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Flood Risk Assessment
4797_FY5_THORNTON-
CLEVELEYS_01

Site Address: 43 Sandwell Avenue
THORNTON-CLEVELEYS
FY5 4FN

UK Experts in Flood Modelling, Flood Risk
Assessments, and Surface Water Drainage Strategies

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Site Location: 43 Sandwell Avenue, Thornton-Cleveleys, FY5 4FN

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Summary

Development Description	Existing	Proposed
Development Type	A residential dwelling	Change of use to a children's home for a maximum of two children, with up to three staff, two of whom will sleep overnight, working on a rota basis (C2).
EA Vulnerability Classification	More Vulnerable	More Vulnerable
Ground Level	Ground levels on site vary between approximately 5.31m AOD to 5.75m AOD based on EA 1m LiDAR.	No change
Level of Sleeping Accommodation	First floor level and above	First floor level and above
Impermeable Surface Area	No change	No increase in built footprint is proposed, the development is a change of use only.
Surface Water Drainage	N/A ¹	No increase in built footprint is proposed, the development is a change of use only. Runoff to be managed via existing system.
Site Size	Approximately 285m ²	No change
Risk to Development	Summary	Comment
EA Flood Zone	Flood Zone 3	Tidal
Flood Source	Tidal	River Wyre
SFRA Available	Level 1 Strategic Flood Risk Assessment (Wyre Council, 2016)	
Management Measures	Summary	Comment
Ground floor level above extreme flood levels	Existing residential dwelling (C3) including bedrooms at first floor level and above.	Change of use from C3 to C2. No bedrooms proposed at ground level.

Safe Access/Egress Route	N/A ²	Sign up to the EA flood warning service
Site Drainage Plan	No	No increase in built footprint is proposed, the development is a change of use only. Runoff to be managed via existing system.
Flood Warning and Evacuation Plan	Yes	Recommended to sign up to the Wyre estuary at Thornton, between A585, Stanah Road and School Road The Environment Agency flood warning service.
Offsite Impacts	Summary	Comment
Displacement of floodwater	None	No increase in built footprint is proposed, the development is a change of use only.
Increase in surface run-off generation	None	No increase in built footprint is proposed, the development is a change of use only. Runoff to be managed via existing system.
Impact on hydraulic performance of channels	None	Nearest mapped watercourse circa 250m from site

¹ not required for this assessment

² data not available.

1. Introduction

- 1.1. Aegaea were commissioned by Safety and Focused Care to undertake a Flood Risk Assessment (FRA) to facilitate a planning application for the proposed development. This FRA has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance.
- 1.2. This FRA is intended to support a full planning application and as such the level of detail included is commensurate and subject to the nature of the proposals.

Site Overview

- 1.3. The site of the proposed development is 43 Sandwell Avenue, Thornton-Cleveleys, FY5 4FN (Figure 1).



Figure 1: Site Location (Base map and data from Base map and data from Bing Maps)

- 1.4. The existing site is a residential dwelling. The proposed development is for change of use to a children's home for a maximum of two children, with up to three staff, two of whom will sleep overnight, working on a rota basis (C2). All bedrooms will be at first floor and above.
- 1.5. In the absence of a topographical survey, Environment Agency Light Detection and Ranging (LiDAR) data Digital Terrain Model has been used to review the topography of the site. The topographic levels across the site vary between approximately 5.31m Above Ordnance Datum (AOD) to 5.75m AOD. Topographic levels slope from the road to the rear garden.

