

FLOOD RISK ASSESSMENT

Agricultural Workers Accommodation
Vickers Park,
Washway Road,
Moulton Marsh,
PE12 6LP

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RMA

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FLOOD RISK ASSESSMENT FOR PROPOSED AGRICULTURAL WORKERS ACCOMMODATION - VICKERS PARK, WASHWAY ROAD, MOULTON MARSH, PE12 6LP

EXECUTIVE SUMMARY

Summary of Possible Sources of Flooding		
Source	Significant	Comment
Fluvial (Main River)	No	The site is not risk from Fluvial sources
Tidal	Low/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	Unlikely due to ground conditions
Overland flow	No	No high ground surrounding the site
Blockage	Low	South Holland IDB watercourse adjacent 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 the site of Vickers Park, Washway Road, Moulton Marsh, PE12 6LP within the South Holland District Council's administrative area. The National Grid Reference is TF16950 48098. **Plan 1**

This flood risk assessment has been prepared for a planning application, for the erection of seasonal agricultural workers' accommodation (4 no. static caravans/lodges), for occupation by agricultural workers, in connection with the applicant's current horticultural and agricultural business. Naylor Flowers Limited grows cut flowers and potatoes on approximately 202 hectares of land in a 16km radius of Moulton Seas End. **Plan 2**

A planning approval was granted 19 Nov 2019 Ref H3-0965-19 for similar workers accommodation but has now lapsed. The approval had an occupation restriction.

Condition 4 The occupancy period of the static caravans/lodges hereby permitted shall be restricted to between the 1 February and 31 October (inclusive) in any one year.

The growing of cut flowers is seasonal, and the application proposes that with the drop-off in the need for workers in the winter months, the caravans and lodges will only be in use for 9 months in the year (the HMOs will be used for the remaining time). Accordingly, the use is temporary: the accommodation is of temporary construction and will not be occupied year-round. However, and somewhat obviously, the need for the workers and, therefore, the accommodation remains each year. Those workers needed outside of this period will be housed in the existing dwellings. The site will therefore not be used for permanent occupation. There is also a pair of semi-detached three-bedroom dwellings on site also owned by the applicant that will be used to house workers, and which will be occupied as 'small homes in multiple occupation'.

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 Definitio0n

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 Table 2 of NPPG, it is contended, that with the site use for the seasonal workers, not occupying the site from the 1st November to 31st January in the following year, the proposed residential use should be classified as “More Vulnerable”, with Table 1 of NPPF stating that such uses are appropriate in this zone. The residential units do not provide, or are not intended to provide, permanent residential accommodation, as defined in the “Highly Vulnerable” classification but are more in line with short lets as defined in the “More Vulnerable” classification. A Flood Warning and Evacuation Plan will be prepared. Any seasonal workers required on site in the closed period will be housed in the adjacent two storey properties.

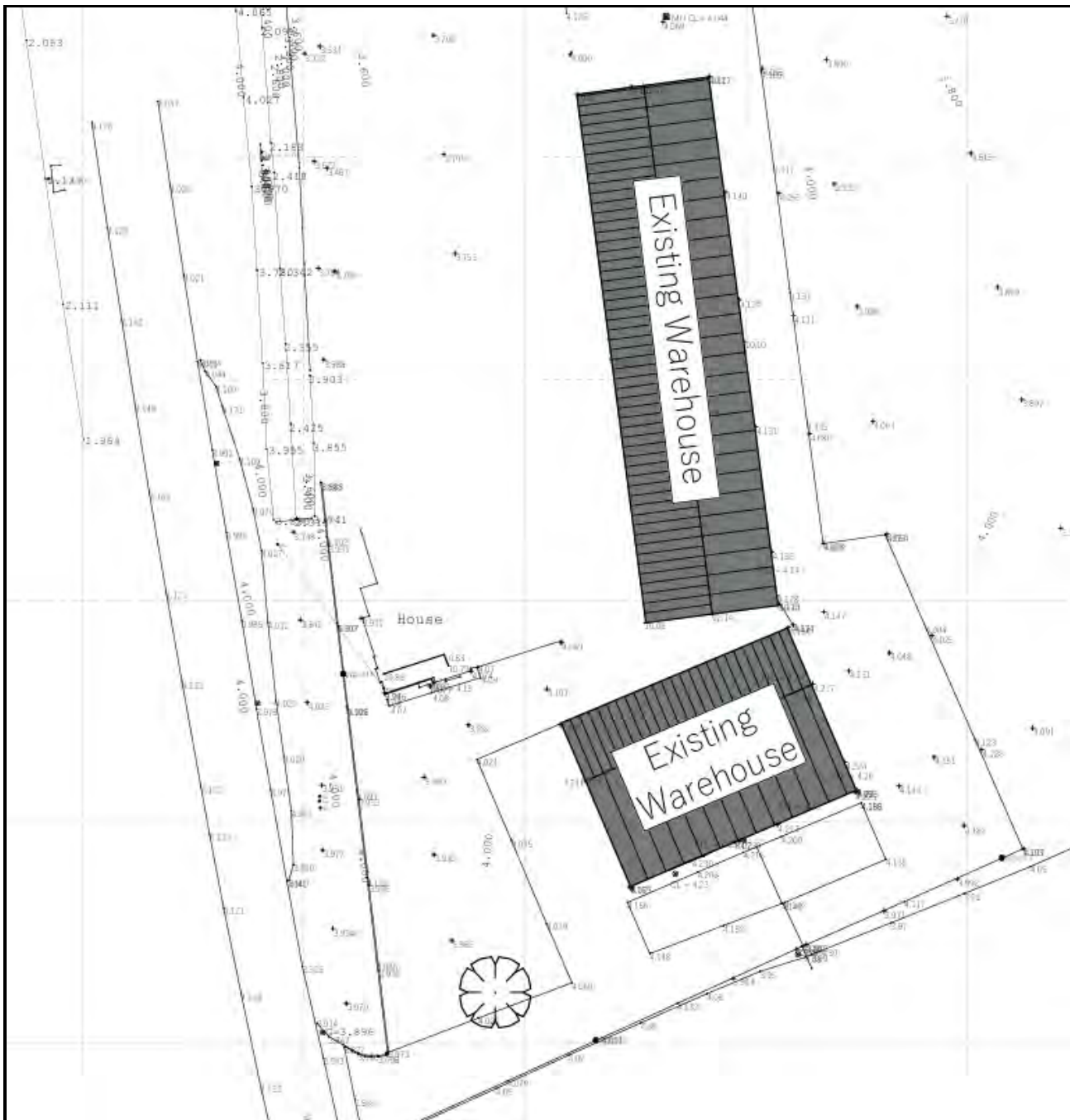
Table 2: Flood Risk Vulnerability Classification

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 caravan and camping, subject to a specific warning and Evacuation Plan.

This seasonal variation in labour demand will mean that the accommodation units will not be required during the time of year when a flooding incident is most likely. Accordingly, the requirement by the Environment Agency for this type of accommodation to be vacant during winter months can be complied with.

