



Flood Risk and Drainage Assessment

Issued: for Planning
Wayside,
James Road,
Crowland,
Peterborough,
PE6 0JB

A REPORT PREPARED FOR AND ON BEHALF OF:
Mr Peter Foster

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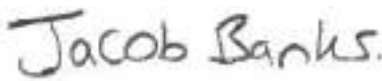


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For and on behalf of
Colliers Building Consultancy Limited

NPPF 2025 FLOOD RISK RATING

Present Flood Risk					Development Flood Risk				
Risk Source	V Low	Low	Med	High	Risk Source	V Low	Low	Med	High
Rivers (fluvial)		✓			Rivers (fluvial)	✓			
Sea (tidal/coastal)	✓				Sea (tidal/coastal)	✓			
Surface water	✓				Surface water	✓			
Groundwater		✓			Groundwater	✓			
Artificial		✓			Artificial	✓			
Residual Breach in River Welland Flood Defences		✓			Residual Breach in River Welland Flood Defences		✓		

Present Flood Risk Summary		Development Flood Risk Summary	
The Site is located within Flood Zone 3 (high probability); however, it benefits from the River Welland flood defences which reduce the flooding risk to Very Low risk from fluvial and tidal sources. These are regularly maintained by the Environment Agency, resulting in a low residual breach risk. Surface water and artificial sources present a Very Low risk, whilst groundwater risk is assessed as Low.		This report assesses the risk of flooding to and from the proposed development over its 100-year lifetime, taking account of climate change. The risk ratings assume implementation of the recommended mitigation measures. There is an extant approval for the permanent siting of 33 touring caravans on the site and proposals are to amend this to 19 residential static caravans and 8 touring pitches. The proposed development does not alter the 'Highly Vulnerable' classification of the extant consent, but results in a reduction in the total number of residential units, thereby reducing overall flood risk. A precautionary design approach based on the principles of the Standing Advice has been adopted to ensure the development will be made safer than the extant approval, resulting in a reduced potential risk to life and representing an improvement over the extant approval.	

KEY ASSESSMENT FINDINGS – FLOOD RISK

The following issues represent the key matters for consideration as a result of this flood risk and drainage assessment with regards to flooding, as part of the proposed permitted development of the Site.

1. This Flood Risk and Drainage Assessment (FRDA) has been prepared to assess flood risk from all sources in relation to proposals for the siting of 19 residential static caravans and 8 touring pitches (27 residential units) and provides an appropriate drainage strategy for disposal of surface water runoff and foul drainage.
2. There is an extant permission at the site for 33 touring caravans (H02-0505-21) at the site. The extant planning approval is for the: *“Use of land for touring caravans without limitation on the number of caravans for 12 months a year, except that this use shall not extend to cover the permanent residential occupation of any caravans on site, nor the standing of any static mobile homes.”*

The vulnerability classification (see Annex 3 of the NPPF, 2025) of the extant development is not well defined, as it lies between More and Highly Vulnerable. As the distinction between holiday and permanent occupation is limited, as there is no effective restriction preventing continuous occupation throughout the year; and therefore the proposed development is Highly Vulnerable. Although the extant approval is not for the permanent occupation of the site, there is little to no difference to how the site is currently being used, versus the proposed development and therefore no increase in the level of exposure of site occupants, property and infrastructure.

There will actually be an overall reduction in the number of residential units, of 5 less than the extant approval, and the occupancy rate will therefore reduce as a result, reducing the number of occupants at risk from flooding. Furthermore, recommendations are made in this report to elevate the proposed static units above the maximum breach scenario flood level and to provide a flood warning and evacuation plan, to ensure the risks of flooding to site occupants and property are lower than existing (extant).
3. Site levels, derived from the Green Planning drawing 20_1141D Wayside – Site Plan (drawing dated 06/02/2025), range from 1.10 metres Above Ordnance Datum (mAOD) to 2.49mAOD, with generally level ground, minimum elevated plot ground level set at 1.60mAOD and access at 2.50mAOD. A site walkover was undertaken on 12th May 2026 and there were some onsite drainage systems installed currently, but these will be upgraded as part of the development, in line with the recommendations included in this report.
4. According to the Environment Agency’s (EA’s) Flood Map for Planning (Figure 8), the entire Site is located within fluvial Flood Zone 3, defined within the NPPF as a High probability of fluvial and tidal flooding from the nearby River Welland. However, it should be noted there are significant defences in place along the River Welland which protect the Site in all events up to and including an event which has a 0.1% annual probability from both rivers and sea.
5. EA data from the Welland Glen Flood Model (Mott MacDonald, 2016) has been analysed, the model results indicate no flooding across all present-day events, including the 1 in 1,000-year event, due to containment by River Welland flood defences. For climate change, a 20% uplift (proxy for 2080s epoch up to the year 2115) was applied, with flows remaining within defences, resulting in a Very Low fluvial flood risk from EA designated Main Rivers and the sea during both present day and future scenarios.