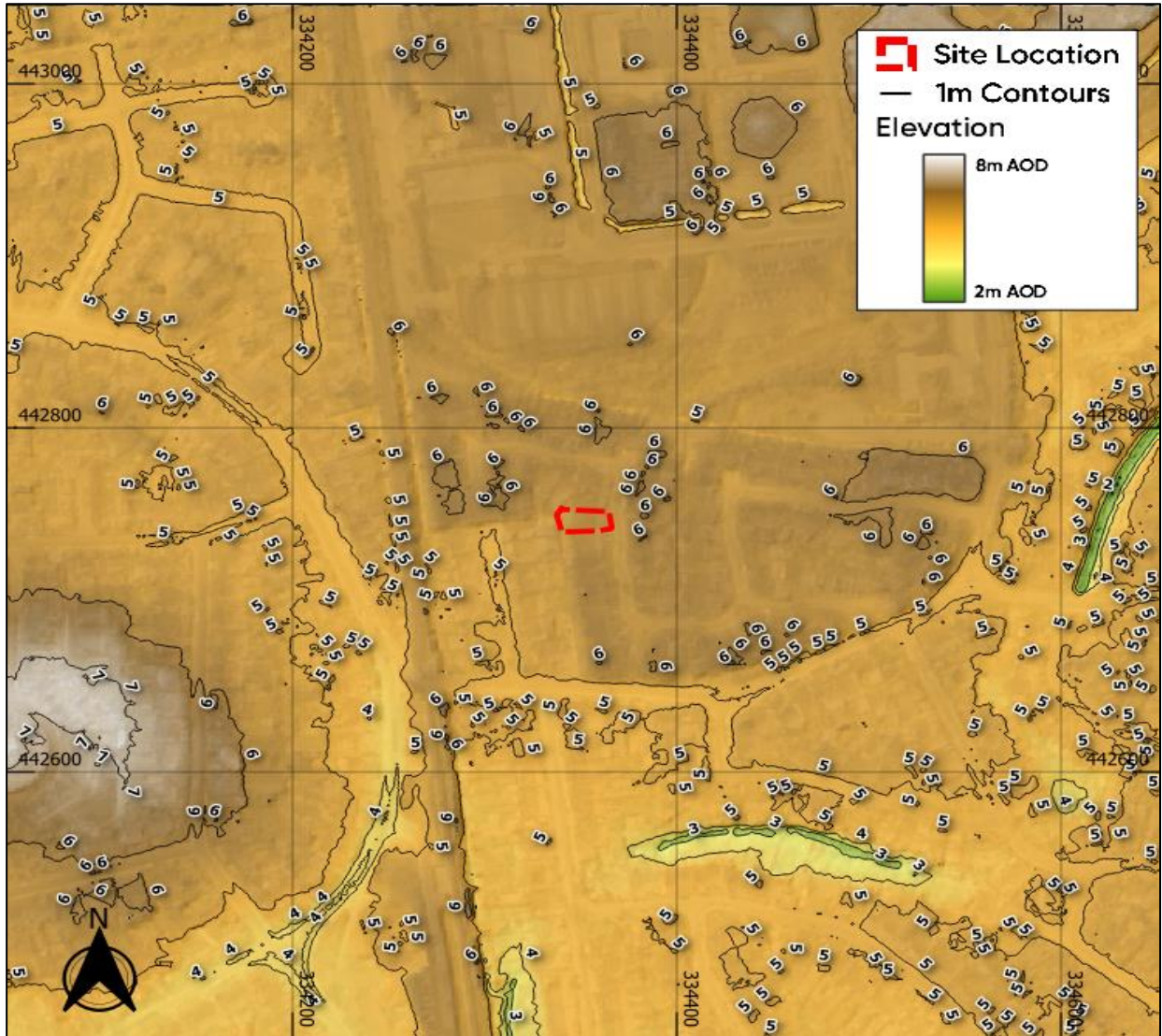


Figure 2: Site Topography (Base map and data Base map and data from Bing Maps. Contains public sector information licensed under the Open Government Licence v3.0)

1.6. Wyre Council is the Local Planning Authority (LPA) for the site and Lancashire County Council is the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's Cumbria and Lancashire region.

Planning Policy and Guidance

1.7. UK government planning guidance states¹ that an FRA is required for developments which are:

- *in flood zone 2 or 3 including minor development and change of use*
- *more than 1 hectare (ha) in flood zone 1*
- *less than 1 ha in flood zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains, reservoirs)*
- *in an area within flood zone 1 which has critical drainage problems as notified by the Environment Agency*

1.8. The site is in Flood Zone 3 and thus an FRA is required.

1.9. The objective of this FRA is to demonstrate that the proposals are acceptable in terms of flood risk. This report summarises the findings of the study and specifically addresses the following issues in the context of the current legislative regime:

- Fluvial/ tidal flood risk
- Surface water flood risk
- Risk of flooding from other sources

¹<https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications#when-you-need-an-assessment>

2. Planning Policy

2.1. Inappropriate development in a flood risk area could pose significant risk in terms of personal safety and damage to property for the occupiers of the development or for people elsewhere. The approach taken in the assessment of flood risk at the planning stage is set out in national, regional, and local planning policy and associated guidance. This section summarises the key policies and guidance relevant to the proposed development.

National Planning Policy Framework (NPPF)

2.2. The National Planning Policy Framework² (NPPF) (DLUHC, 2023) which includes UK Government policy on development and flood risk states:

165. Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.

173. When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;*
- b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;*
- c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*

²<https://www.gov.uk/guidance/national-planning-policy-framework>, last updated Dec 2023

- d) *any residual risk can be safely managed; and*
- e) *safe access and escape routes are included where appropriate, as part of an agreed emergency plan.*

*174. Applications for some minor development and **changes of use** should not be subject to the sequential or exception tests but should still meet the requirements for site-specific flood risk assessments set out in footnote 59.*

2.3. Footnote 59 of the NPPF states:

A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

2.4. Flood Zones in England are defined as follows:

Table 1: Flood Zone Definitions

Flood Zone	Definition
Zone 1 Low Probability	Land having less than 1 in 1,000 annual probability of river or sea flooding (all land outside Zones 2 and 3).
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
Zone 3b The Functional Floodplain	<p>This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise:</p> <p>land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or</p> <p>land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding).</p> <p>Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)</p>

2.5. An FRA should be appropriate to the scale, nature, and location of the development. It should identify and assess the risk from all sources of flooding to and from the development and demonstrate how any flood risks will be managed over the lifetime of the development.