Site Levels

The site is generally flat land levels taken from the topographical survey average 3.75mODN, Washdyke Road at the site entrance being at a level of 4.00mODN. Plan 2



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:

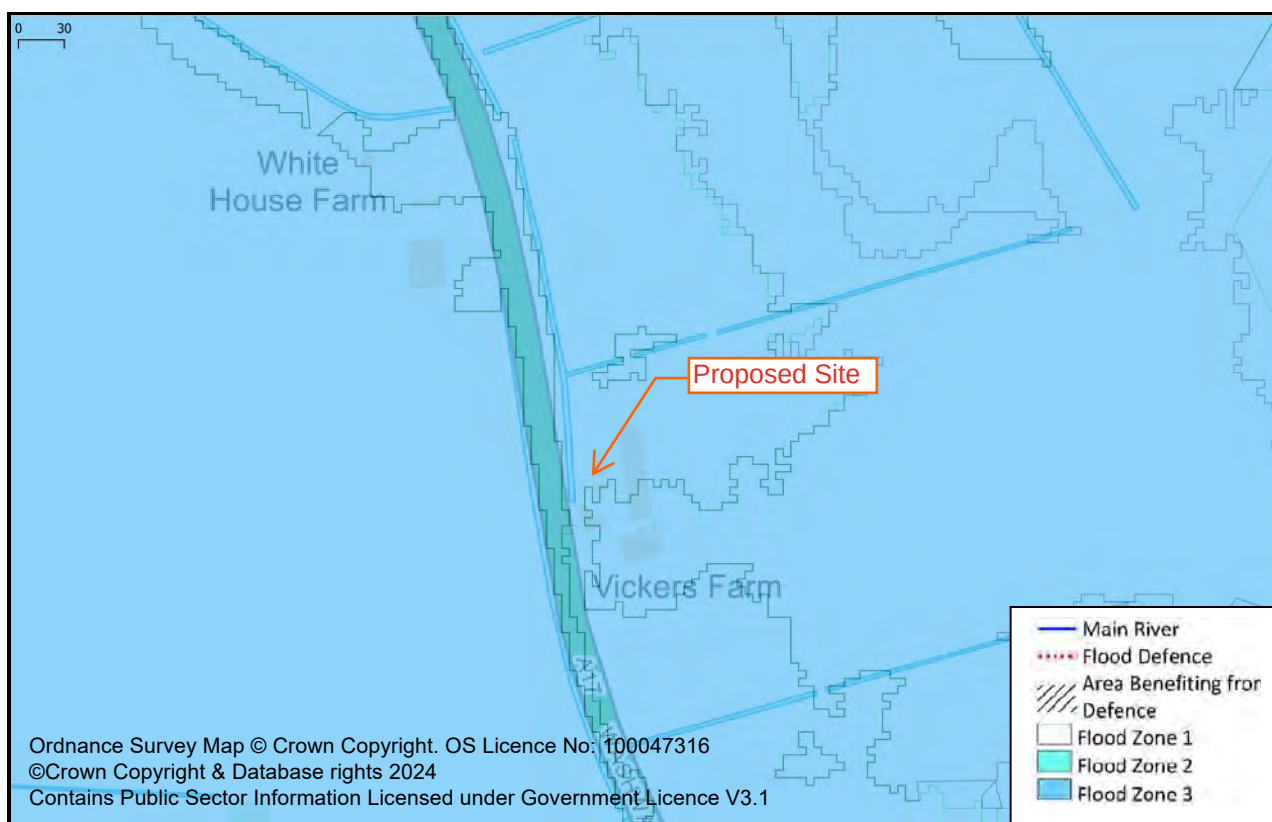
- The River Welland and The Wash

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 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).



Flood Map for Planning (Source EA)

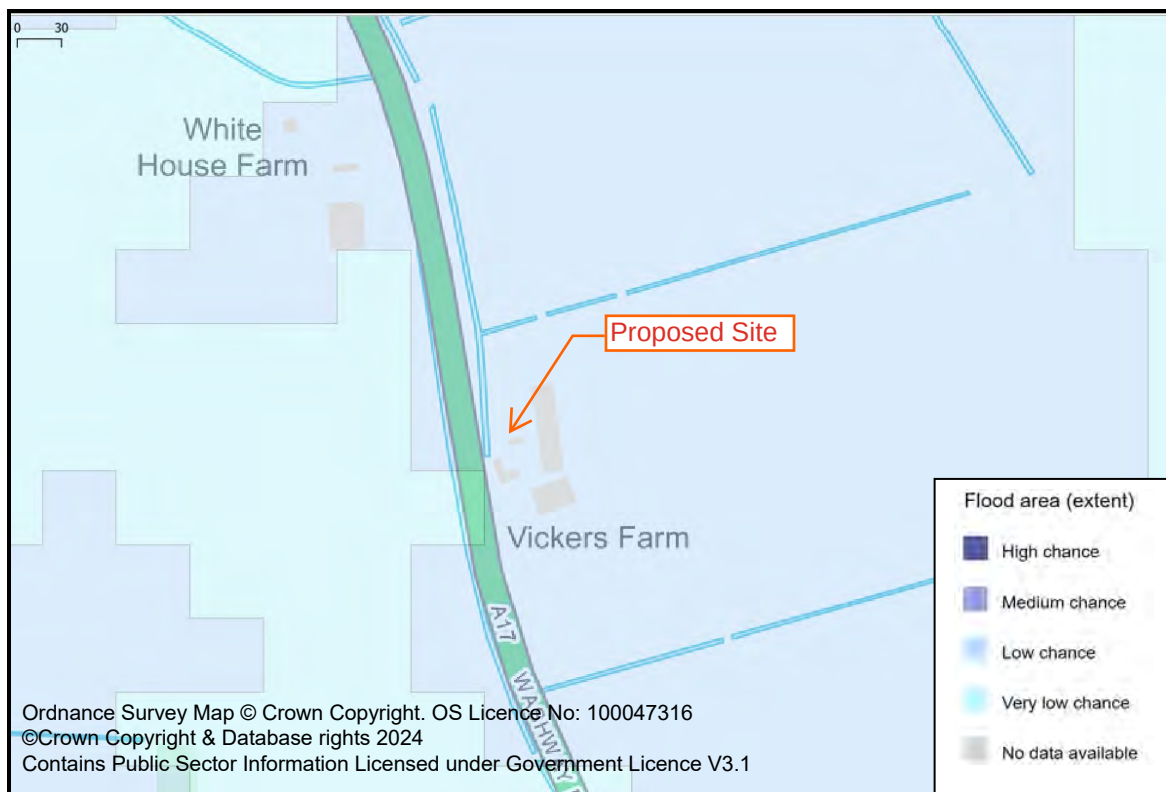
Risk of Flooding from Rivers & Sea

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 at Low Chance. Low means that each year, this area has a chance of flooding between 0.1% and 1.0%. 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)

The Environment Agency does not have at present, any data for the yearly chance of flooding between 2026 – 2069.



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

Schemes in the Area

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

Fluvial Flooding

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

Tidal Flooding

The site may be at risk from tidal flooding in the form of residual risk due to the failure of flood management infrastructure such as a breach of a raised flood defence.

The Wash

The Wash lies some 9.0km to the north-east of the site. The Wash embankments constitute the first line of defence against any tidal flooding. These consist of earth embankments. This earth embankment crest level is circa 7.00mODN with a predicted 1 in 200-year peak tide of 6.04mODN at Hobhole.

River Welland

The River Welland lies some 2.7Km to the north of the site and is tidal down stream of Marsh Lane Sluice, the present day 1 in 200-year tide flood level is 5.99mODN at Fosdyke Bridge. The tidal flood defences of the tidal River Welland consist of earth embankments which are in good condition and the crest heights are circa 7.00mODN.

Breach Analysis to North Sea Tidal Defences

Peak tide levels (2017) for the 1 in 200-year 50% confidence bound tide level is 5.98mODN at Fosdyke Bridge and 6.04mODN at Hobhole, taken from the Lincolnshire & Northamptonshire Area Tidal Modal Analysis, levels for East Coast and Wash: Immingham to the West Lighthouse. The base date for the data is 2017, which should be used in any consideration of future increases due to climate change. **Map 1**

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 1.25-2.50 and extreme >2.50 based upon an empirical measure of velocity and depth.

$$HR = d \times (v + 0.5) + DF$$

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.

