

# FLOOD RISK ASSESSMENT

Proposed Development at  
Land r/o Tree Tops, Marsh Lane,  
North Somercotes,  
Lincolnshire



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## LOCATION

The proposal, to which this statement form's part, is for outline permission to erect three detached dormer bungalow's and detached garage's with associated access.

This Application is supported by the following plans that should be read in conjunction with this report:

- Site Location Plan                   RD:4927 - 01
- Existing Site Survey                RD:4927 - 02
- Proposed Site Plan                 RD:4927 - 03



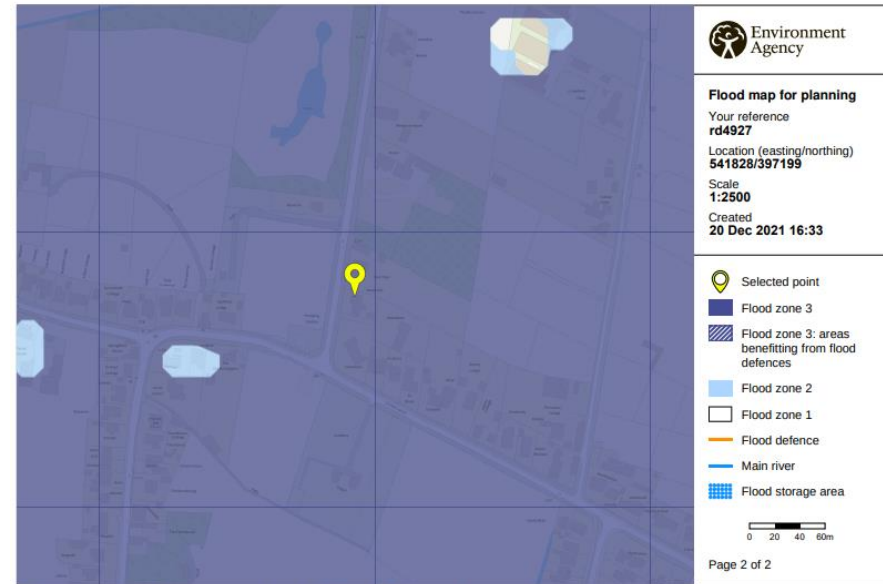
- The site and surrounding area

## FLOOD ZONE

The Environment Agency Flood Basic Flood Map shows that it is in an area designated as Flood Zone 3 (see opposite).

## SITE LEVELS

The site is generally level and the average ground level around the site is approx. 3.5m above ordnance datum.

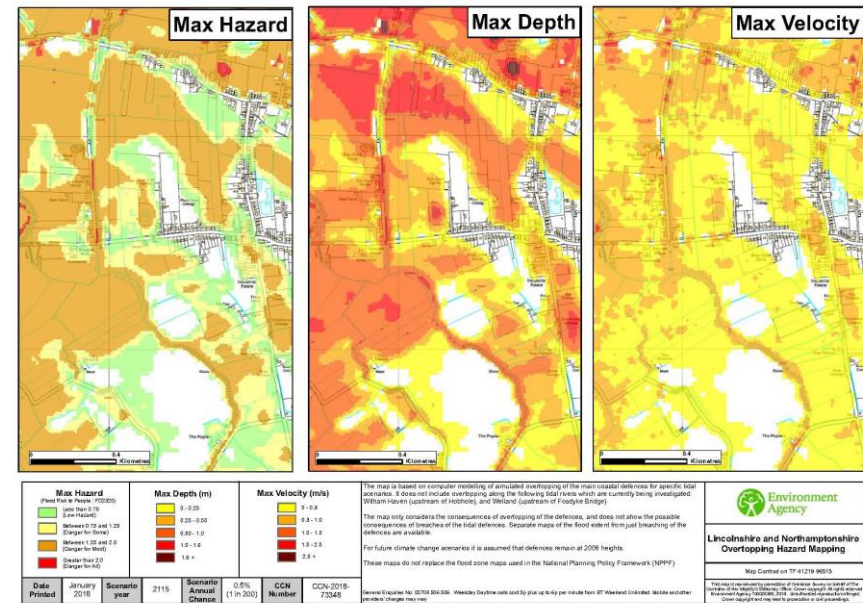


- Extract from the Environment Agency Hazard Map

We obtained further mapping from the EA, As the site has refuge provided at first floor the map to use is 0.5% 1:200 2115 and this indicates the development falling in the Orange Zone, between 1.25 and 2.0, (danger for most) and 0.5 - 1.0 max depth. Information taken from the EA. Upon speaking further with the EA the site is believed to be in the Max Depth Zone of 1.0 - 1.6m.

Therefore, the traditional FFL of 150 / 200mm above current ground levels should be raised to 1000mm for all plots with resilient construction to a height of 300mm above the predicted flood depth.

The surface water will be discharged into soakaways, subject to ground conditions.



