.6m

SUSTAINABLE DRAINAGE STRATEGY

Surface Water Drainage

Applications for developments where the proposals will result in the increase the amount of surface water run-off require that an appropriate drainage strategy to be undertaken to ensure that the surface water discharge mimics the existing pre-development regime.

Any proposed surface water drainage system will need to be designed to account for the effects of climate change over the lifetime of the development. Based on the recommendations the proposed drainage systems should be sized for the critical 1 in 100-year storm event and to allow for a 40% increase in rainfall intensity for climate change

Rainfall falling onto the photovoltaic panels will runoff directly to the ground beneath the panels and infiltrate into the ground at the same rate as it does in the site's existing greenfield state.

The array of panels will be situated in rows running from east to west, south facing, inclined at an angle, with a separation between the lines of panels. Each frame contains rows of PV panels, each separated by a horizontal 'rainwater' gap. This gap allows rainwater to drain freely to the ground beneath and between the PV panels, replicating the existing greenfield scenario. The lower edge of the panels will be above the existing ground level, allowing grass to grow underneath the panels.

The additional farm track will be constructed using permeable materials such as a hardcore base using clean, free-draining aggregate (30% voids) with a size range of 4mm to 20mm topped with gravel or granite chippings to mimic the existing predevelopment situation and not increase run-off

Foul Drainage

Government guidance contained within the National Planning Practice Guidance (Water supply, wastewater and water quality – considerations for planning applications, paragraph 20 sets out a hierarchy of drainage options that must be considered and discounted in the following order:

1. Connection to the public sewer
2. Package sewage treatment plant (adopted in due course by the sewerage company or owned and operated under a new appointment or variation)
3. Septic Tank

Ther are no foul drainage requirements for the site.

As there is a positive drainage system capable of receiving flows from the development there is no likely impact on neighbouring property.

CONCLUSION

- The site does have the protection of flood defences which are well maintained by the Environment Agency.

- The site for is shown to be within Flood Zone 3 ‘High Probability' as detailed on the Environment Agency's Flood Zone Maps **without defences**.

- The site is in an area that can receive flood warnings from the Environment Agency Floodline Warning Direct system. It is recommended that the property Owner contact the Environment Agency’s Floodline on 0345 988 1188 to register the farm to receive advance warning of flooding by telephone, mobile, fax, SMS text, email or pager. The Environment Agency aim to issue a ‘severe flood warning’ approximately 2 hours before existing defences are overtopped.

- The Environment Agency usually issues a flood alert between 2 and 12 hours before flooding. The proposed solar panels will not be in use after a flood Warning is issued, for area 383, code 055FWTNENE2B for the far extent of Tidal Flooding from the Wash and Tidal Estuaries, has been issued, the system will be switched off until the Warnings No longer in Force is issued.

- The proposal for the erection of solar panels to provide electricity for the farm complies with the Policies and Government guidance.

- Flooding from other sources is unlikely to affect the site.

- No obvious constraints have been identified that may impact the proposed development and the type of mitigation measures that can be used to reduce the flood risk, there is no increase in the flood risk to others.

- It is therefore concluded that the proposed development can be constructed, safely and sustainably, to meet the requirements of South Holland District Council Development Plan Policies, and the National Planning Policy Framework.

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

Map 1



Environment Agency

Scale 1:550,000

N W E S

▲ East Coast and Wash

See separate data sheet for predicted flood levels

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East Coast and Wash: Immingham to the West Lighthouse