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.

For certain locations The Environment Agency have carried out modelling to map the maximum values of flood depth, velocity and hazard rating (danger to people) resulting from overtopping and / or breaching of defences at specific locations for several scenarios.

The Tidal Breach Hazard Maps, for Scenario year 2006, for the 1 in 1000-year event, show that the site is not within a Hazard Rating area. **Map 2**

The Tidal Breach Hazard Maps for Scenario year 2115 for the 1 in 1000-year event show that the site is within a Hazard Rating area of less than 0.75 (Low Hazard) depth 0. – 0.25m and velocity 0 – 0.3m/s. **Map 3**

The Environment Agency has also produced maps based on computer modelling of simulated overtopping of defences along the coastline for specific tidal scenarios. The maps only consider the consequences of overtopping of defences and do not show the possible consequences of breaches of the tidal defences. For future climate change scenarios, it is assumed that the defences remain at 2006 heights.

The Tidal Overtopping Hazard Maps for Scenario year 2115 for the 1 in 1000-year event show that the site is within a Hazard Rating area of between 0.75 – 1.25 (Danger for Some) depth 0.25 – 0.5m and velocity 0 – 0.3m/ **Map 4**

Floor Levels

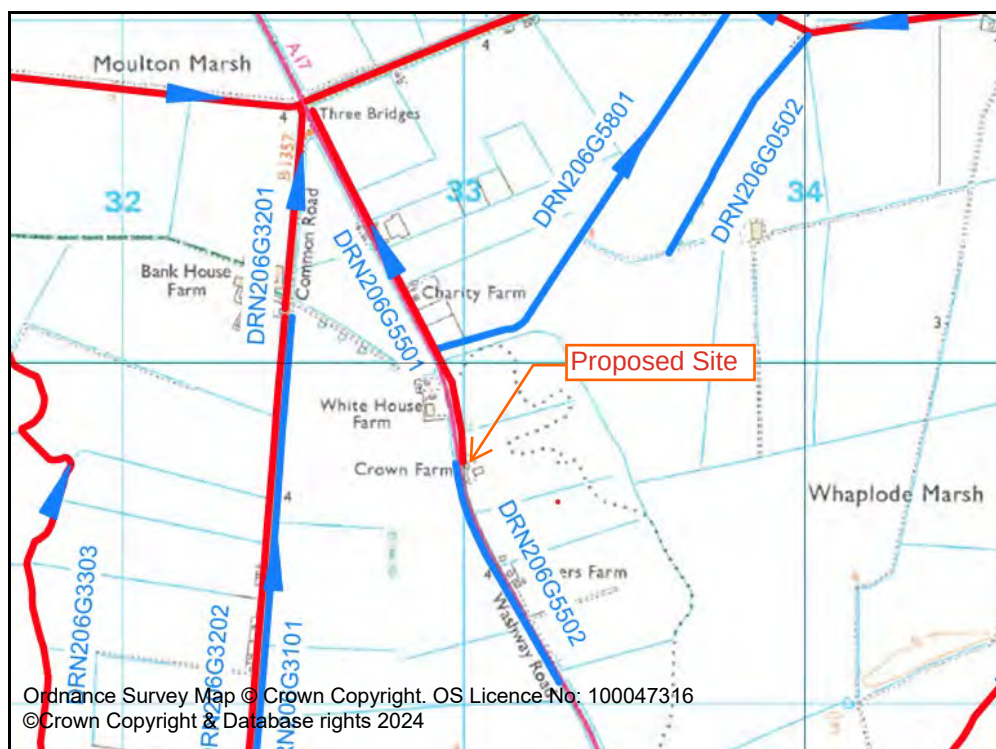
The Environment Agency recommends that appropriate mitigation measures / flood resilience techniques are incorporated in the design of developments in flood risk areas. The minimum mitigation measures required for single storey developments or developments that do include ground floor sleeping shall be determined by the flood depths arising from the 2115 0.1% breach scenario. Any developments that do not include ground floor sleeping can be informed by the flood depths arising from the 1 in 200-year 0.5% breach scenario.

With the site being at risk from a tidal breach flood events and that the static caravans, which provide temporary accommodation for the seasonal workers, are classed as “More Vulnerable” development for which appropriate mitigation measures cannot be provided, which is sufficient, during an event, to ensure reduced risk. Therefore, it is proposed to prevent the loss of life, that the 4 No static caravans/lodges, hereby permitted, shall only be occupied between 1st February and the 31st October) in any year.

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 drains around the site play a significant part in the local drainage. The nearest Board's drain is on the west side of the development site, which is drain No DRN206G5502, P55 Washway Road A17 This outfalls into the River Welland at Holbeach River Sluice.



South Holland IDB Drainage Map

The Board's prior written consent will be required for any of the following works:

- No person without the previous consent of the Board shall erect any building or structure, whether temporary or permanent, or plant any tree, shrub, willow or other similar growth within 9 metres of the landward toe of the bank where there is an embankment or wall or within 9 metres of the top of the batter where there is no embankment or wall, or where the watercourse is enclosed within 9 metres of the enclosing structure.
- No person shall, without the previous consent of the Board, for any purpose, by means of any channel, siphon, pipeline or sluice or by any other means whatsoever, introduce any water into the District or, whether directly or indirectly, increase the flow or volume of water in any watercourse in the District.
- The erection or alteration of any mill dam, weir or other like obstruction to the flow, or erection or alteration of any culvert within the channel of a riparian watercourse.

An application will be made to South Holland IDB for consent to discharge the treated effluent from the package treatment unit

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. The ground floor level for the static caravans/ lodges are raised 600mm above the existing ground level. 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.
- Flooding from sewers can occur from overloading from heavy rainfall caused by blockages or having inadequate capacity. There are no public sewers in the vicinity of 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:

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

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 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.

RESIDUAL RISKS

There is always a possibility of a flood more than that allowed for which might conceivably cause some flooding to

the properties. However, such an event would have a very low probability and the risk of flooding to the property would be extremely small. It is therefore considered that the residual risks associated with flooding are not significant.

SURFACE WATER FLOODING

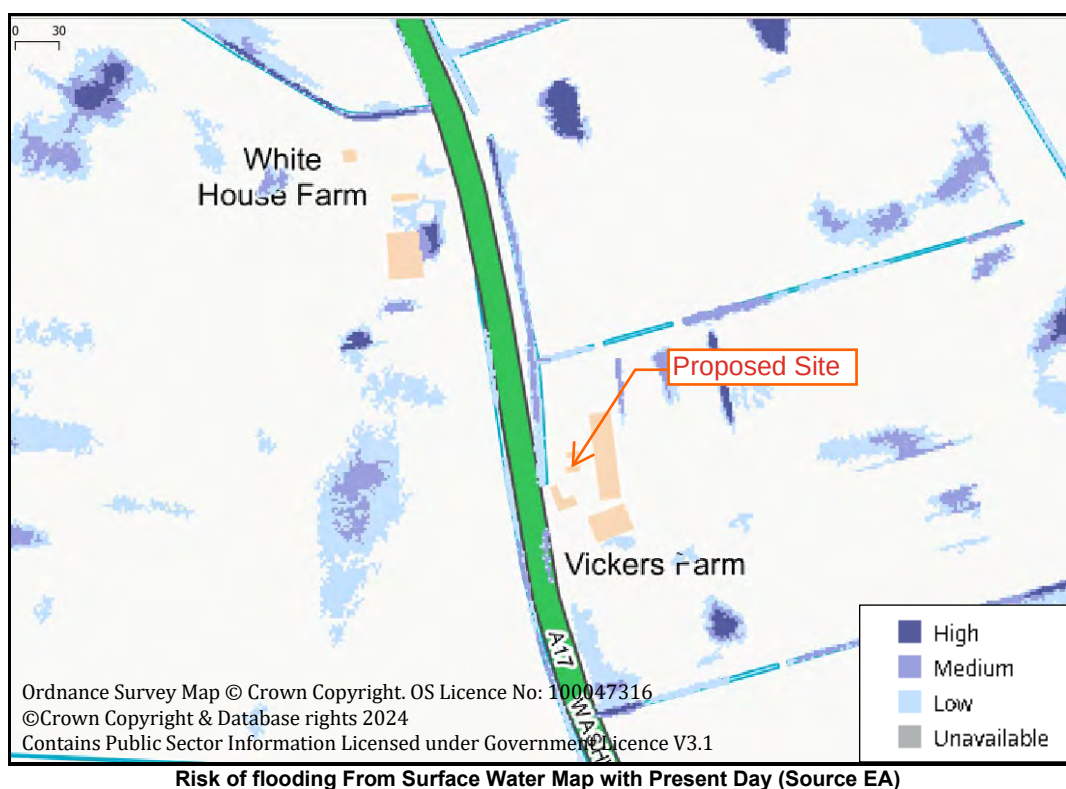
The Risk of flooding from surface water was updated in January 2025 and for the climate change scenario the map shows the proposed location for the development, to be at no risk for both the present day and with climate change scenarios.