6.	Local drainage ditches managed by the North Level Internal Drainage Board (IDB) have water levels and flows regulated by pump capacity, specifically at Postland Pumping Station, which plays a key role in controlling flood risk in the area. As no detailed modelling is available for the drainage ditches, EA (2026) surface water mapping has been used as a proxy, indicating flows are largely contained, with only shallow ($\leq 0.15\text{m}$) exceedance during extreme events, which will be intercepted by the proposed drainage system, resulting in low residual risk.
7.	Sites located behind flood defences may experience rapid inundation in the unlikely event of a breach in formal flood defences, although flood defences are inspected frequently and the EA obtains significant amounts of funding from the Government to maintain and where required, repair defences, making a breach unlikely. Breach modelling (Royal HaskoningDHV, 2017) shown in the Strategic Flood Risk Assessment (SFRA) (informed by LiDAR data) indicates there is a hazard rating of 'Danger for some', increasing to 'Danger for most' in the 1% AEP present day and future (2115) scenarios. The 0.1% AEP (2115) breach scenario flood depth mapping (Appendix 5) indicates flood depths of up to 1.0m and has been used to inform recommended Finished Floor Levels (FFLs) for the proposed development. It is reiterated that the River Welland defences are regularly inspected and where required, maintained by the EA, resulting in a low likelihood of breach. The overall risk of flooding from tidal sources is therefore assessed as low, but the breach flood level has informed the proposals for finished floor levels of the units, in line with the developer requirements as set out within the SFRA Standing Advice.
8.	The EA's Risk of Flooding from Surface Water (RoFSW) mapping confirms there is a Very Low risk of surface water flooding at the Site.
9.	There are no basements and existing and proposed residential units are raised off the ground. Although the permeable superficial deposits may create a perched groundwater table, influenced by rainfall and river levels, the lower surrounding ditches intercept and drain groundwater. Borehole data suggests the groundwater table is approximately 1.5mbgl which is unlikely to interact with buried infrastructure and more unlikely to emerge above the ground. The overall risk of flooding from groundwater to the existing and proposed development, including climate change, is Low.
10.	Site inspections have identified some culverts and dry ditches. Any flooding surcharging these features in the unlikely event that these features were blocked, flood water would flow away from the Site due to surrounding topography, draining away from the site. IDB-managed systems which include Postland Pumping Station, benefit from maintenance and alarms, meaning pump failure risk and associated flood risk are low.
11.	The Site is located wholly within Flood Zone 3a, where the NPPF (2025) and Planning Practice Guidance (PPG, 2025) indicate new 'Highly vulnerable' development is incompatible with this flood zonation, and the Sequential and Exception Tests are required. South East Lincolnshire's Standing Advice (SA ¹), supported by Royal HaskoningDHV (2017) breach mapping, identifies the Site as "Danger to Most" and is aligned with the NPPF stance on compatibility with the EA's Flood Zones. However, the extant planning approval already allows for the parking of up to 33 touring caravans on the site, which include sleeping accommodation, which is already a Highly Vulnerable use class. In effect, as there would be a reduction in the number of occupants and residential accommodation and result in no change in vulnerability, the proposals would reduce the overall risk of flooding at the site and the number of persons at risk of flooding. The extant planning approval therefore offers a clear and robust baseline, where the sequential and exception tests are not required.

¹ South East Lincolnshire Standing Advice https://southeastlincslocalplan.org/media/24013/Appendix-C-Standing-Advice/pdf/Appendix_C_-_Standing_Advice.pdf?m=1703937390937

12.	This Site-specific FRA demonstrates the proposed development (19 residential static caravans and 8 touring pitches) reduces overall occupancy compared to the extant consent, alongside low residual breach risk and enhanced mitigation. A precautionary design approach has been adopted, applying the principles of the Standing Advice, Finished Floor Levels should be set at 1.15m above existing ground levels (incorporating a 0.15m uplift above the requirement for 'More Vulnerable' development), providing a minimum level of 2.75mAOD, and flood-resilient construction extending to 2.90mAOD. Thus, providing a comparable, and improved risk profile relative to the baseline extant planning permission. The static caravans will also be anchored by chains to the ground and a Flood Warning and Evacuation Plan (FWEP) will be compiled, subject to an appropriate condition of the planning approval.
13.	This FRA demonstrates the proposed development comprising 19 residential static caravans and 8 touring caravans will be safe over its 100 year lifetime through the implementation of appropriate mitigation measures. Furthermore, the reduction in the total number of units, compared to the extant permission, results in a corresponding reduction in potential risk to life which is a benefit over the existing scenario.

