

FLOOD RISK ASSESSMENT

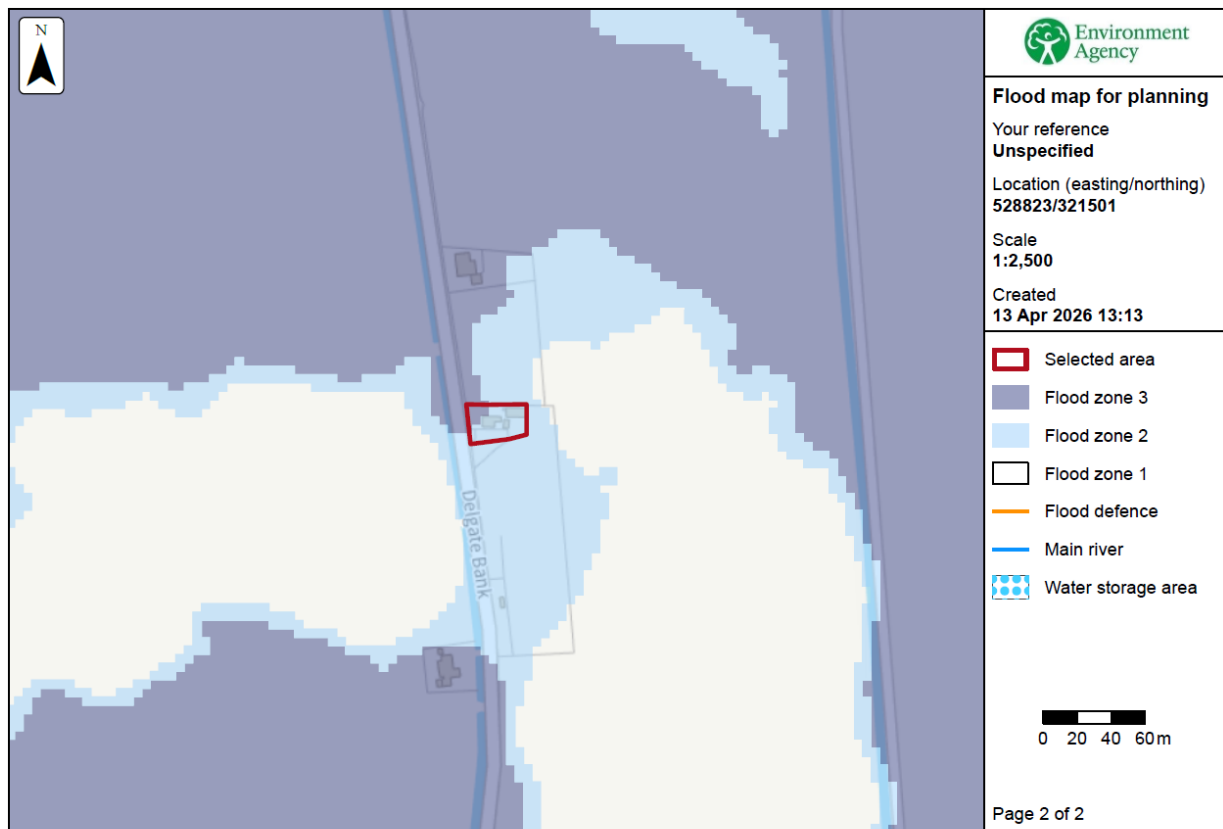


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Job No. 123
Client: Earl Farming (Miss A Earl)
Date: April 2026
Location: Magpie Cottage, Delgate Bank, Weston Hills, PE12 6DN
Reference/Description: Self-build replacement dwelling.

The Environment Agency mapping indicates the site is mainly within Flood Zone 2 and partly within Flood Zone 3. The extract below is from gov.uk flood maps for planning.



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The flood risk context.

This Flood Risk Assessment supports a planning application for the demolition of an existing dwelling and construction of a replacement dwelling on the same plot. The Environment Agency Flood Map for Planning identifies the front portion of the site within Flood Zone 3a (High Probability) and the remainder of the site within Flood Zone 2 (Medium Probability). The site is within a defended area as specified on the South Holland District Council's Strategic Flood Risk Assessment (SHDC SFRA) map and is located in the South Holland Internal Drainage Board District (IDB).

Key conclusions:

- The proposal constitutes 'More Vulnerable' development under the NPPF technical guidance.
- As a replacement dwelling, the development does not increase the number of people at risk.
- The proposed dwelling can be positioned and designed so that habitable areas are located within the Flood Zone 2 portion, reducing exposure to risk.
- Flood-resilient construction, raised floor levels, and a flood evacuation plan ensure the development will be safe for its lifetime.
- The proposal will not increase flood risk elsewhere.
- As a replacement dwelling, the proposal does not introduce a new vulnerable use.