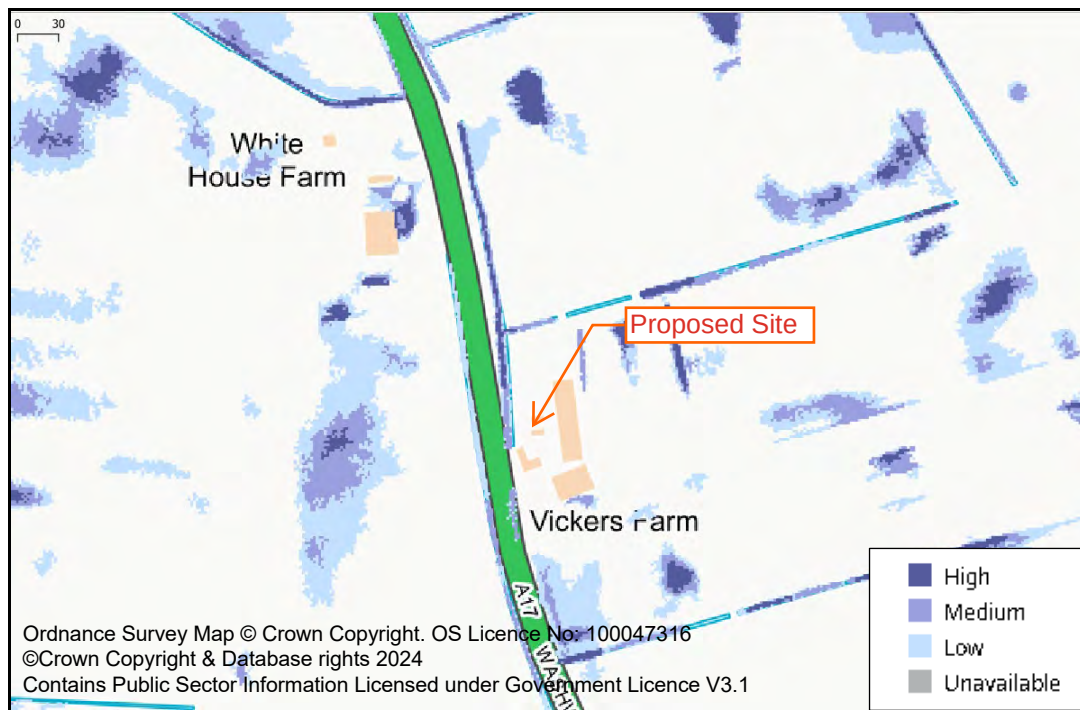
The chance of flooding for the area defined in any given year is shown below:

- **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.

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.*





Risk of flooding From Surface Water Map with Climate Change (Source EA)

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 Table 2 of NPPG, the proposed residential use is classified as, “More Vulnerable” with Table 1 of NPPG stating that such uses are appropriate in this zone (as summarised in Table 3 NPPG).

Table 3: Flood Risk Vulnerability and Flood Zone 'Compatibility'

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.

The Sequential Test will be defined by local circumstances relating to the catchment area for the development., when applying the Sequential Test, a pragmatic approach on the availability of alternative sites should be taken in considering for example, planning applications for extensions of existing business premises such as farm holdings, where it might be impracticable to suggest that there are more suitable alternative locations for that development elsewhere. In this case, the farm business is centred on the land owned and farmed by the applicant and to consider areas outside the farm holding would not be practical. The whole of the farm holding is at a similar level within a Flood Zone 3a area (without defences), the chosen site for the residential units, for use by agricultural workers, have been located on ground adjacent to the existing farmhouse.

Having workers based on the farm represents an established method of providing a well-managed, cost effective and sustainable work force enabling the farming business to operate and plan effectively.

It is concluded that the Sequential test and Exceptions test 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 the 17th December 2019, the peak river flows on the 20th of July 2021 and 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.

Peak River Flow Allowances

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

Peak River flow allowances within the Management Catchment Allowances				
River Basin District /Management Catchment	Allowance category	Total potential change anticipated for '2020s'. (2015 to 2039)	Total potential change anticipated for '2050s'. (2040 to 2069)	Total potential change anticipated for '2080s'. (2070 to 2115)
Anglian/ Welland	Upper End	22%	26%	53%
	Higher Central	10%	10%	26%
	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 to 1990 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 1981 to 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.

In accordance with recognised guidance, Part H of the Building Regulations 2010 and National Planning Policy Framework, there is a hierarchy of where surface water should discharge. This hierarchy should be followed where practicable, and is as follows:

- 1) Infiltration
- 2) Watercourse
- 3) Public sewer

The surface water from the roof of the static caravans will discharge to ground to infiltrate away, as any other caravan. The access and parking areas will be constructed with permeable material such as permeable stone with granite chippings to the surface, thus mimicking the existing situation.

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

With there being no foul public sewers within the vicinity of the development, the foul drainage from the building will be collected in underground pipes designed in accordance with Building Regulations. Document H and be connected into a suitable sized package treatment unit such as a Klargester Sewage Treatment Plant. Discharge will be to the nearby IDB watercourse.

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

FLOOD RESILIENCE CONSTRUCTION

Any impact of damage to the properties can be foreseen and mitigated against by relatively simple design and construction techniques. There are two forms of flood protection works: -

- **Flood-resistance or proofing works-** these try to reduce the amount of water entering a building.
- **Flood-resilient works:** - these reduce the amount of damage caused by water entering the

building.

The proposed dwelling will have the following resilient measures incorporated in the construction in accordance with "Improving the flood performance of new buildings" CLG (2007).

- o Static caravans by virtue of their design have a floor level which is 600mm above the existing ground level, set at 4.35mODN.
- o The static caravans are securely anchored to the ground using an appropriate mechanism such as chains and ground anchors.