KEY ASSESSMENT FINDINGS – DRAINAGE

1.	Foul Drainage All touring caravans and occupants currently use a toilet block, which is also used to empty the foul storage systems within the touring caravans. This is inspected and emptied regularly and there were no obvious odours or issues reported by those occupants currently using the site. The Site benefits from an established foul drainage network. This includes a Marsh Shallow Ensign Ultra and Standard Package Treatment Plant (PTP), discharging to a drainage ditch to the east. Although the PTP is not yet connected to a power supply, it is assumed the necessary discharge consent has been obtained from the relevant statutory authority, understood to be the North Level Internal Drainage Board (IDB).
2.	There is an existing Package Treatment Plant (PTP) which is on the site with a capacity to serve up to 25P, but is not currently in operation. This PTP does not have sufficient capacity to drain the proposed Site and therefore an upgraded PTP is required to serve the population of the Site.
3.	Two foul drainage options have been identified: - A PTP sized to serve the static caravans only (approx. 76 occupants; 9.12 m³/day), discharging either to ground or into the adjacent surface watercourse, with touring caravans continuing to use the existing cesspit; or - A preferred option comprising a single PTP sized to serve the entire site (up to 108 occupants; approx. 13.44 m³/day), providing a more sustainable and robust solution, discharging either to ground or into the adjacent surface watercourse. In either option, an EA Bespoke permit will be applied for to facilitate any offsite or ground discharge.
4.	Surface Water Drainage Surface water management follows the principles established under the extant approval, with permeable gravel surfacing and a Type 3 sub-base providing attenuation and infiltration. This approach aligns with SuDS best practice, delivering both storage and water quality benefits in accordance with the CIRIA SuDS Manual (2015).

5.	Anecdotal site evidence confirms an installed depth of approximately 400mm of gravel permeable substrate to drain surface water runoff from the site. Design calculations, incorporating a 1 in 100 year event plus 40% climate change allowance and 10% urban creep, indicate that a minimum gravel depth of 346mm is required to drain runoff from all proposed static caravan roof areas. This demonstrates the existing drainage substrate already provides adequate attenuation and provides additional filtration of runoff, through the substrate of the underlying permeable pavement system. The system is also at least 1.15m above the maximum groundwater table, recorded within the nearest borehole at 1.5m below ground, the requirement is for at least 1m between the base of the gravel substrate and the groundwater table.
6.	Overall, the drainage strategy is considered appropriate and compliant with national and local policy. The established infrastructure is suitable for the proposed development, and there should be no objection in principle to the foul and surface water drainage proposals, subject to standard planning controls and detailed design, in agreement with the Council.

RECOMMENDATIONS

1.	Due to the nature of the development and assessed flood risk profile, the following additional works are required to ensure that the proposals are acceptable: - Given the single-storey nature of the development and its non-standard classification, the design adopts a precautionary approach based on the principles of the Standing Advice. Finished floor levels (FFLs) should be set at 2.75 mAOD, with flood-resilient construction measures extending to 2.90 mAOD. The FFLs include a 0.15 m freeboard above the predicted 0.1% AEP (2115) fluvial breach flood level of 2.60 mAOD. - The recommended resilience and mitigation measures should be incorporated into the design of the development; - The PTP upgraded to serve the population of the proposed development as well as any required licencing and permits approved with statutory authorities; and - Preparation of a Flood Warning Evacuation Plan (FWEP).
2.	There is the potential for riparian responsibilities² associated with the drainage ditches within the vicinity of the Site. Further information is available online; however, it is recommended that the Internal Drainage Board (IDB) is consulted to confirm ownership and maintenance responsibilities.

² IDB Riparian Responsibilities <https://www.northlevelidb.org/wp-content/uploads/2024/02/riparian-leaflet-Lincs-County-Council.pdf>

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FLOOD RISK ASSESSMENT AND DRAINAGE REPORT

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1.0 INTRODUCTION

1.1 Background and Purpose

- 1.1.1 A Site-specific Flood Risk and Drainage Assessment (FRDA) has been undertaken, to assess the flood risk to the proposed development/ existing Site, with particular attention to the effects of flooding upon the existing/proposed development and associated infrastructure and access/egress routes that are essential for normal Site operation.
- 1.1.2 A Flood Risk Assessment (FRA) is required to consider the proposed change in development from 33 touring caravans to a combination of 19 residential static caravans and 8 touring caravans. Both the existing and proposed developments are classified as 'Highly Vulnerable' in terms of land use. Notably, the proposed development would result in a reduction in the overall number of caravans on site, thereby reducing the potential risk to life relative to the extant permission.
- The purpose of the FRA is therefore to demonstrate that the proposed development can be made safe for its lifetime, taking account of the associated flood risk.
- 1.1.3 The Site currently benefits from permission for 33 touring caravans, which has therefore been adopted as the baseline for this assessment.
- 1.1.4 This assessment has been undertaken by compiling information concerning the Site and the surrounding area to construct a 'conceptual Site model', including an understanding of the appropriateness of the development as defined in the NPPF (2025) and the source(s) of any flood risk present, guided by the NPPG (2025). Finally, a preliminary assessment of the steps that can be taken to manage flood risk to the development was undertaken to determine if the risks identified could be sufficiently mitigated against.