2018 Coastal Flood Boundary Extreme Sea Levels

CFB Ref	Location	Easting	Northing	Annual Chance (1 in x) of Tide Level in metres ODN																	
				1			10			50			100			200			300			1000		
				Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound		
				2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%	97.5%
3888	Immingham	520440	417625	4.16	4.17	4.19	4.50	4.53	4.62	4.73	4.80	5.00	4.83	4.93	5.19	4.93	5.06	5.41	4.98	5.14	5.55	5.15	5.38	6.01
3890	Haborough Marsh	522100	416512	4.14	4.15	4.17	4.48	4.51	4.60	4.70	4.77	4.97	4.80	4.90	5.16	4.90	5.03	5.38	4.94	5.10	5.51	5.11	5.34	5.97
3898	Grimsby	529295	413162	3.98	3.99	4.01	4.31	4.34	4.43	4.53	4.60	4.80	4.61	4.71	4.97	4.71	4.84	5.19	4.74	4.90	5.31	4.88	5.11	5.74
3906	Buck Beck	534709	407369	3.87	3.88	3.90	4.19	4.23	4.31	4.41	4.50	4.68	4.50	4.61	4.86	4.61	4.75	5.10	4.64	4.82	5.22	4.80	5.05	5.66
3910	Tetney	538035	405537	3.85	3.86	3.89	4.17	4.22	4.30	4.40	4.50	4.67	4.49	4.61	4.86	4.60	4.75	5.10	4.63	4.82	5.21	4.80	5.06	5.66
3918	Donna Nook	544641	401997	3.82	3.83	3.86	4.14	4.19	4.27	4.38	4.48	4.65	4.47	4.60	4.85	4.58	4.74	5.10	4.63	4.82	5.22	4.81	5.08	5.68
3928	Saltfleet	549131	393360	3.78	3.79	3.82	4.11	4.16	4.26	4.36	4.46	4.64	4.47	4.59	4.86	4.57	4.74	5.11	4.63	4.83	5.25	4.83	5.11	5.74
3942	Boygrift	555131	380860	3.72	3.74	3.77	4.06	4.11	4.22	4.33	4.43	4.65	4.43	4.57	4.87	4.56	4.73	5.13	4.62	4.83	5.28	4.85	5.15	5.82
3968	Gibraltar Point	557652	356181	4.16	4.17	4.20	4.51	4.56	4.67	4.76	4.85	5.08	4.85	4.97	5.27	4.94	5.10	5.49	4.99	5.18	5.63	5.14	5.41	6.09
3992_14	Hobhole	535990	340116	4.96	4.97	5.01	5.40	5.44	5.56	5.66	5.76	5.98	5.78	5.90	6.20	5.88	6.04	6.44	5.92	6.11	6.57	6.03	6.31	6.99
	Grand Sluice*	532366	344510	4.93	4.94	4.98	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
3992_9	Boston Barrier	532754	342852	4.93	4.94	4.98	5.41	5.45	5.57	5.73	5.83	6.05	5.85	5.97	6.27	5.93	6.09	6.49	5.94	6.13	6.59	5.98	6.26	6.94
3992_5	Fosdyke Bridge	531886	332234	4.87	4.88	4.92	5.31	5.35	5.47	5.58	5.68	5.90	5.71	5.83	6.13	5.82	5.98	6.38	5.87	6.06	6.52	6.01	6.29	6.97
4008	West Lighthouse	550094	329971	4.87	4.88	4.91	5.21	5.26	5.37	5.46	5.56	5.78	5.56	5.68	5.98	5.66	5.82	6.21	5.71	5.90	6.35	5.86	6.14	6.81
-	Marsh Road	525988	324065	-	5.04	-	-	5.44	-	-	5.73	-	-	5.85	-	-	5.98	-	-	-	-	-	-	-
-	Wisbech	546110	309940	-	4.83	-	-	5.25	-	-	5.53	-	-	5.66	-	-	5.78	-	-	-	-	-	-	-
-	Dog-in-a-Doublet	527200	299287	-	3.67	-	-	4.00	-	-	4.22	-	-	4.32	-	-	4.42	-	-	-	-	-	-	-

See next page for notes

Customer services line: 03708 506 506
Calls to 03 numbers cost the same as calls to standard geographic numbers
(i.e. numbers beginning with 01 or 02)

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

East Coast and Wash: Immingham to the West Lighthouse

2018 Coastal Flood Boundary Extreme Sea Levels

NOTES:

The following notes apply to all CFB sites (ie all on table excluding Marsh Road, Wisbech, Dog-in-a-Doublet)

- The base date for the data is 2017.
- The levels are still water levels. Depending on the use of the data it may be necessary to consider wave heights and / or joint probability analysis of water level and other variables.
- Levels for other annual chance probabilities are available if required.
- For additional information relating to the 2018 Coastal Flood Boundary Extreme Sea Levels or to access the full dataset for the above sites or intermediate locations refer to the Defra Metadata Catalogue at https://deframetadata.com/geonetwork/srv/eng/catalog.search#/metadata/84a5c7c0-d465-11e4-b0bd-f0def148f590

The following notes apply to all Marsh Road, Wisbech, Dog-in-a-Doublet

- The base date for the data is 2006
- The levels are still water levels. Depending on the use of the data it may be necessary to consider wave heights and / or joint probability analysis of water level and other variables.
- Levels for other annual chance probabilities are available if required.
- These levels will be updated as their respective tidal river models are updated.