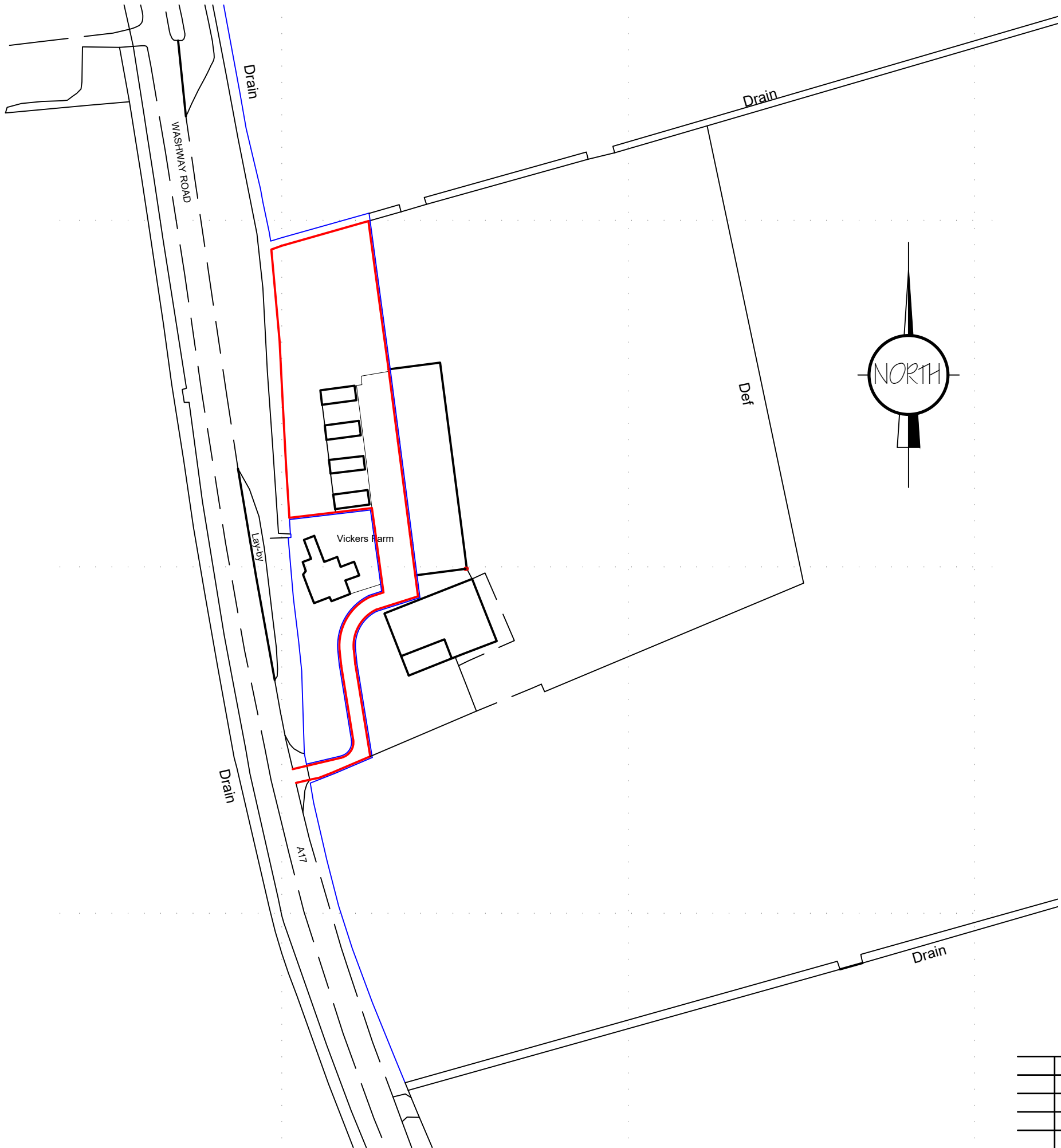
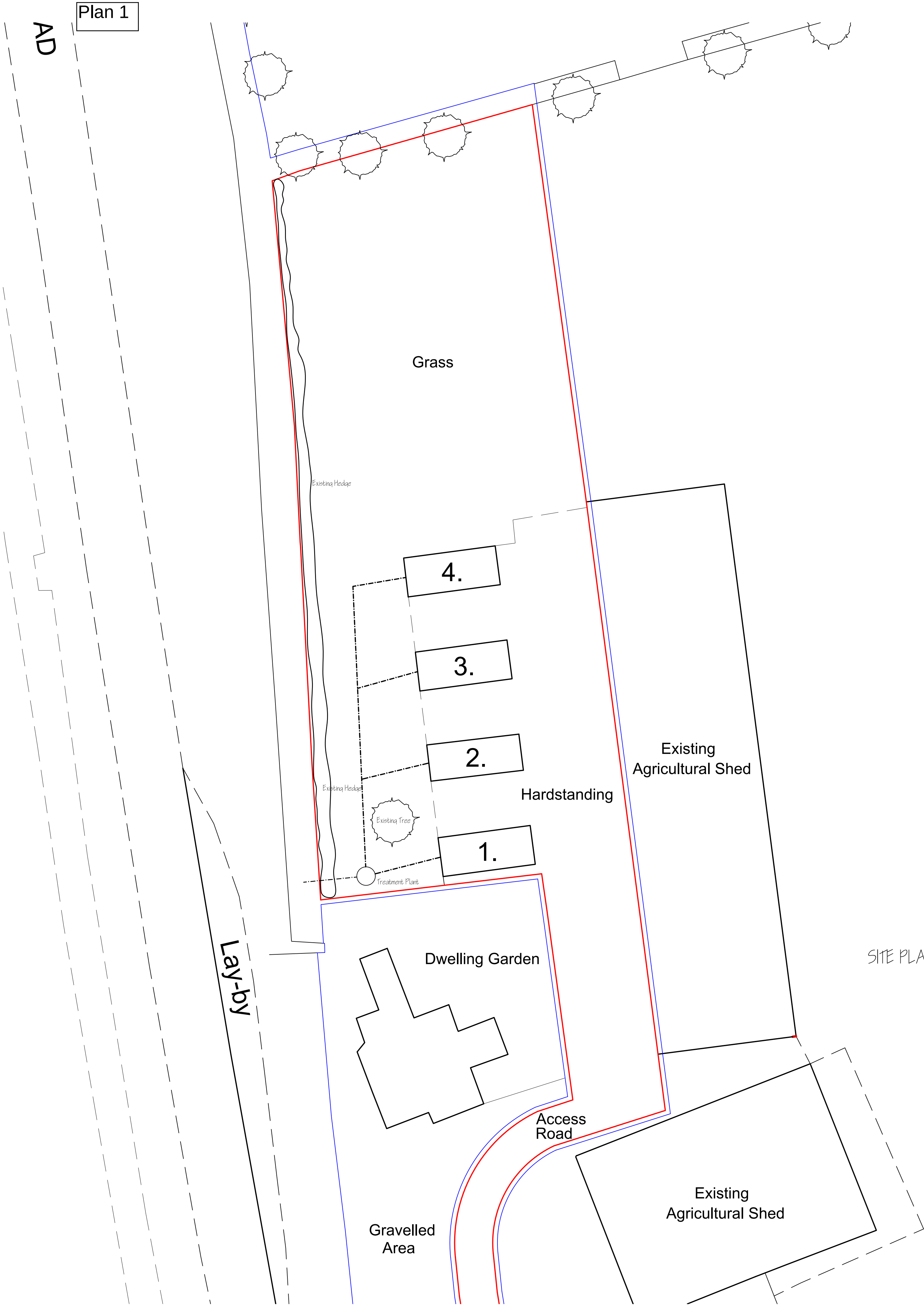
Typical Anchor Chains

- o 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 property 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.
- o A Flood Warning and Evacuation Plan for the Residents will be prepared.

CONCLUSION

- o The site does have the protection of flood defences which are well maintained by the Environment Agency.
- o The site for the site is shown to be within Flood Zone 3 'High Probability' as detailed on the Environment Agency's Flood Zone Maps **without defences**.
- o The Environment Agency Long Term Flood Risk maps show that: the site has a low chance of flooding from rivers or the sea (annual probability between 0.1% and 1.0%); the site is also shown to be at no risk of surface water flooding (annual probability less than 0.1%); the site is also not shown to be within a risk of reservoir flooding for both the wet and dry scenarios.