1.1.5	This report has been prepared with reference to the NPPF (2025) and NPPG (2025), which promote a sequential, risk-based approach to the location of development. This also applies to locating a development within a Site which has a variable risk of flooding.
1.1.6	“The approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding” (Paragraph: 023. NPPG, 2025). The purpose of this report is to provide clear and pragmatic advice regarding the nature and potential significance of flood hazards which may be present at the Site.
1.2	Report Scope
1.2.1	In accordance with the requirements set out within NPPG 2025 (Paragraph: 021 Reference ID: 7-021-20250825), a thorough review of publicly and commercially available flood risk data and EA supplied data has been undertaken to assess potential flood risk to the Site from rivers and coastal sources, surface run-off (pluvial), groundwater and artificial sources (e.g., sewers, canals and reservoirs), including historical flood information and modelled flood extent. Appropriate measures are recommended to manage and mitigate the flood risk to the property.
1.2.2	Information obtained from the EA, North Level District Internal Drainage Board (IDB) and a review of the South East Lincolnshire Strategic Flood Risk Assessment (March 2017). is used to ascertain local flooding issues and, where appropriate, identify information to support a Sequential and/or Exception test required as part of the NPPF (2025).
1.2.3	The existing and future flood risk to and from the Site from all flood sources is assessed in line with current best practice using the best available data. The risk to the development has been assessed over its expected lifetime, including appropriate allowances for the impacts of climate change. Residual risks that remain after the flood risk management and mitigation measures are implemented, are considered with an explanation of how these risks can be managed to keep the users of the development safe over its lifetime.
1.2.4	An indication of whether the Site will potentially increase flood risk elsewhere is provided, including where the proposed development increases the building footprint at the Site. The surface water drainage system has been assessed as part of this investigation and is considered adequate to accommodate the proposed development, however an upgraded PTP will be required to service the proposed developments' population.

1.3 Datasets

1.3.1 The following table shows the sources of information that have been consulted as part of this report.

1.3.2 **Table 1. Datasets Consulted to Identify Flooding Sources and Risks**

Source of Flooding	Datasets Consulted				
	Commercial Flood Maps	Local Policy & Guidance Documents*	Environment Agency (Appendix 6)	North Level IDB (Appendix 7)	OS Data
Historical	X	X	X	X	X
River (fluvial) / Sea (tidal/ estuarine)	X	X	X	X	X
Surface water (pluvial)	X	X	X		X
Groundwater	X	X			X
Sewer		X			X
Canal		X			X
Culvert/bridges		X			X
Reservoir		X	X		X

* Local guidance and policy, referenced in Section 1.7, has been consulted to determine local flood conditions and requirements for flood mitigation measures.

1.4 Assessment Methodology

1.4.1 The assessment methodology which has been followed to ensure the flooding risks at the Site are assessed appropriately is provided below:

1. Assess the Present Flood Risk;
2. Assess the Future Development Risk
3. Assess existing onsite drainage systems and requirements for proposed drainage systems.

1.5

Present Flood Risk

1.5.1

The baseline Present Flood Risk Likelihood rating provides a high-level overview of the most up to date risk mapping, this does not consider the Site layout or any further detail other than the mapping or the impacts of climate change.

1.5.2

Table 2. Present day Baseline Likelihood Rating

Present day Baseline Likelihood Rating	Likelihood Description	Clarification
High	Flooding indicated to occur in a 1 in 30 year (3.3%) AEP event	Designated where flooding affects part/all of the Site or access and does not account for the location of the proposed development relative to identified flooding. Present-day risks are considered only, the future impacts as a result of climate change to the Site are not considered.
Medium	Flooding indicated to occur in a 1 in 100 year (1%) AEP event	
Low	Flooding indicated to occur in a 1 in 1000 year (0.1%) AEP event	
Very Low	No flooding indicated to occur in a 1 in 1000 year (0.1%) AEP event	

1.6

Future Development Flood Risk

1.6.1

The Future Development Likelihood Rating confirms the likelihood of flooding ingress into the buildings, using topographic survey against the modelled data, including for the impacts of climate change over the projected lifespan of any development proposed.

1.6.2

The Future Development Likelihood Risk Rating is then reviewed against the implementation of appropriate resilience and mitigation measures and their respective impacts upon anticipated internal flooding frequency and depths to determine the future development flood risk.

2.0 POLICY AND GUIDANCE

2.1	National Policy and Guidance
2.1.1	<u>National Planning Policy Framework (NPPF)</u> Published: 12 December 2024 (last updated: 7 February 2025) The National Planning Policy Framework sets out the Government's overarching planning policies for England, including how development should respond to climate change and flood risk.

2.1.2	<u>Flood Risk and Coastal Change (Planning Practice Guidance(PPG))</u> Published: 6 March 2014 Last updated: 17 September 2025 The Flood Risk and Coastal Change Planning Practice Guidance supports the NPPF and provides a framework for managing flood risk within the planning system in England. It promotes a risk-based approach to development, requiring that: • Development is directed to areas of lowest flood risk through the Sequential Test • Where development in higher-risk areas is unavoidable, the Exception Test ensures it is justified and safe; and • All development must be safe for its lifetime, accounting for climate change, and must not increase flood risk elsewhere. The guidance also emphasises: • Consideration of all sources of flooding (fluvial, tidal, surface water, groundwater, etc.) • Preparation of site-specific Flood Risk Assessments (FRAs) where required • Use of sustainable drainage systems (SuDS) and natural flood management; and • Incorporation of flood resilience, safe access/egress, and emergency planning measures.
2.1.3	<u>National Standards for Sustainable Drainage Systems (SuDS) (2025)</u> The National SuDS Standards set out the minimum requirements and principles for the design, construction, and maintenance of surface water drainage systems for new developments in England. They promote a “SuDS approach”, which seeks to: • Mimic natural drainage processes • Manage runoff at source and close to the surface • Reduce flood risk and runoff rates • Improve water quality; and • Deliver wider benefits such as amenity and biodiversity. The standards comprise: • One hierarchy standard (runoff destination priority) • Six fixed standards covering interception, flood management, water quality, amenity, biodiversity, and long-term management Overall, they require developments to demonstrate that surface water is managed sustainably, does not increase flood risk elsewhere, and provides multi-functional environmental and social benefits.
2.2	Local Policy and Guidance
2.2.1	For this report, several documents have been consulted for local policy and guidance, and relevant information is outlined below.