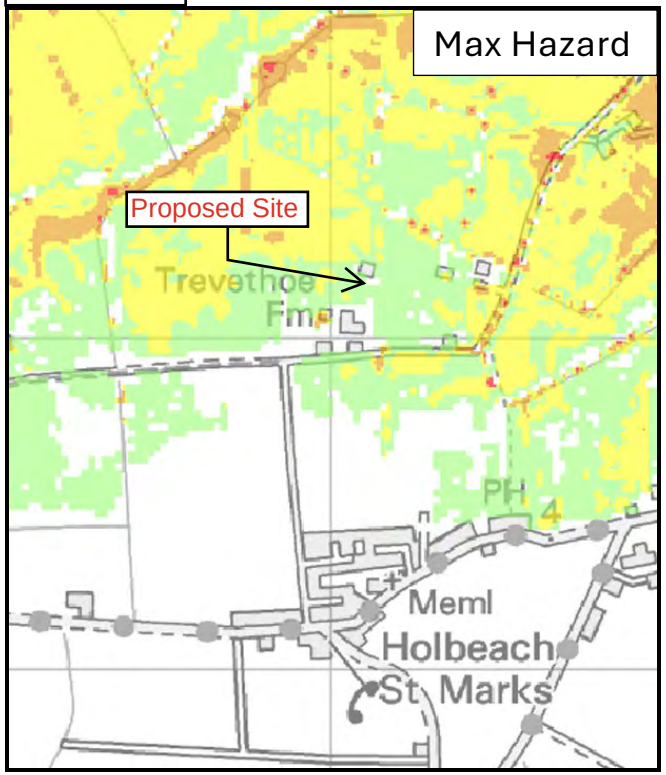
The following notes apply to Grand Sluice

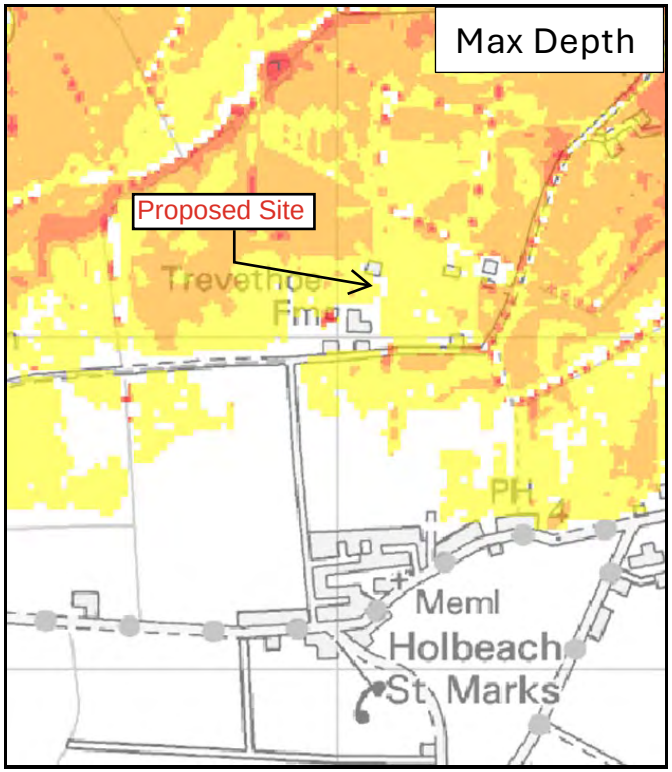
- Grand Sluice remains the tidal limit for the River Witham.
- The data is based on CFB 2018 data for Boston Barrier site, capped at 5.3mAOD to reflect use of the barrier which raises for tides above this level.
- The base date for the data is 2017
- The levels are still water levels. Depending on the use of the data it may be necessary to consider wave heights and / or joint probability analysis of water level and other variables.
- For additional information relating to the 2018 Coastal Flood Boundary Extreme Sea Levels or to access the full dataset for the above sites or intermediate locations refer to the Defra Metadata Catalogue at https://deframetadata.com/geonetwork/srv/eng/catalog.search#/metadata/84a5c7c0-d465-11e4-b0bd-f0def148f590