Local Plan

2.6. The Local Plan prepared by the Local Planning Authority, Wyre Council, sets out the policies for development in the local area.

2.7. Policy CDMP2.1 Flood Risk and Surface Water Management: Flood Risk outlines the requirements for new development within the area. It states:

Flooding

1. Development is required to have regard to the most up-to-date Wyre Strategic Flood Risk Assessment Level 2 including the SFRA Level 2 Flood Risk Sequential Test Paper and comply with the most up to date version of any relevant plans and strategies including:

- a) Surface Water Management Plan;*
- b) Local Drainage Strategies;*
- c) Land Drainage Strategy;*
- d) Catchment Flood Management Plans;*
- e) Shoreline Management Plan;*
- f) Coastal Defence Strategy;*
- g) Emergency Flood Plans.*

2. Development will be required to demonstrate that:

- a) It will not be at an unacceptable risk of flooding; and*
- b) It would not lead to an increased risk of flooding elsewhere; and*
- c) It would not adversely affect the integrity of tidal and fluvial defences or access for essential maintenance and emergency purposes.*

3. Where development is proposed in areas at risk of flooding, unless specifically proposed in this Local Plan, it must be demonstrated that the Sequential Test has been applied and there are no reasonable available alternative sites at lower risk, considering the nature of flooding and the vulnerability of the development.

4. Subject to passing the Sequential and, where required, the Exception Test as set out in national policy and guidance, development will only be permitted in flood risk areas where appropriate mitigation and/or adaption measures are proposed to reduce the likelihood and / or impact of flooding

2.8. Policy CDMP2 Flood Risk and Surface Water Management: SuDS outlines the requirements for new development within the area. It states:

Surface Water Management

5. Major category development will be expected to include proposals for, and implement Sustainable Drainage Systems (SuDS) utilising lower lying land within the site, existing natural water features and other above ground measures for the management of surface water at source, unless demonstrated to be inappropriate.

6. Where possible all development will need to achieve greenfield runoff rates and will need to comply with the options below in accordance with the hierarchy order set below, for the management of surface water:

- a) Rainwater harvesting for later use;*
- b) Continue and/or mimic the site's current natural discharge process;*
- c) Discharge into infiltration systems located in porous sub soils;*
- d) Reduce flows to a minimum by green engineering solutions such as ponds; swales or other open water features for gradual release to a watercourse and/or porous sub soils;*
- e) Attenuate by storing in tanks or sealed systems for gradual release to a watercourse;*
- f) Direct discharge to a watercourse;*
- g) Direct discharge to a surface water sewer;*
- h) Direct discharge to highway drainage systems subject to an agreement with the Local Highway Authority; and*
- i) Only as a last resort after all other options have been discounted, including evidence of an assessment, controlled discharge into the combined sewerage network where United Utilities have indicated acceptance.*

Development will be required to minimise the rate of discharge to the public sewerage system as much as possible. On previously developed land, a reduction of at least 30% will be sought, rising to a minimum of 50% in Critical Drainage Areas.

Developments will be expected to drain on a separate sewerage system, with only foul drainage connected into the foul sewerage network.

7. Developments will need to consider and implement measures either wholly or in part, including in combination, higher up in the priority list and demonstrate why measures higher up in the priority list are not practical wholly or in part including in combination, before considering measures lower down the priority list.

Sequential and Exception Tests

2.9. The Sequential and Exception Tests are applied in specific cases defined by UK Government policy. Their purpose is to drive development to areas of low flood risk and to support developments which improve flood risk for developments in areas at risk of flooding.

Sequential Test

2.10. In accordance with the National Planning Policy Framework (NPPF), 2023, paragraph 174 the Sequential Test and Exception Test should not be required.

174. Applications for some minor development and changes of use⁶⁰ should not be subject to the sequential or exception tests but should still meet the requirements for site-specific flood risk assessments set out in footnote⁵⁹.

⁵⁹ A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

Summary

2.11. This flood risk assessment has been prepared with due consideration to the above local and national policy.

3. Consultation and Review

Consultation

3.1. The site is within the remit of Lancashire County Council as Lead Local Flood Authority (LLFA).

Documents and Online Mapping

3.2. Local Governments and Lead Local Flood Authorities provide documents which contain data and policies on flood risk and new development in their areas. These documents are introduced and briefly summarised below. For the purposes of this FRA, these documents have been reviewed for relevant information and any relevant data is discussed within the appropriate sub heading of this report.