2.3	South East Lincolnshire Strategic Flood Risk Assessment 2017
2.3.1	The National Planning Policy Framework (NPPF) requires a sequential, risk-based approach to the location of development, with the aim of directing new development to areas at the lowest probability of flooding. The primary objective of the Sequential Test is to avoid development in areas at medium and high risk of flooding (Flood Zones 2 and 3), as well as areas affected by other sources of flooding, where reasonably available alternative sites exist.
2.3.2	In applying the Sequential Test, sites within Flood Zone 1 (low probability) should be considered in preference. Where no reasonably available sites exist within Flood Zone 1, consideration may be given to sites within Flood Zone 2, and only where there are no suitable sites within Flood Zones 1 or 2 should sites within Flood Zone 3a be considered.
2.3.3	However, in South East Lincolnshire, the majority of the South Holland District lie within Flood Zone 3. As such, the application of the Sequential Test cannot rely solely on Flood Zone classification. Instead, it is necessary to utilise the refined flood risk information presented within the Strategic Flood Risk Assessment (SFRA), which incorporates the impacts of climate change.
2.3.4	In this context, the Sequential Test is informed by the SFRA breach hazard mapping for the 2115 climate change scenario, in accordance with national policy requirements to consider residential development over a minimum 100-year lifetime. Sites are therefore assessed and compared based on their flood hazard classification, with preference given to sites falling within lower hazard categories.
2.3.5	Where sites are identified within the same flood hazard category, further differentiation is made using modelled flood depths associated with the 2115 breach scenario, with sites experiencing lower depths considered sequentially preferable.
2.3.6	The Exception Test allows certain development in higher flood risk areas where it cannot be located in areas of lower risk, following application of the Sequential Test.
2.3.7	It applies to defined vulnerability classifications in accordance with national policy, including 'More Vulnerable', 'Highly Vulnerable', and 'Essential Infrastructure' development.
2.3.8	The Test has two requirements, both of which must be satisfied: • Part (a): The development must provide wider sustainability benefits that outweigh flood risk; • Part (b): The development must be safe for its lifetime, without increasing flood risk elsewhere and, where possible, reducing overall flood risk.
2.3.9	Compliance with the Exception Test must be demonstrated through a site-specific Flood Risk Assessment, with appropriate mitigation measures informed by the SFRA Standing Advice.

2.4	Strategic Flood Risk Assessment Standing Advice
2.4.1	The Environment Agency and Local Planning Authorities provide Standing Advice ³ , presented within the SFRA (Appendix C), to guide the assessment and mitigation of flood risk for individual developments.
2.4.2	This guidance is used to inform site-specific Flood Risk Assessments and establish appropriate mitigation measures based on flood hazard. In particular, single-storey development is required to consider the 0.1% AEP (1 in 1,000 year) event, reflecting the need to address extreme flood scenarios.
2.4.3	Developers should also have regard to Environment Agency guidance on the preparation of Flood Risk Assessments, alongside best practice guidance such as Improving the Flood Performance of New Buildings, which promotes the use of flood resistant and resilient construction methods to reduce risk in areas of low or residual flood risk.
2.5	South East Lincolnshire Local Plan 2011-2036 (2019)
2.5.1	<u>Policy 4: Approach to Flood Risk</u> Policy 4 sets out the requirements for development located within areas at risk of flooding, including Flood Zones 2 and 3 and areas susceptible to flooding during breach or overtopping scenarios as identified within the Strategic Flood Risk Assessment (SFRA). Development in such areas may be permitted where it can be demonstrated that the Sequential Test has been satisfied, confirming that no reasonably available sites exist at a lower risk of flooding within the defined settlement area. It should be noted that, whilst the Sequential Test is not generally required for minor development or change of use, it remains applicable to proposals involving the introduction or change to caravan, camping, chalet, mobile home or park home uses. Where required, the Exception Test must also be satisfied, demonstrating that the development provides wider sustainability benefits that outweigh flood risk. All proposals must be supported by a site-specific Flood Risk Assessment (FRA), which considers flood risk from all sources, including the effects of climate change. The FRA must demonstrate that the proposed development is compatible with the flood zone, identify predicted flood levels (including breach and overtopping scenarios), and set out appropriate mitigation measures to ensure the development can be made safe for its lifetime. This includes the incorporation of suitable flood resistance and resilience measures, provision of safe access and egress, and the preparation of a flood warning and evacuation strategy where necessary. In addition, the development must ensure that there is no increase in flood risk elsewhere and, where possible, should incorporate opportunities to reduce flood risk overall. Appropriate surface water management, including the use of Sustainable Drainage Systems (SuDS), should be implemented unless it can be demonstrated that such measures are not technically feasible. Adequate foul water infrastructure must also be provided, and access for the maintenance of flood risk and drainage infrastructure must be safeguarded.