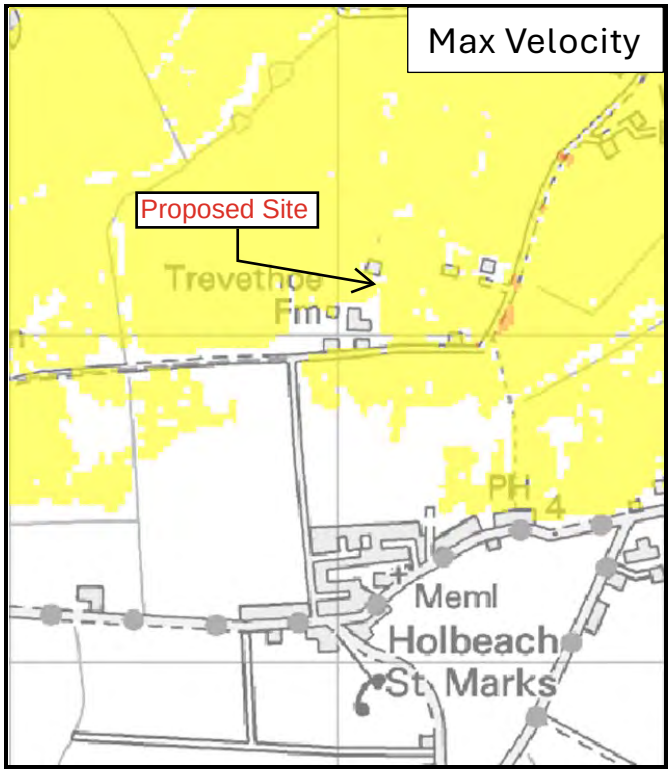
Customer services line: 03708 506 506
Calls to 03 numbers cost the same as calls to standard geographic numbers
(i.e. numbers beginning with 01 or 02)

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

Map 2







Max Hazard
(Flood Risk to People : FD2320)

- Less than 0.75 (Low Hazard)
- Between 0.75 and 1.25 (Danger for Some)
- Between 1.25 and 2.0 (Danger for Most)
- Greater than 2.0 (Danger for All)

Max Depth (m)

- 0 - 0.25
- 0.25 - 0.50
- 0.50 - 1.0
- 1.0 - 1.6
- 1.6 +

Max Velocity (m/s)

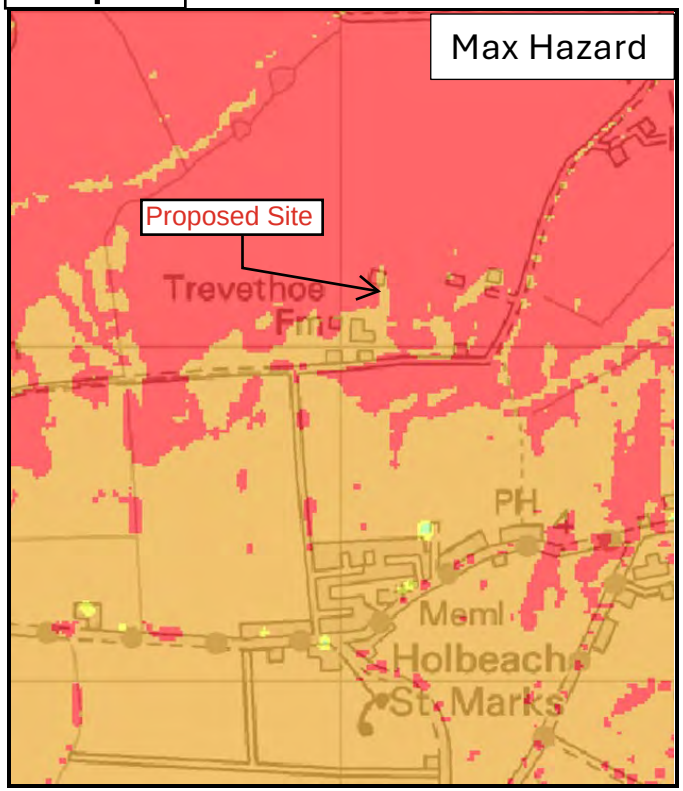
- 0 - 0.3
- 0.3 - 1.0
- 1.0 - 1.5
- 1.5 - 2.5
- 2.5 +