3.3. The following sources of information have been reviewed for this assessment:

- Flood Map for Planning on the Environment Agency website <https://flood-map-for-planning.service.gov.uk/>
- Long Term Flood Risk Information on the Environment Agency website <https://www.gov.uk/check-long-term-flood-risk>
- National Planning Policy Framework (NPPF) (Department for Levelling Up, Housing and Communities, 2023)
- Planning Practice Guidance - Flood Risk and Coastal Change (Department for Levelling Up, Housing and Communities, 2022)
- Geoindex Onshore (British Geological Survey, 2023)
- Wyre Local Plan (2011-2031) (Wyre Council, 2019)
- Lancashire Area Preliminary Flood Assessment (Blackpool, Blackburn, and Lancashire Authorities, 2011)
- Level 1 Strategic Flood Risk Assessment (Wyre Council, 2016)
- Local Flood Risk Management Strategy for Lancashire 2021-2027 (Blackpool, Blackburn, and Lancashire Authorities, 2021)

Preliminary Flood Risk Assessment (PFRA)

- 3.4. The PFRA, published in 2011, is a high-level appraisal of flood risk across Lead Local Flood Authority Lancashire County Council. The flood risk from all sources, including fluvial, surface water, groundwater, and surcharged sewers is evaluated. It is the basis upon which the Local Flood Risk Management Strategy is produced.
- 3.5. The PFRA summarises historical flood incidents in Lancashire County Council. The site is not recorded as having been affected by any flood event.

Strategic Flood Risk Assessment (SFRA)

- 3.6. The SFRA, published in 2016, provides the evidence base for the Local Planning Authority Wyre Council Local Plan and guidance for consideration when determining planning applications. The SFRA seeks to place new development into areas of lower flood risk taking into account current flood risk, future flood risk, and the effect a proposed development would have on the risk of flooding.
- 3.7. The SFRA mapping provided by Wyre Council has been used throughout production of this report as a source of information, particularly pertaining to historical flood incidents.

Local Flood Risk Management Strategy (LFRMS)

- 3.8. The Local Flood Risk Management Strategy sets out roles and responsibilities for flood risk management, assesses the risk of flooding in the area, where funding can be found to manage flood risk, and the policies, objectives, and actions of the Lead Local Flood Authority.
- 3.9. The Lancashire County Council LFRMS is used within this report to identify any flood management infrastructure and historical incidences of flooding.

4. Sources of Flood Risk

Main Rivers

- 4.1. The River Wyre is located approximately 2km to the east of the site.

Ordinary Watercourses

- 4.2. There are no other watercourses within the redline application boundary of the site. The Hillylaid Pool is located approximately 250m to the east of the Site.

Historical Fluvial Flooding

- 4.3. There is no record of historical flooding on the site from rivers or seas based on the EA Recorded Flood Outlines dataset.

Tidal

- 4.4. Tidal flooding occurs when a high tide and high winds combine to elevate sea levels. An area behind coastal flood defences can still flood if waves overtop the defences or break through them. Tidal flooding can also occur a long way from the coast by raising river levels. Water may overtop the riverbank or river defences when tide levels are high. The site is located within Flood Zone 3. Flood Zone 3 denotes a risk of flooding from tidal sources greater than 1 in 200 (0.5%).



Figure 3: EA Flood Map for Planning (Base map and data from Bing Maps. Contains public sector information licensed under the Open Government Licence v3.0)

- 4.5. Based on the EA Flood Map for Planning alone, the risk of flooding from tidal sources is considered high.
- 4.6. A Product 4 data set has been requested from the EA but not provided at the time of writing. This report should be updated on receipt of a response from the EA.
- 4.7. However, it should be noted that the proposal is a change of use from a dwelling to a care home and thus there would be no change in flood risk vulnerability. Internal safe refuge could be sought at the upper floors in the event of rapid flooding whereby prior evacuation is not possible (although with the risk being tidal, prior evacuation should be possible given the tidal cycle is well understood). As such, the inclusion of a Product 4 may not necessarily result in significant changes to the conclusions of this report given no change in vulnerability.

Fluvial

- 4.8. Flooding from watercourses arises when flows exceed the capacity of the channel, or where a restrictive structure is encountered, resulting in water overtopping the banks into the floodplain.
- 4.9. The Flood Zone 3 outline at the site is derived from tidal sources and thus the risk of flooding from tidal sources is considered low.

Canals

- 4.10. The Canal and River Trust (CRT) generally maintains canal levels using reservoirs, feeders, and boreholes and manages water levels by transferring it within the canal system.
- 4.11. No CRT canals were identified within 1km of the site.
- 4.12. The risk of flooding to this site from canals is considered to be low.

Pluvial

- 4.13. Pluvial flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.
- 4.14. Annual surface water flood risk is labelled by the EA as:
- 'High Risk'; >3.3% AEP (annual probability greater than 1 in 30).
 - 'Medium Risk'; 1.1% to 3.3% AEP (annual probability between 1 in 100 and 1 in 30).
 - 'Low Risk'; 0.1% to 1% AEP (annual probability between 1 in 1000 and 1 in 100).
 - 'Very Low Risk'; <0.1% AEP (annual probability less than 1 in 1000).
- 4.15. Examination of the EA's Flood Risk from Surface Water mapping for the modelled High Risk and Medium Risk events, shows the site to not be affected by these modelled events.
- 4.16. The site is only affected by the modelled 1 in 1000 year event with depths of 150mm to 300mm on the front access to the property. The property itself and garden is not within the modelled 1 in 1000 extent.
- 4.17. The site is not located in a Critical Drainage Area.