³ Standing Advice https://southeastlincslocalplan.org/media/24013/Appendix-C-Standing-Advice/pdf/Appendix_C_-_Standing_Advice.pdf?m=1703937390937

	The policy places significant restrictions on caravan and mobile home development in areas at risk of flooding. Permanent residential caravans are not supported in such areas. Furthermore, caravan, chalet, log cabin, camping and touring sites will not be permitted in locations identified as having a flood hazard rating of 'Danger for Most' or 'Danger for All'. Proposals which would increase the risk to occupants, including the introduction of vulnerable uses at ground floor level within high hazard areas, will not be supported unless appropriate mitigation, safe refuge, and evacuation measures are demonstrated. Mitigation should be incorporated within SuDS for all major developments, regardless of flood risk. SuDS measures may include rainwater harvesting, storage, and treatment systems such as reed beds, with some solutions addressing surface water flooding. Connections to public sewer networks should only be used in exceptional cases where no feasible alternatives exist. The proposed development must demonstrate that adequate foul water treatment is available and deliver a scheme for utilities, water supply, foul and surface water drainage, and flood mitigation in line with Policies 4 and 13.
2.5.2	<u>Policy 2: Development Management</u> Flood risk is a key planning consideration, with development directed to areas of lowest risk where possible. Where development is necessary in higher risk areas, it must be made safe without increasing flood risk elsewhere. Proposals are assessed using the Sequential and, if required, Exception Test, supported by a site-specific Flood Risk Assessment. Mitigation must be implemented by the developer. Sustainable Drainage Systems (SuDS) should be incorporated wherever feasible to manage surface water and reduce overall flood risk. SuDS aim to reduce flood risk, protect the water environment, and create ecological benefits. They should be integrated into all developments where possible, using a range of features such as green roofs, swales, wetlands, and permeable paving. Infiltration methods should be prioritised, with alternative solutions used where necessary. SuDS should be incorporated into site layout to improve water quality, provide mitigation, and ensure appropriate long-term maintenance.
2.5.3	<u>Policy 3: Design of New Development</u> A development will make buildings and places more resilient to flooding by, for example, raising the floor level, and adapting the internal materials, electrical South East Lincolnshire Local Plan 2011-36 circuits and plumbing to cope better with any flood event. These issues may be successfully incorporated in buildings that follow traditional or contemporary design in accordance with Building Regulations. In addition, owing to flood risk new activities may need to be deterred in certain areas based on their intrinsic hazard from water. The hazard may result from a combination of the activity type, its duration and the potential for failure of flood-control measures. The mitigation of flood risk through flood-resistant and flood-resilient design and sustainable drainage systems (SuDS);
2.5.4	<u>Policy 13: South West Quadrant Sustainable Urban Extension</u> Open space comprising equipped play space, informal play space and space of ecological value combined with Sustainable Urban Drainage systems and linked with integrated footpaths and, where possible, providing wider access to the existing permissive footpath/cycleway network;

2.5.5	<u>Policy 28: The Natural Environment</u> Well-designed development can enhance biodiversity by incorporating SuDS features, open space, and green buffers to support habitats and species.
2.5.6	<u>Policy 30: Pollution</u> Development must ensure that foul water and other discharges do not cause pollution that could harm public health, amenity, or the environment, including impacts on surface and groundwater. Proposals should assess and mitigate risks from sewage effluent, ensuring no contamination or mobilisation of existing pollutants. Where risks cannot be adequately addressed through design and treatment measures, development will be refused.
2.5.7	<u>Policy 31: Climate Change and Renewable and Low Carbon Energy</u> The Sequential and Exception Tests are applied to direct development to areas of lower flood risk and ensure proposals are safe. Site-specific Flood Risk Assessments inform development layout, directing more vulnerable elements to areas of lower risk and integrating mitigation measures, including SuDS. Sustainable Drainage Systems are required for major development to manage surface water, reduce runoff rates, and promote groundwater recharge, in accordance with guidance from Lincolnshire County Council as Lead Local Flood Authority.
2.6	Lincolnshire County Council (LCC) (2021) Lincolnshire Development Roads And Sustainable Drainage Design Approach
2.6.1	The guide⁴ links the design of SuDS with the evaluation requirements of planning in a sequence that mirrors the SuDS design process. The document promotes the idea of integrating SuDS into the fabric of development using the available landscape spaces as well as the construction profile of buildings. This approach provides more interesting surroundings, cost benefits and simplified future maintenance
2.6.2	Lincolnshire's fenland poses SuDS challenges due to high groundwater, poor infiltration, flat terrain limiting flow, and restrictive IDB discharge rates (≈ 1.4 l/s/ha).
2.6.3	Surface water should be reused where possible to reduce runoff, with drainage following a preferred hierarchy: • Prioritise rainwater harvesting for reuse (e.g. irrigation, toilets) • Discharge to ground (infiltration) where feasible • Then to surface water bodies • Then to surface water systems or drains • Lastly, to combined sewers
2.6.4	As infiltration is often unsuitable, many developments require a positive outfall. Regardless of destination, runoff should be managed at source using SuDS wherever practicable.