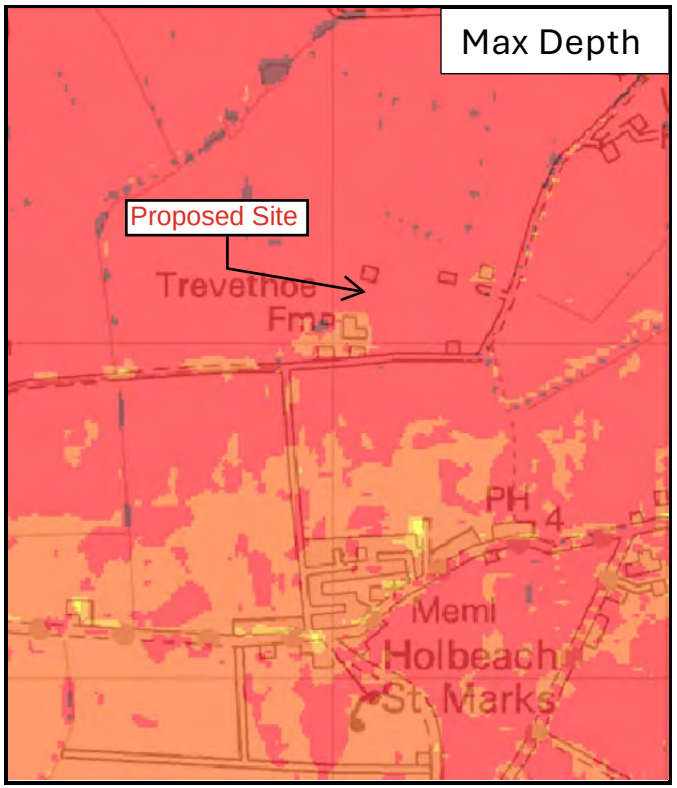
UPDATE OF STRATEGIC FLOOD RISK ASSESSMENT

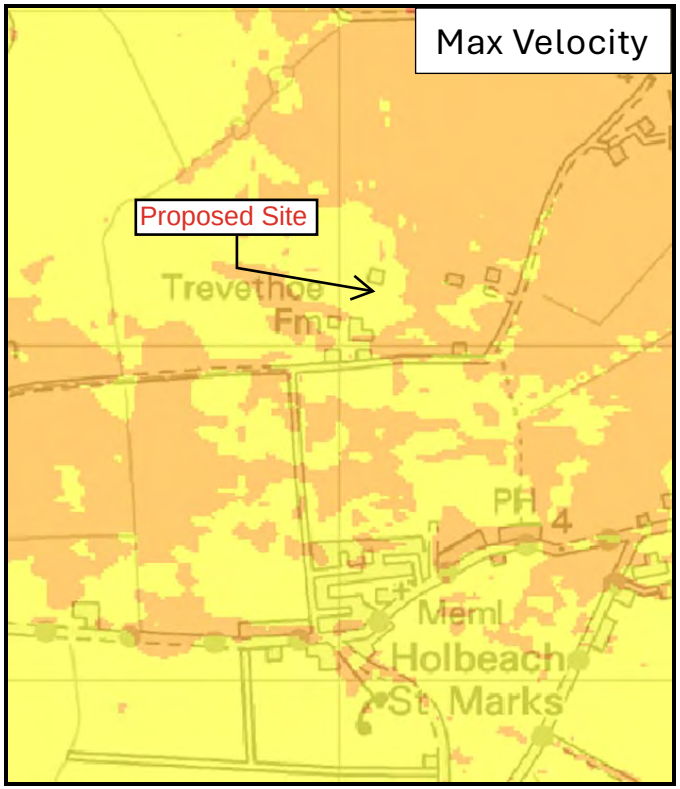
The Wash Residual Hazard, Depth & Velocity Maps District

Present Day 1% Fluvial / 0.5% Tidal Event Probability

Map 3







Max Hazard
(Flood Risk to People : FD2320)

- Less than 0.75 (Low Hazard)
- Between 0.75 and 1.25 (Danger for Some)
- Between 1.25 and 2.0 (Danger for Most)
- Greater than 2.0 (Danger for All)