4.18. As such, given the property itself is not affected in the 1 in 1000 year modelled extent the risk of flooding from pluvial sources is considered to be low.

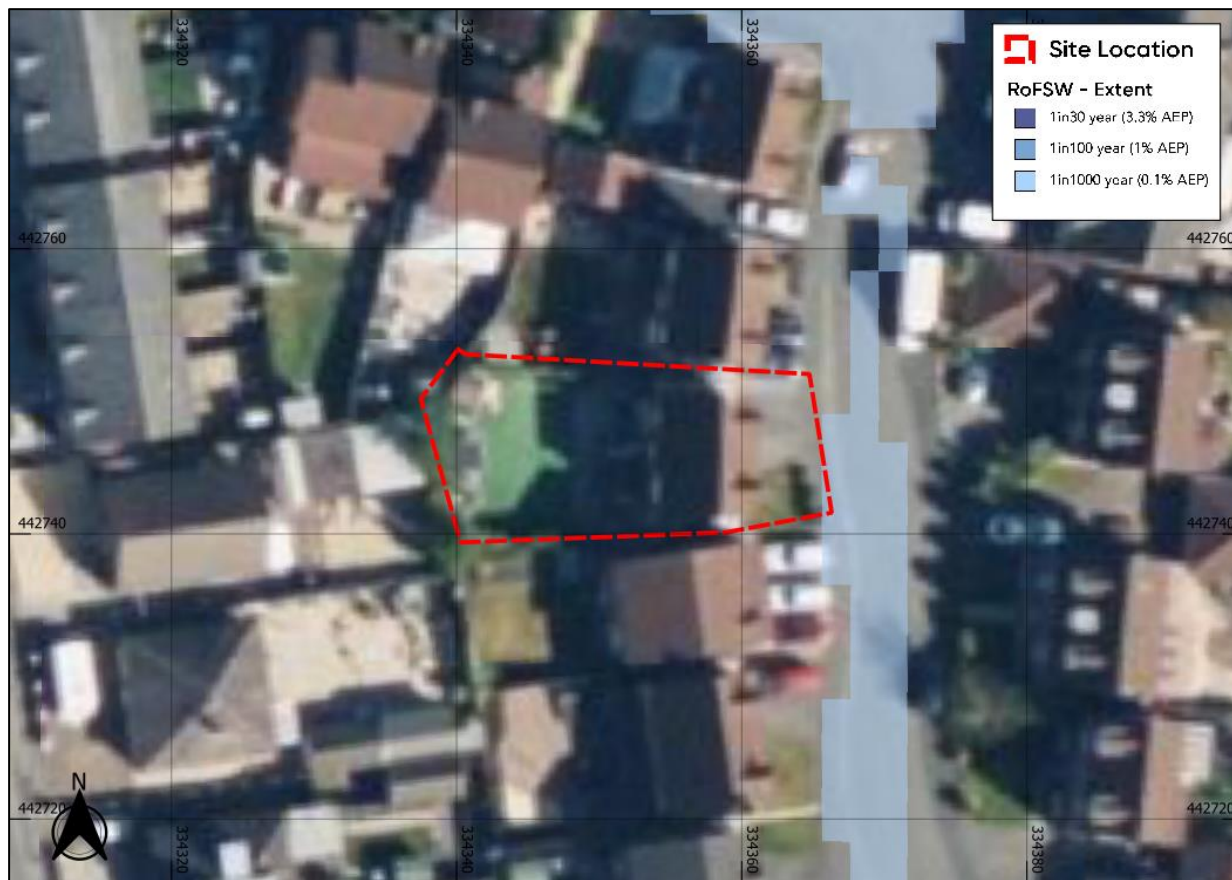


Figure 4: EA Surface Water Flood Risk Mapping (Base map and data from Bing Maps. Contains public sector information licensed under the Open Government Licence v3.0)

Reservoirs

4.19. Large waterbodies or reservoirs that have walls built above the surrounding ground level pose a risk of flooding. Walls could fail due to old age, accident, or because excess flood water has been added to the reservoir. Although a breach is unlikely, the consequences would be significant, leading to rapid inundation of the downstream floodplain.

4.20. According to the EA's Flood Risk from Reservoirs mapping the site is outside modelled flood extents in the event of reservoir flooding (Figure 5).