- EA Hazard Mapping



- EA Hazard Mapping

## EXISTING FLOOD DEFENSES

The main source of potential flooding affecting the site comes from the overtopping of the tidal sea defences.

We are advised by the Environment Agency that the sea defences along the section of coastline are designed to cater for a 1 in 200-year tidal event.

## FLOODING HISTORY

It is understood that the site has not been affected by flooding in recent years or during the flooding in 1953.

The flooding which occurred along the Lincolnshire coast in January 1953 was caused by a storm surge in the North Sea. The scale of the storm surge was the result of a combination of factors. Although the low-pressure system which generated it was neither particularly deep nor associated with a particularly high tide, the problems were caused by the track of the storm and by a change in wind direction. The storm was also slow to develop and lasted a long period of time. In Lincolnshire breaks in the sea defences resulted in flooding of land and homes, drowning 41 people. Although the storm was not excessively strong and its track unusual, the substantial loss of life

was probably higher than it might otherwise have been, because so many people were drowned without warning; no warnings were sent out in eastern England. Since then, defences have been strengthened and methods for warning and evacuation have been put in place. Therefore, it is considered unlikely that such devastation and loss of life will reoccur.

In fact this assumption was proved correct on the 6th December 2013 when the east coast was subject to what has been described by many as the worst tidal surge since 1953. The tidal surge did not pose as much of a risk as first thought in a lot of areas and the site was ultimately at very little risk of flooding. This recent event shows that whilst flooding is an ever-present risk along the Lincolnshire coast the defences and warning measures go a considerable way to reducing the likelihood of a flood to the site.

## SEQUENTIAL TEST

The NPPF identifies 4 flood risk zones and sets out what type of development is appropriate in each zone according to vulnerability classification. In turn this relates to different land uses and indicates where based on those classifications. The exceptions test will be applied.

There are no alternative reasonably available sites at a lower flood risk than the subject site, the conclusion is the site and proposed development have passed the Sequential Test.

Flood risk vulnerability classification (see table 2 of the guidance)	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	√	√	√	√	√
Zone 2	√	Exception Test required	√	√	√
Zone 3a	Exception Test required †	X	Exception Test required	√	√
Zone 3b functional floodplain	Exception Test required*	X	X	X	√*

Key: √ Development is appropriate. X Development should not be permitted.

The proposed application site is not allocated in the East Lindsey Local Plan.

We understand the council has excluded sites in flood zones 2 & 3 from its local plan allocations.



## FLOOD RESILIENCE MEASURES

The site is within the flood zone 3, the proposal is intended to be of all two-storey construction with all sleeping accommodation at first floor. The first floor is intended as a refuge in the event of flooding. As part of a Building Regulations Application, the first floor bedroom windows and/or roof windows will be of the escape type (primary for escape in case of fire) and would form part of the proposed escape route and evacuation procedures.

It is proposed that the detailed design and construction works should incorporate resilient measures contained in BRE Publication: Design Guidance on Flood Damage to Buildings (1996). This would include the following: -

- Ground floors in either oversite concrete or suspended precast concrete (depending on site conditions).
- Masonry construction to all ground floor walls with internal plaster finish.
- Insulation materials on both floor and walls to be impervious foam types.
- uPVC windows and doors with sealed double glazed units.

- Electrical fittings, wiring and consumer units at ground floor will be fixed above any potential flood level (as per Building Regulations Approved Documents).
- Heating system and later installation to be wall mounted above the potential flood level. Associated pipe work will be by their native, resistant to any potential flooding.

It is intended that all occupants will be provided with information regarding the Environment Agency's Automated Flood Warning System. This will be in the form of the agency's information leaflet, which will be provided as part of the buildings handover documentation.

It will be recommended that the client subscribes to the Environment Agency's "Warning Direct" flood warning messaging service. This will provide a phone call / text message to warn the occupiers.

The new on site drainage will be connected into a soakaway on site.

The principal floor level of the new development should be 1000mm above current ground level with flood resilient measures 300mm above the predicted flood depth.

The building will be constructed to the guidance in the DCLG publication 'Improving the Flood Performance of New Buildings' May 2007 as far as practical within the constraints of the existing building fabric. This document recommends a water ingress strategy because of the predicted flooding height.

## CONCLUSION

The site is approximately 0.24 hectares in area.

The proposed development is located in Zone 3 and is at risk of flooding.

The site is not affected by overtopping for the 0.5% (1 in 200) and 0.1% (1 in 1000) chance events.

The British Geological Society website shows that the subsoil's are likely to have high clay content that will be unsuitable for soakaways or infiltration techniques. It is recommended that soakage testing to BRE365 is carried out to determine the potential use of infiltration techniques.

Should flooding occur, a two hour warning is generally given to allow the owner to evacuate.

The site is within a sustainable location, there are no alternative sites available within the village.

It is considered that the suggested Flood Risk Assessment is proportionate to the scale, nature and location of development to demonstrate that the site and surroundings will not be subjected to the risk of Flooding.