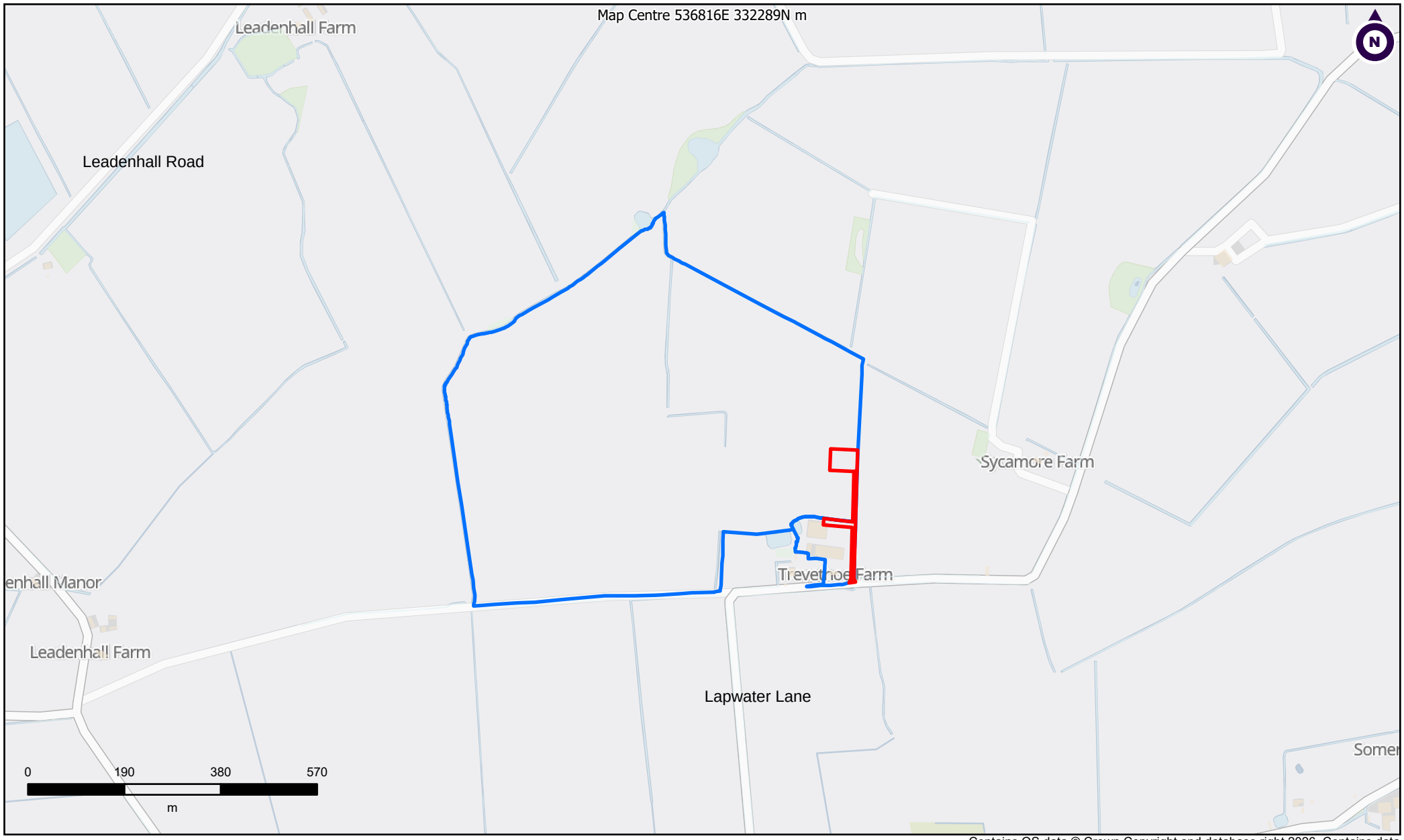
Max Depth (m)

- 0 - 0.25
- 0.25 - 0.50
- 0.50 - 1.0
- 1.0 - 1.6
- 1.6 +

Max Velocity (m/s)

- 0 - 0.3
- 0.3 - 1.0
- 1.0 - 1.5
- 1.5 - 2.5
- 2.5 +

UPDATE OF STRATEGIC FLOOD RISK ASSESSMENT
The Wash Residual Hazard, Depth & Velocity Maps District
2115 Climate Change 1% Fluvial / 0.5% Tidal Event
Probability