- o The ground floor level for the living accommodation will be raised 600mm above the existing ground level (3.75mODN) set at 4.35mODN, which is 350mm above the maximum predicted breach flood depth following climate change (2115).
- o The accommodation proposed is for seasonal workers and is not for permanent accommodation the proposal is in addition to existing accommodation for agricultural workers within the associated dwelling to the south. The static caravans shall only be occupied by seasonal workers employed in agricultural operations on land within the control of the applicant.
- o As this planning application is to renew a lapsed planning permission Ref H3-0965-19, the caravans will not be occupied as stated in Condition 4 of the previous application. i.e. only occupied from the 1st of February to 31st of October in any given year
- o Flooding from other sources is unlikely to affect the site.
- o 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.
- o It is therefore concluded that the proposed development can be constructed, safely and sustainably, to meet the requirements of the South Holland District Council Development Plan Policies, and the National Planning Policy Framework.



LOCATION PLAN 1:1250

ref:	revision	date
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Client
NAYLOR FLOWERS LTD

Drawing
SITE & LOCATION PLANS

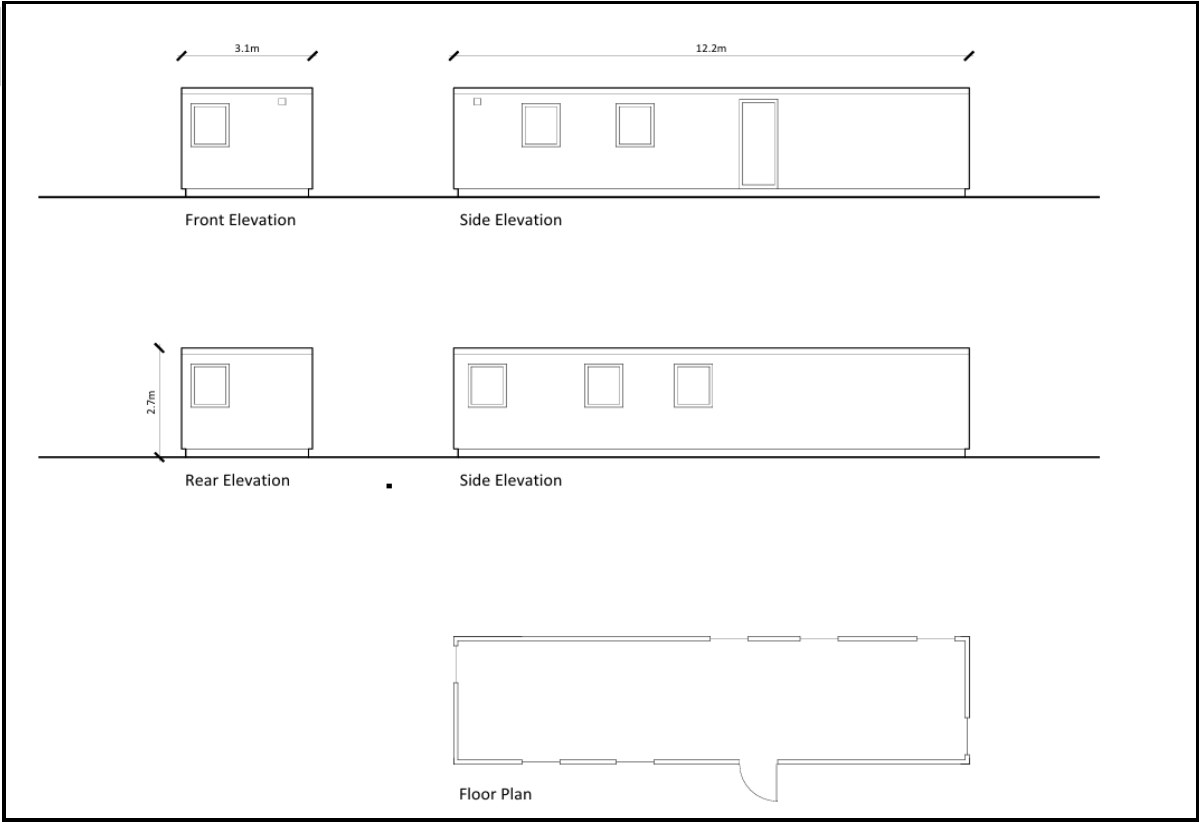
Job Ref. A372-25	Drawing No. 01
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Date FEBRUARY 2025	Drawn S.D
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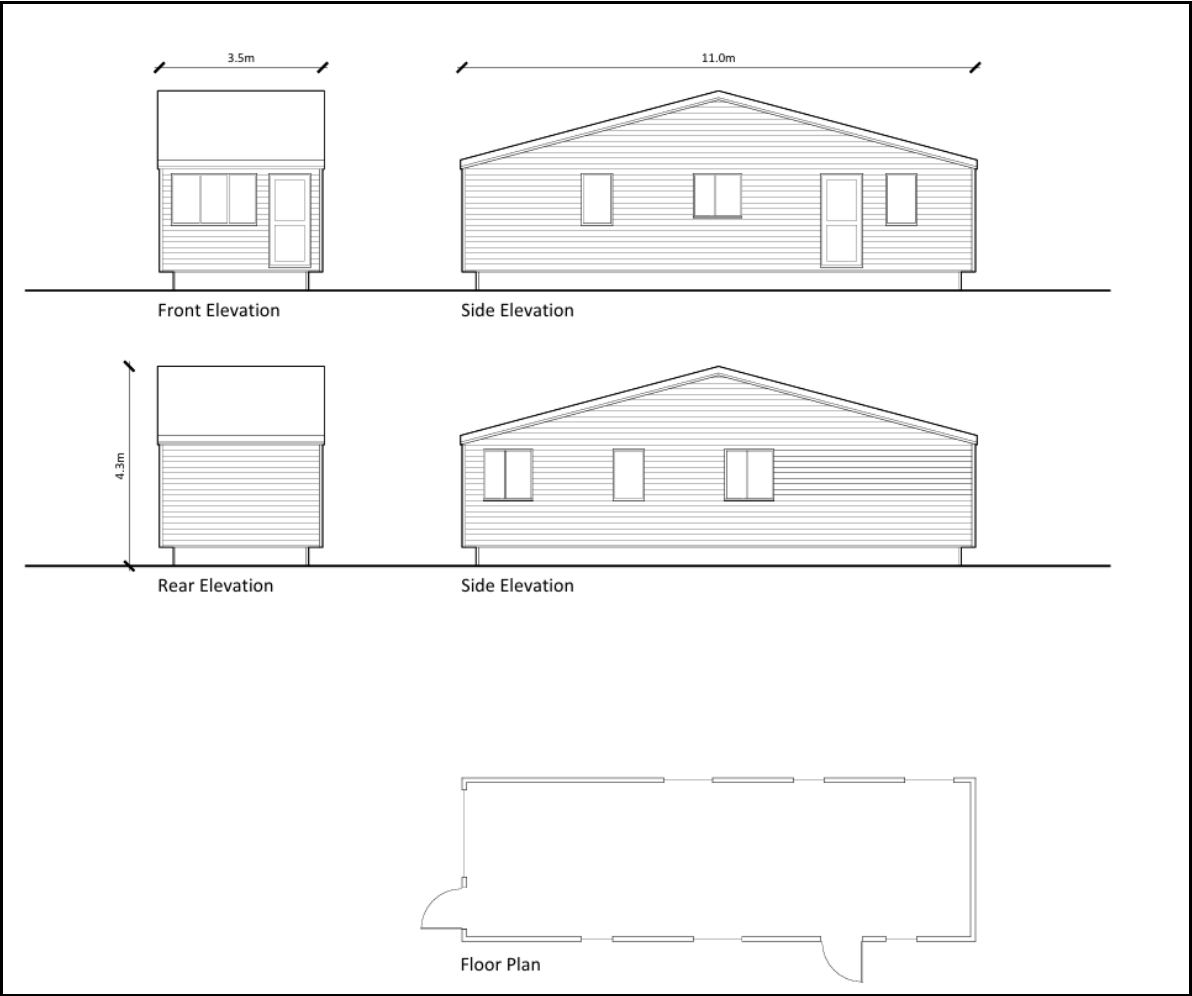
Scales
AS STATED