4.21. The site has not been flagged as being at risk of flooding following a reservoir failure.



Figure 5: EA Reservoir Flood Risk Mapping (Base map and data from Bing Maps. (Base map and data from Bing Maps. Contains public sector information licensed under the Open Government Licence v3.0)

Groundwater

- 4.22. Groundwater flooding occurs in areas where underlying geology is permeable, and water can rise within the strata sufficiently to breach the surface.
- 4.23. The British Geological Survey's (BGS) mapping shows superficial deposits of Tidal Flat Deposits comprised of Clay and Silt underlying the site. The bedrock underlying the site is mapped as the Kirkham Mudstone Member - Mudstone.
- 4.24. Historical BGS boreholes within the vicinity of the site, BGS ID: 2978: BGS Reference: SD34SW91 (261m north of the site) confirms that the geology was recorded to contain, clays and gravels. Water was struck at approx. 2m below ground level.
- 4.25. The SFRA presents the EA's Areas Susceptible to Groundwater Flooding mapping. The site is within a 1km cell of which <25% is considered susceptible to groundwater flooding (Figure 6).

4.26. As the development proposals do not include any proposed basements, nor any change to the foundations or fabric of the existing building the risk from groundwater to the development is low.

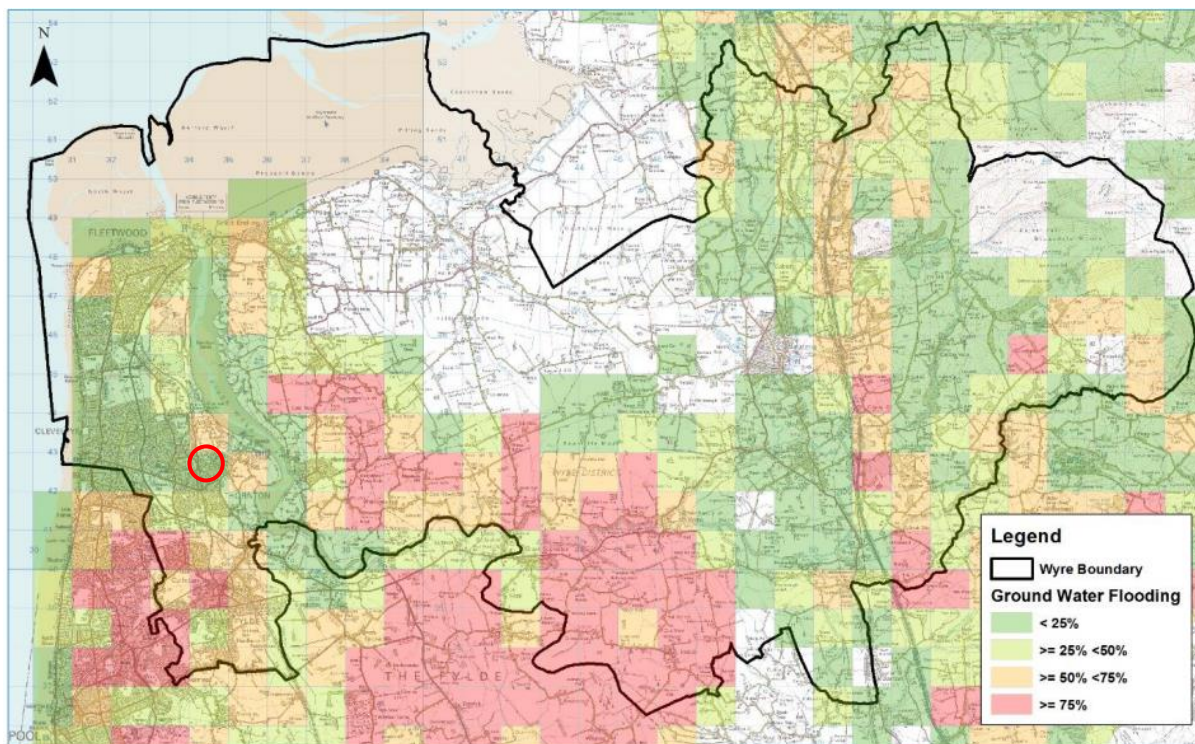


Figure 6: Susceptibility to Groundwater Flooding with Site Located in Red Circle (Source: Wyre SFRA 2016)

Sewers

4.27. Surface water sewers can be a cause of flooding where the drainage network has become overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.

4.28. The SFRA states that areas of sewer flooding incidents have been observed within the western parts of the borough particularly around Thornton and Cleveleys. The SFRA further comments that the risk from sewer flooding is likely reflective of the more urban nature of this part of the Borough, which, due to the greater coverage of impermeable surfaces, increases the volume of surface water run-off entering the sewer system and thereby amplifies the risk that these systems being overwhelmed. In addition, due to the age of urban developments within this area, much of the sewerage infrastructure is likely to be combined.

4.29. The development is therefore considered to be at medium risk of flooding from sewers.

5. Flood Risk Mitigation

Fluvial

5.1. The risk of fluvial flooding is considered low and as such no mitigation has been recommended.

Tidal

5.2. The site is located within EA Flood Zone 3 with a risk of flooding from tidal sources of greater than 1 in 200 (0.5%). The proposed development is for a change of use from C3 to C2.