Contains OS data © Crown Copyright and database right 2026. Contains data

Client: The Crown Estate

Project: Trevethoe Farm

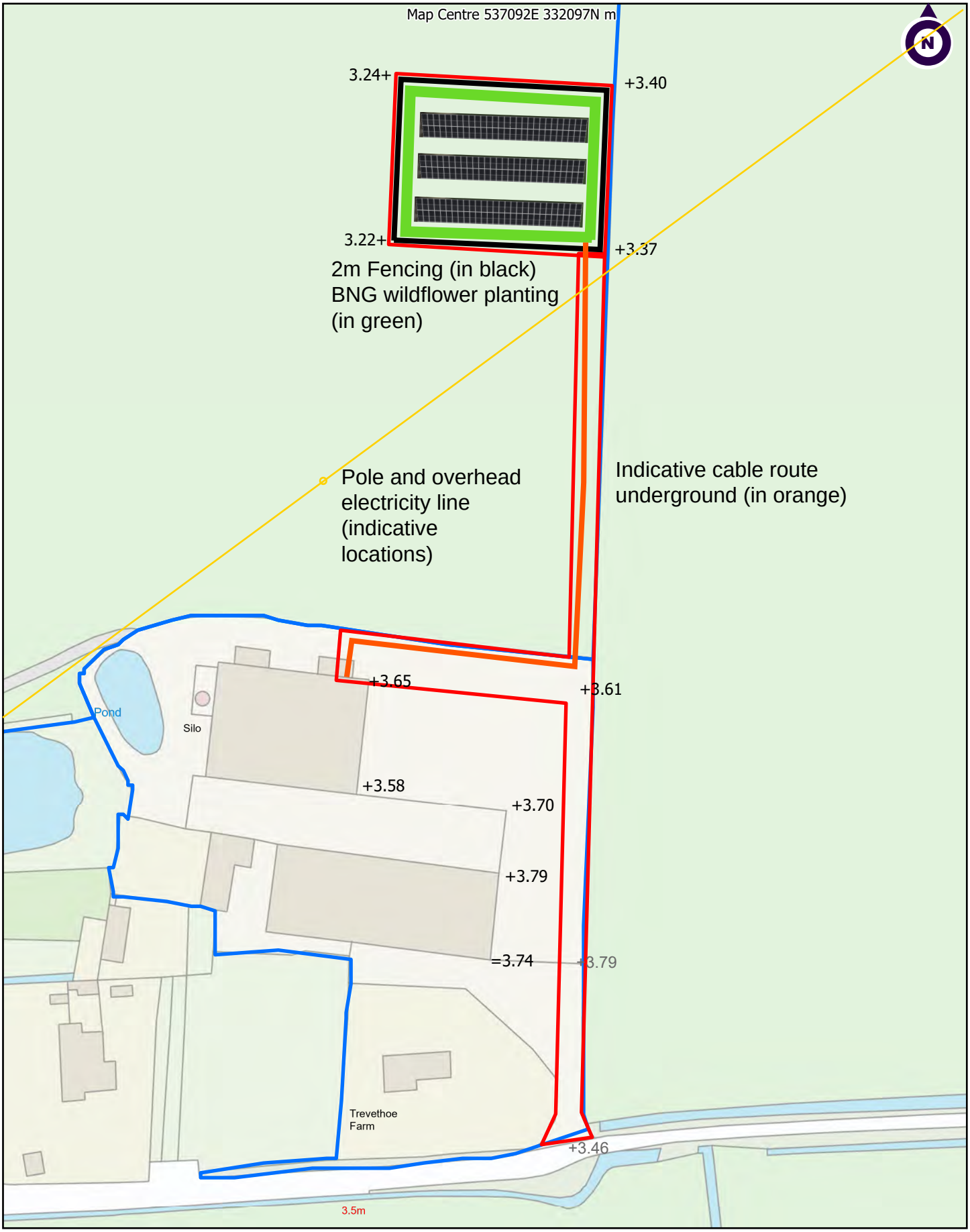
Title: Site Location Plan

Scale 1:10,000 @A4 Date: 4/1/2026

Drawn By: Dwg no:

Carter Jonas
Two Snow Hill, Birmingham, B4 6GA
T: 0121 794 6250
carterjonas.co.uk

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Client: The Crown Estate
Project: Trevethoe Farm

Title: Proposed Site Plan

+3.79 Lidar 1m DTM Data to OS Datum

Scale 1:1,250 @A4

Date: 3/31/2026

Drawn By:

Dwg no:

Carter Jonas

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