DO NOT SCALE FROM THIS DRAWING
This drawing is copyright and may not be altered, traced, photographed or used for any other purpose other than that for which it is issued. The General Contractor is to check all dimensions on site and report any discrepancies to G. R. Merchant Ltd. All details shown on this drawing including foundations are based upon typical site conditions related to the area. No responsibility can be accepted for abnormal conditions which may be discovered during construction unless reported to the G. R. Merchant Ltd so that design amendments may be considered. Site not surveys are recommended in respect of foundations to establish specific site conditions before foundation work is undertaken. This drawing is limited in the amount of information contained and does not purport to contain a full specification of the works. It is solely for the purpose of obtaining Planning / Building Regulation approval. This drawing must not be used as a contract document alone. The works will not be supervised or inspected on site by G. R. Merchant Ltd or any representative thereof. It is the client or their appointed contractor's responsibility to control workmanship, substitution of materials, adherence to specification, variations to contract etc. All materials to be new unless otherwise stated and all components and materials etc. to be used fitted and installed etc. in strict accordance with manufacturers instruction and relevant code of practice. Materials shall conform to appropriate British standard specification or BSIA certificate or European code equivalent. The Employer / Client shall ensure that the selected contractor is conversant with and adopts all measures necessary to achieve compliance with Health and Safety legislation for Building sites and Work places. The Employer / Client is advised that should the works need to comply with the Construction Design and Management Regulations an independent Principal Designer will be required. The works shall comprise of all that is shown on the drawing and details. Work that may not specifically be shown but may be reasonably inferred as necessary to carry out the works shall be deemed to be included. It is the plot / land owners responsibility to be aware of the Party Wall etc. Act 1996 when building in close proximity to adjoining neighbours boundaries.

Plan 2



Typical Static Caravan Detail



Typical Lodge Detail

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

Key Node Points

Map 1



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%	2.5%	50%
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

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://deframetadadata.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.

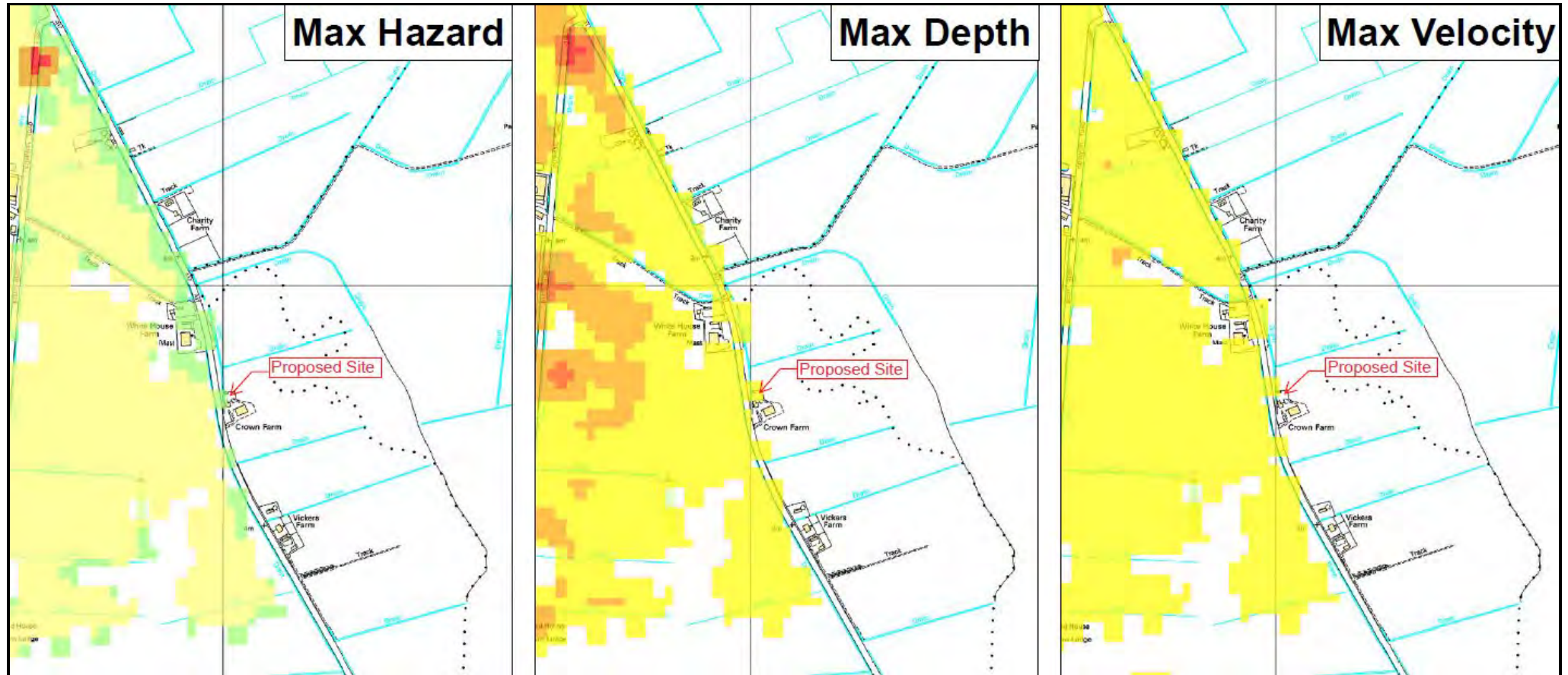
The following notes apply to Grand Sluice

- 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://deframetadadata.com/geonetwork/srv/eng/catalog.search#/metadata/84a5c7c0-d465-11e4-b0bd-f0def148f590>