5.3. A Product 4 data set has been requested from the EA but not provided at the time of writing. This report should be updated on receipt of a response from the EA.

5.4. However, it should be noted that the proposal is a change of use from a dwelling to a care home and thus there would be no change in flood risk vulnerability. Internal safe refuge could be sought at the upper floors in the event of rapid flooding whereby prior evacuation is not possible (although with the risk being tidal, prior evacuation should be possible given the tidal cycle is well understood). As such, the inclusion of a Product 4 may not necessarily result in significant changes to the conclusions of this report given no change in vulnerability.

5.5. It is recommended, where possible, that the development is fitted with flood resistance and resilience measures in accordance with Improving the Flood Performance of New Buildings - Flood Resilient Construction. The following measures are recommended where practical:

- Water resistant internal render and floor screed.
- Non-return valves should be installed on all new drainage.
- All new plumbing insulation to be of closed cell design.

Pluvial

5.6. The site is not located in a Critical Drainage Area. The site is only affected by the modelled 1 in 1000 year event with depths of 150mm to 300mm on the front access to the property. The property itself and garden is not within the modelled 1 in 1000 extent. The risk of pluvial flooding is considered to be low and no mitigation measures specific to flood risk from this source are not recommended.

Reservoirs, Groundwater and Sewers

- 5.7. Flood risk from reservoirs and groundwater are considered to be low.
- 5.8. The risk of flooding from sewer flooding is considered medium.

Increase to Flood Risk Elsewhere




- 5.9. As the development is only a change of use there is no flood risk elsewhere as part of the proposed development.

Flood Warnings

- 5.10. The site is in the Environment Agency 'Wyre estuary at Thornton, between A585, Stanah Road and School Road' flood warning service area. This service allows site owners to register an address along with contact details so that, in the event of a flood being forecast, they are sent an alert. As a further precaution and risk reduction, the owner of the site should sign up.

<https://www.gov.uk/sign-up-for-flood-warnings>

- 5.11. Flood warnings/alerts can be enforced at any time of the day or night. Signing up for this service provides site owners some notice before a flood event. The amount of time afforded before a flood occurs depends on the site-specific location (e.g. proximity to the source of flooding, topography of the surrounding area) and the flood mechanism (e.g. bank over topping versus a breach event). Flood alerts and warnings provide site managers with time to take necessary action, e.g. communication of the risk of flooding to occupants/employees etc, evacuation of occupants offsite or to a safe level, removal of valuable items out of reach of flooding and the mounting of site-specific flood defences.

 <p>FLOOD ALERT</p>	 <p>FLOOD WARNING</p>	 <p>SEVERE FLOOD WARNING</p>	<p>Warning no longer in force</p>
<p>What it means Flooding is possible. Be prepared.</p>	<p>What it means Flooding is expected. Immediate action required.</p>	<p>What it means Severe flooding. Danger to life.</p>	<p>What it means No further flooding is currently expected for your area.</p>
<p>When it's used Two hours to two days in advance of flooding.</p>	<p>When it's used Half an hour to one day in advance of flooding.</p>	<p>When it's used When flooding poses a significant risk to life or significant disruption to communities.</p>	<p>When it's used When a flood warning or severe flood warning is no longer in force.</p>
<p>Triggers</p> <ul style="list-style-type: none"> • Forecasts that indicate that flooding from rivers may be possible. • Forecast intense rainfall for rivers that respond very rapidly. • Forecasts of high tides, surges or strong winds. 	<p>Triggers</p> <ul style="list-style-type: none"> • High tides, surges coupled with strong winds. • Heavy rainfall forecast to cause flash flooding of rivers. • Forecast flooding from rivers. 	<p>Triggers</p> <ul style="list-style-type: none"> • Actual flooding where the conditions pose a significant risk to life and/or widespread disruption to communities. • On-site observations from flooded locations. • A breach in defences or failure of a tidal surge barrier or dam that is likely to cause significant risk to life. • Discussions with partners. 	<p>Triggers</p> <ul style="list-style-type: none"> • Risk of flooding has passed. • River or sea levels have dropped back below severe flood warning or flood warning levels and no further flooding is expected. • Professional judgment and discussions with partners agree that a severe flood warning status is no longer needed.

6. Conclusions

- 6.1. This FRA has been undertaken with reference to the requirements of NPPF and Planning Practice Guidance with respect to the development at 43 Sandwell Avenue, Thornton-Cleveleys, FY5 4FN. It has been written to support a planning application and prepared with due consideration to the nature of the proposed development to provide the appropriate level of detail.
- 6.2. An assessment of the risk of flooding from all sources has been undertaken and is summarised in the table below:

Source of Flooding	Flood Risk Summary
Tidal	The site is in Flood Zone 3, high risk. The proposed development is for the change of use only of the existing dwelling to become a child's care home. The proposal will not increase the flood risk vulnerability of the site – both existing and proposed will provide residential accommodation. No bedrooms are proposed at ground floor. It is recommended that the management of the child's home sign up to the EA flood warning Service.
Pluvial	The site is not located in a Critical Drainage Area. The site is only affected by the modelled 1 in 1000 year event with depths of 150mm to 300mm on the front access to the property. The property itself and garden is not within the modelled 1 in 1000 extent. The risk of pluvial flooding is considered to be low.
Reservoirs	Flood risk from reservoirs, canal and groundwater are considered to be low. The risk of flooding from sewer flooding is considered to be medium.
Groundwater	
Sewers	
Canals	

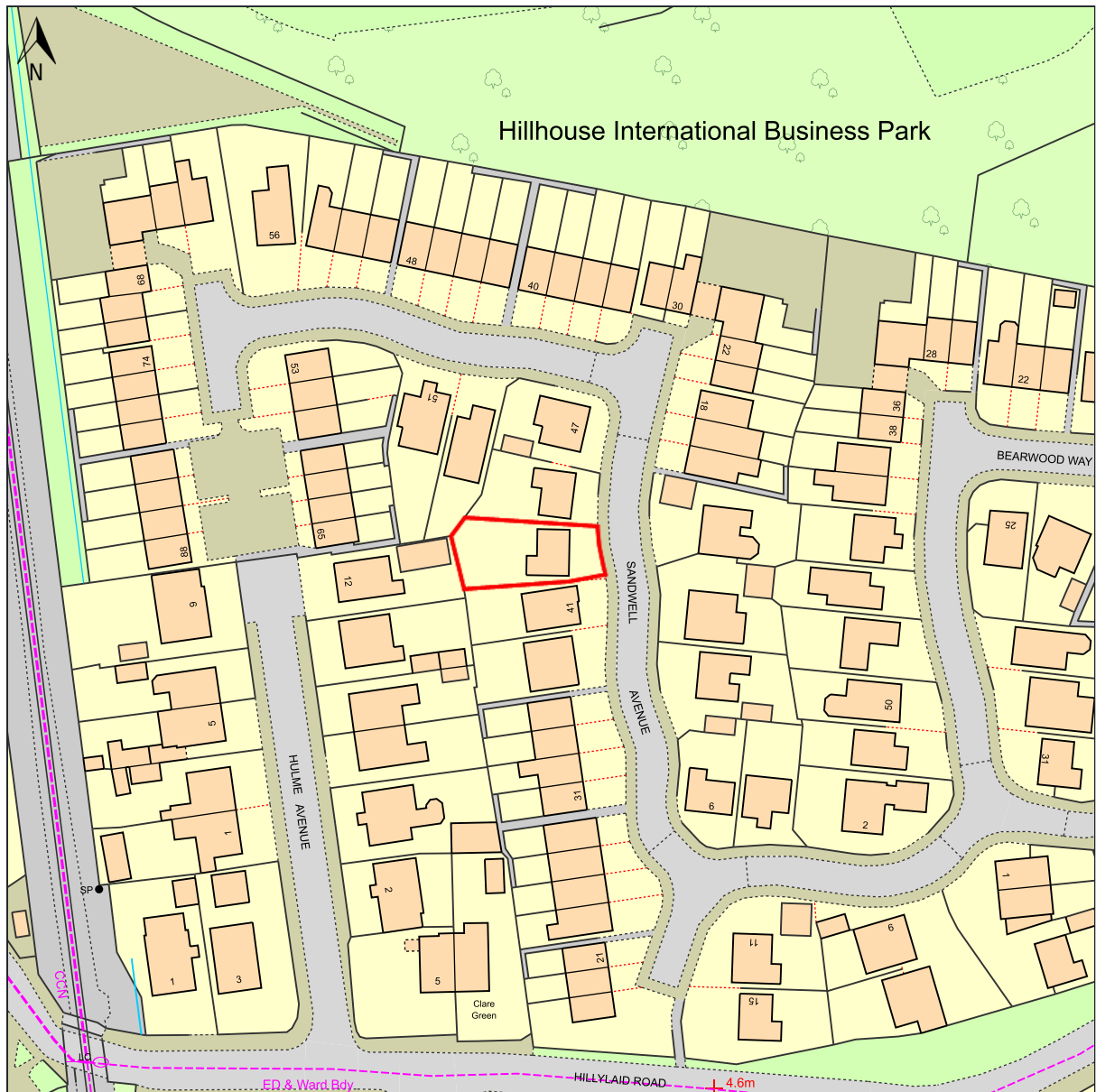
- 6.3. The FRA supports the planning application and demonstrates that there is an acceptable level of flood risk to the site if the mitigation strategies recommended are implemented in the scheme. The development does not increase flood risk off site or to the wider area.
- 6.4. This Flood Risk Assessment should be submitted as part of the planning application to satisfy the requirements under NPPF.

Appendix A - Development Proposals

43, SANDWELL AVENUE, THORNTON CLEVELEYS, LANCASHIRE, FY5 4FN

UPRN: 10003529737

HMLR Title No: LA967262 LAN60501



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