⁴Lincolnshire Development Roads And Sustainable Drainage Design Approach

<https://www.lincolnshire.gov.uk/downloads/file/2061/lincolnshire-development-roads-and-sustainable-drainage-design-approach>

2.6.5

The HLLFA's design criteria for highway SuDS and local flood risk comprise the National non-statutory SuDS Standards and local requirements as shown below:

S2 - For greenfield developments, the peak run-off rate from the development to any highway drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event should never exceed the peak greenfield runoff rate for the same event.

S4 - Where reasonably practicable, for greenfield development, the run-off volume from the development to any highway drain, sewer or surface water body in the 1 in 100 year, 6 hour rainfall event should never exceed the greenfield run-off volume for the same event.

S7 - The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site for a 1 in 30 year rainfall event.

S8 - The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur during a 1 in 100 year rainfall event in any part of: a building (including a basement); or in any utility plant susceptible to water (e.g. pumping station or electricity substation) within the development.

S9 - The design of the site must ensure that, so far as is reasonably practicable, flows resulting from rainfall in excess of a 1 in 100 year rainfall event are managed in exceedance routes that minimise the risks to people and property.

S10 - Components must be designed to ensure structural integrity of the drainage system and any adjacent structures or infrastructure under anticipated loading conditions over the design life of the development taking into account the requirement for reasonable levels of maintenance.

S11 - The materials, including products, components, fittings or naturally occurring materials, which are specified by the designer must be of a suitable nature and quality for their intended use.

S13 - The mode of construction of any communication with an existing sewer or drainage system must be such that the making of the communication would not be prejudicial to the structural integrity and functionality of the sewerage or drainage system.

S15: Climate Change and Urban Creep Allowances

Climate Change Allowances:

All surface water runoff, storage, conveyance, and flow calculations must incorporate the latest Government climate change allowances. One of the following approaches should be used:

- Simple Approach: Apply the higher percentage uplift in all calculations.
- Detailed Approach: Apply the lower uplift and undertake sensitivity testing to demonstrate no increased flood risk on-site or elsewhere.

S16- Allowance to be made for a 10% increase (over the lifetime of the development) in impermeable area across the site being drained, often referred to as 'Urban Creep'.

S17- Requirements for Water Quality (minimum two treatment stages before outfall) – 90% of rainfall events are less than 12mm, therefore, treat “first flush”/90% rainfall (generally 10mm – 15mm).

S18- Interception storage – prevent any runoff for rainfall events up to 5mm.

S19- Systems must drain down within 48 hours.

	S20- ALL SuDS components should be designed to be fully functional for the lifetime of the Major or Minor Development (i.e.100 years). However, where specific asset replacement is required during this 100 year life to achieve this fully functional timeframe, this should be clearly stated (and costed), in the SuDS operation and maintenance plan. S22- Where infiltration trenches are proposed, the acceptable depth will be governed by several site-specific factors, including soil type and the ability to safely construct, inspect and maintain SuDS components (e.g. safely lay, wrap and maintain geotextile). Proportionate highway and SuDS construction and maintenance details are required by the HLLFA at Outline and Full planning stages. Safe and effective construction, maintenance and inspection methods should be clearly and fully thought through, and documented to inform the decision on acceptability of this type of drainage solution at the planning stage.
2.6.6	Where a “Simple Approach” is used by the developer: The 1:100y-6hr design storm peak rainfall intensity (mm/hr) used to calculate the peak run-off and where necessary, the peak storage volume required, should clearly show that a climate change allowance of +40% has been applied to the present day peak rainfall intensity & incorporated in the calculations. NOTE: If only the present-day rainfall intensity has been used in the calculation, and then the resulting storage volume has been factored by +40%, this will significantly under-predict the attenuation storage required and is unacceptable.
2.6.7	To be considered ONLY if the developed site discharges to a river or watercourse. In order that the design surface water discharge from the developed site can safely and effectively enter the receiving watercourse during high water levels and storm flows; a climate change allowance must be added to the “present day” peak river flow (m³/sec) to determine the design peak river/watercourse flow and subsequently the design peak river/watercourse water level. Where a “Simple Approach” is used by the developer: The 1:100y present day peak river flow (and subsequently calculated peak river level at the discharge point) should clearly show that the higher climate change allowance shown in the table above has been applied & incorporated in the calculations.
2.6.8	Hydraulic calculations are required to support major planning and Section 38 submissions, demonstrating drainage system performance across a range of return periods (1, 2, 30, and 100-year plus climate change) and storm durations up to 6 hours. Designs must ensure no internal flooding during the 1 in 100-year event, with exceedance flows safely routed and stored away from properties, avoiding use of main access roads.
2.6.9	Modelling must utilise both FSR and FEH rainfall data, adopting the most onerous results. Industry-approved software is required, with verification where necessary. The Wallingford Procedure should be applied for smaller storm events up to the 5-year return period.
2.6.10	The condition and performance of receiving water bodies must be considered in drainage design, particularly during storm events. Where outfalls may become submerged or restricted, additional modelling is required to assess system performance. For discharges to riparian watercourses, developers must demonstrate suitability through condition surveys of the bed, banks, and structures, ensuring no flow impediments up to the point of discharge into the public network.