Map 2

Extract from Environment Agency Tidal Breach Hazard Maps

1 in 1000 Year Event –Present Day

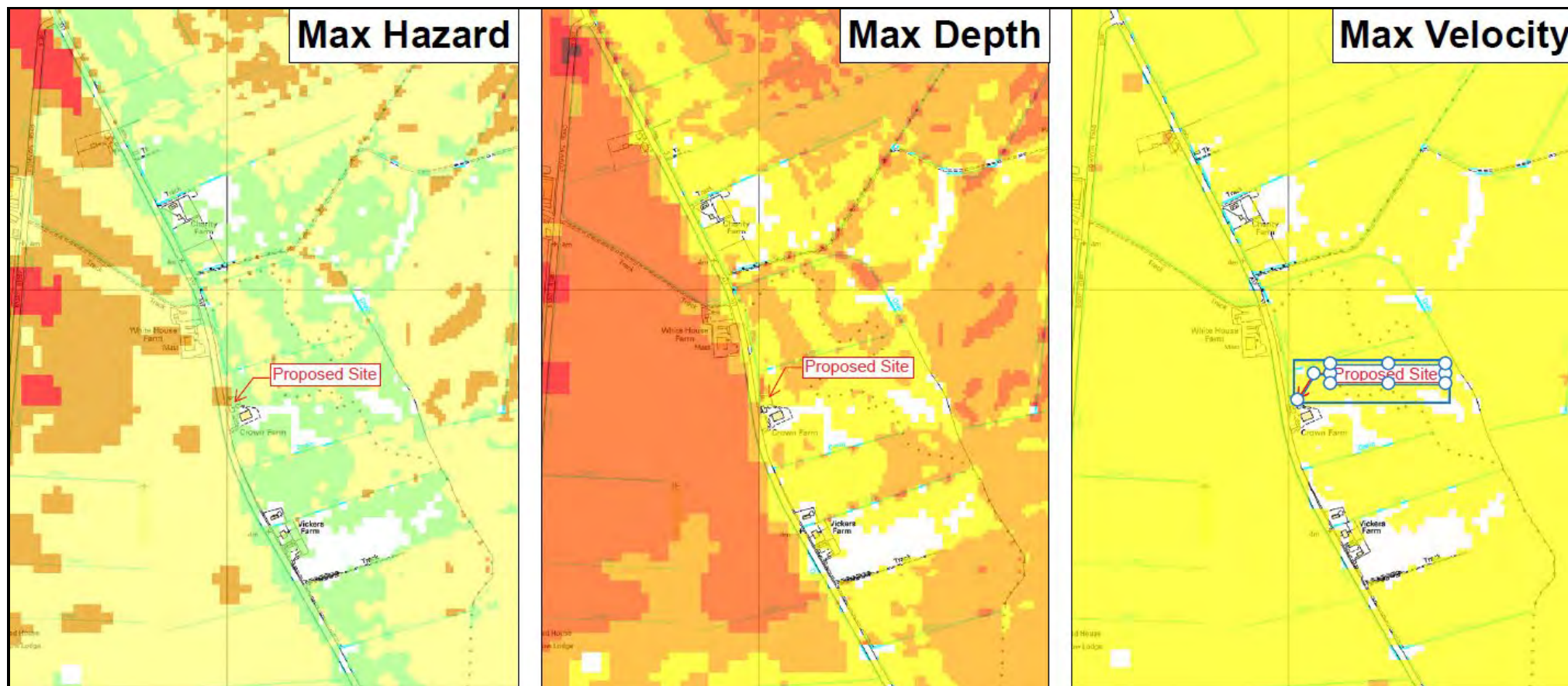


★ Modelled Breach Locations - see also the accompanying plan "Location of Modelled Breaches"		
Max Hazard (Flood Risk to People : FD2320)	Max Depth (m)	Max Velocity (m/s)
Less than 0.75 (Low Hazard)	0 - 0.25	0 - 0.3
Between 0.75 and 1.25 (Danger for Some)	0.25 - 0.50	0.3 - 1.0
Between 1.25 and 2.0 (Danger for Most)	0.50 - 1.0	1.0 - 1.5
Greater than 2.0 (Danger for All)	1.0 - 1.6	1.5 - 2.5
	1.6 +	2.5 +

Map 3

Extract from Environment Agency Tidal Breach Hazard Maps

1 in 1000 Year Event –2115 Climate Change

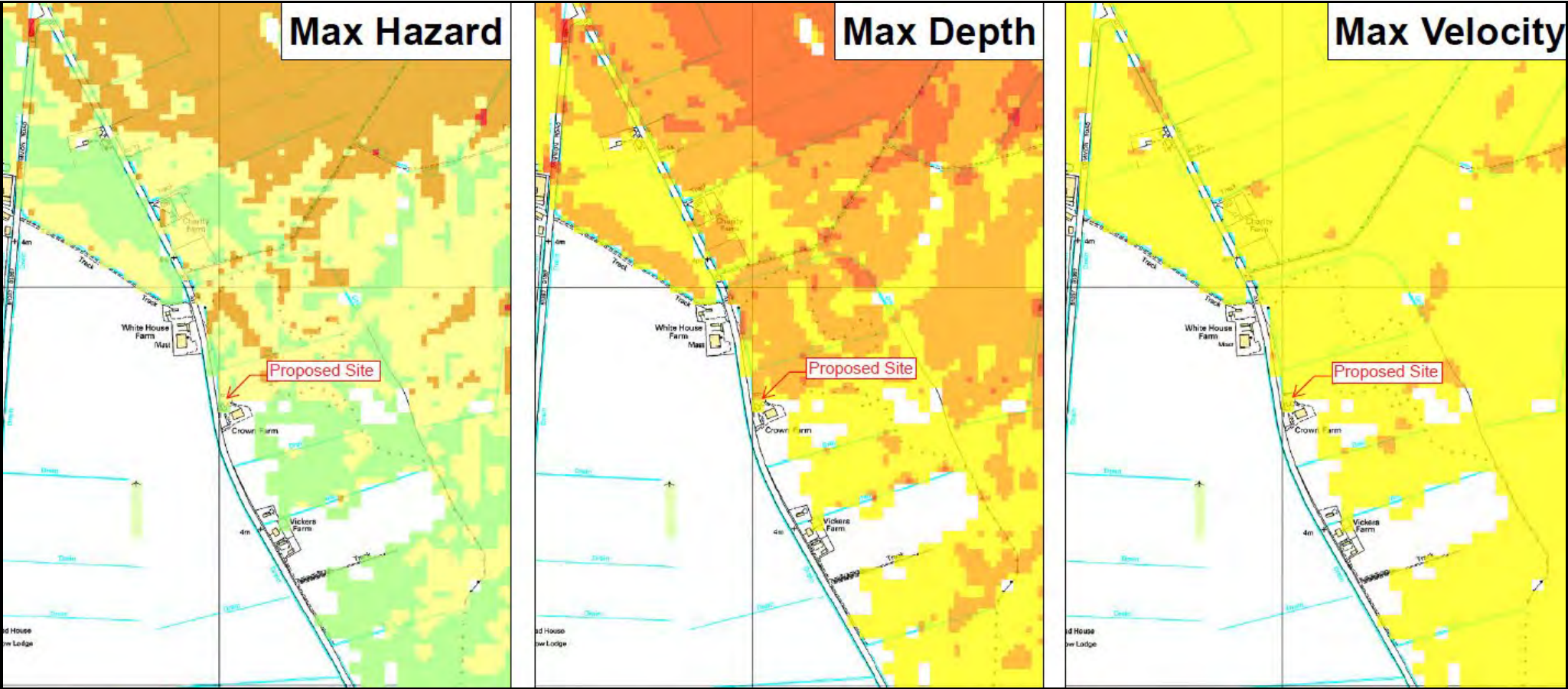


★ Modelled Breach Locations - see also the accompanying plan "Location of Modelled Breaches"		
Max Hazard (Flood Risk to People : FD2320)	Max Depth (m)	Max Velocity (m/s)
Less than 0.75 (Low Hazard)	0 - 0.25	0 - 0.3
Between 0.75 and 1.25 (Danger for Some)	0.25 - 0.50	0.3 - 1.0
Between 1.25 and 2.0 (Danger for Most)	0.50 - 1.0	1.0 - 1.5
Greater than 2.0 (Danger for All)	1.0 - 1.6	1.5 - 2.5
	1.6 +	2.5 +

Map 4

Extract from Environment Agency Tidal Overtopping Hazard Maps

1 in 1000 Year Event –2115 Climate Change



★ Modelled Breach Locations - see also the accompanying plan "Location of Modelled Breaches"		
Max Hazard (Flood Risk to People : FD2320)	Max Depth (m)	Max Velocity (m/s)
Less than 0.75 (Low Hazard)	0 - 0.25	0 - 0.3
Between 0.75 and 1.25 (Danger for Some)	0.25 - 0.50	0.3 - 1.0
Between 1.25 and 2.0 (Danger for Most)	0.50 - 1.0	1.0 - 1.5
Greater than 2.0 (Danger for All)	1.0 - 1.6	1.5 - 2.5
	1.6 +	2.5 +