The local drainage network, managed by the South Holland IDB, is extensive. Watercourses drain the surrounding land toward the tidal River Welland. The IDB aims to maintain a general standard of flood protection for its district through the upkeep of pumping stations, associated structures, and channel systems, supported by a routine maintenance program. The current maintenance standards of both the South Holland IDB and the Environment Agency are commendably high.

The risk of flooding due to blockages in the South Holland IDB drainage system is low, given the IDB's effective maintenance standards. However, a failure of a sluice could elevate the risk in the catchment. Through its operational and maintenance activities, the Board strives to provide flood protection to agricultural lands and developed areas for events occurring once in 20 years and once in 100 years, respectively. The South Holland IDB main drains include a freeboard that lowers the risk during exceedance events by providing additional storage capacity.

The site benefits from flood defences, with tidal defences and embankments along the Wash and River Welland offering protection. Meaning the residual flood hazard is low, with no flooding predicted in 1% fluvial or 0.5% tidal events in 2115. Second-line defences and various informal banks reduce the flood risk further.

The probability of flooding from any Environment Agency system remains below 0.5% annually due to the robust existing flood defences. Flood depths and hazard ratings are minimal, with no rapid inundation zones. Climate change allowances for sea level rise and fluvial flows have been incorporated, increasing predicted flood levels by about 100mm in 2115. The maximum tide level in 2115 is predicted at 7.12m OD, with a minimum defence crest level of 7.80-7.90m OD, providing sufficient freeboard.

Sequential and Exception Tests

Sequential Test

For “More Vulnerable” development the sequential and the exception tests are usually applied. However, replacement dwellings are typically exempt because the use already exists and cannot reasonably be relocated.

There is no predicted risk of flooding in a 1 in 200 year tidal or 1 in 100 year fluvial event in 2115, this site ranks as high as other sites in the Weston Hills area with regard to flood risk.

Exception Test

Required for “More Vulnerable” development in Flood Zone 3a. The proposal passes because:

- It provides sustainability benefits, including improved energy efficiency and resilience.
- The site ranks as high as other local sites regarding flood risk.
- Mitigation measures proposed, such as raising floor level 300mm above adjacent levels, will aid in the proposal being safe for its lifetime and will not increase flood risk elsewhere.

Flood Defences and Existing Infrastructure

Existing flood defences and drainage systems significantly reduce flood risk.

- The River Welland east bank provides 200-year protection with freeboards of 730mm in 2115. Flood levels in 2115 predicted at 7.12m OD for extreme tidal events whilst defences are higher at 7.80-7.90m OD.
- Coronation Channel defenses have a freeboard of 600mm, with no flooding predicted in a 1 in 100-year event.
- Barrier Bank and Wash banks are at least 2.2 km from the site, with predicted maximum flood levels well below defense levels.
- South Holland IDB maintains drainage channels, sluices, and pumping stations, with a 1 in 100-year standard and freeboard of 300mm.
- The risk from IDB drainage failure is extremely low due to high maintenance and telemetry systems.
- The development is not in a functional flood plain, and flood risk is considered very low with proper mitigation.
- Climate change allowances increase flood level predictions by approximately 100mm in 2115.

Surface Water and Local Flooding Risks

Surface water flooding risk is low, with maps indicating no predicted flooding at the site.

- Discharge of roof water into soakaways and raising ground floor levels by 300mm mitigate local surface water flood risks.
- No evidence of past flooding at the site or neighbouring properties.
- The probability of flooding from main rivers and local drainage is very low, with slow floodwater rise allowing precautionary measures.

Mitigation of flooding effect & conclusions.

Mitigation measures and planning considerations support safe development in flood-prone areas.

Mitigation proposals to include;

- Raising ground floor levels by 300mm above adjacent ground level.
- Use permeable paving and soakaways for surface water management.
- The dwelling will be constructed from low permeability materials in a modern way that will provide improved resilience over that of the existing dwelling.
- Property owner to register with Floodline for advice, evacuation plans and warnings.
- The use of non-return valves in new foul sewers will be recommended to the applicant.
- The replacement dwelling is to be designed such that the habitable areas are located within the Flood Zone 2 portion, reducing exposure to risk.
- Two-storey construction with all bedroom accommodation at first floor level.

The proposal does not increase risk to life as a dwelling already occupies the site.

The proposal will not effect existing land levels across the remaining site area. The siting and nature of the proposal would not increase the potential for surface water to drain onto the highway nor give rise to detrimental surface water flooding elsewhere onto neighbouring properties.

Situated within an Internal Drainage Board catchment, the site benefits from maintained pumping stations and channel systems aimed at providing flood protection for agricultural land and developed areas, against events once in 20 years and once in 100 years, respectively.

The site is not at risk during a breach of the tidal defences during the 0.1% annual probability (1 in 100 chance each year) event in 2115.

If defences were breached, the proposal would not cause or heighten risk to health or life.