2.7	McCloy Consulting & Robert Bray Associates (2018) Lincolnshire County Council Sustainable Drainage Design & Evaluation Guide
2.7.1	The guide ⁵ links SuDS design with planning requirements, following the standard design stages: concept, outline, and detailed design. It promotes integrating SuDS within landscape and building design to enhance amenity, reduce costs, and simplify maintenance, while supporting effective consultation and high-quality outcomes.
2.8	South East Lincolnshire (2020) Local Plan Design Guide Supplementary Planning Document (SPD)
2.8.1	The South East Lincolnshire Local Plan (SELLP) was adopted on 8 March 2019 by a joint committee made up of South Holland, and other local councils, who worked together to produce a single plan for the area.

3.0 PLANNING APPROVAL HISTORY

3.1	South Holland District Council Planning Portal
3.1.1	Reference H02-0505-21 - Use of land for touring caravans without limitation on the number of caravans for 12 months a year, except that this use shall not extend to cover the permanent residential occupation of any caravans on site, nor the standing of any static mobile homes. Colliers has reviewed the information submitted under planning reference H02-0505-21; however, no drainage-related documentation were identified in relation to the approved development.
3.1.2	There are other planning applications on South Holland District Council planning portal although not of relevance.
3.1.3	There is an extant permission for 33 touring caravans which has been adopted as the baseline scenario for this proposed development.

4.0 SITE SETTING

4.1	Site Location
4.1.1	The Site is centred approximately at National Grid Reference: 525161, 310836 and extends to approximately 0.55Ha. A Site location plan is provided as Figure 1, in Appendix 1.
4.1.2	The Site is located on James Road in Crowland, Peterborough and is surrounded by agricultural use.
4.1.3	The Site is situated approximately 1km to the northeast of Crowland town centre.

⁵ Lincolnshire County Council Sustainable Drainage Design & Evaluation Guide
<https://www.lincolnshire.gov.uk/downloads/file/10388/lcc-suds-design-evaluation-guide>

4.2	Site Composition
4.2.1	The Site is currently used within a commercial capacity as a Site for the use of touring caravans. The Site currently has permission for 33 touring caravans.
4.2.2	The ground surface is predominantly gravel and hardcore, with bricks and kerbs delineating individual pitches and internal access roads. The Site benefits from a central access road which runs through the centre of the Site and provides access to James Road, located to the north.
4.2.3	The Site is bounded to the east by a row of mature trees, while new soft landscaping (comprising young shrubs) has been established on a small embankment along the western and southern boundaries.
4.2.4	All touring caravans and occupants currently use a toilet block, which is also used to empty the foul storage systems within the touring caravans. This is inspected and emptied regularly and there were no obvious odours or issues reported by those occupants currently using the site.
4.2.5	The Site benefits from an established foul drainage network. This includes a Marsh Shallow Ensign Ultra and Standard Package Treatment Plant (PTP), discharging to a drainage ditch to the east. Although the PTP is not yet connected to a power supply, it is assumed the necessary discharge consent has been obtained from the relevant statutory authority, understood to be the North Level Internal Drainage Board (IDB).
4.2.6	Inspection chambers associated with the foul drainage system were observed within the central area of the Site. Lateral connections have also been installed within individual pitches to facilitate future connections from static caravans.
4.3	Ground and Built Structure Elevations
4.3.1	Colliers have created a LiDAR DTM (2022) map for the Site (Figure 2), this is based on EA elevation data obtained for the Site to a 1 m resolution with a vertical accuracy of $\pm 0.15\text{m}$. It is known that the Site has changed bathymetrically since the production of the LiDAR (2022) data.
4.3.2	Figure 2 indicates the general ground levels on the Site range from 1.10 metres Above Ordnance Datum (mAOD) along the southern and eastern boundaries to 2.49 mAOD within the north of the Site, with the topography remaining relatively level across the Site, except for a raised area along the southern boundary at 2.40mAOD.
4.3.3	A topographic survey of the Site is included within Green Planning drawing 20_1141D Wayside – Site Plan. This reflects current ground levels at the time of issue (06/02/2025), incorporating works undertaken on Site, and is therefore considered representative of the most up-to-date Site conditions.
4.3.4	The topographic survey confirms the access to James Road within the north of the Site has an elevation of 2.50mAOD. Elevation on-Site falls in a southeast direction with elevations across the Site remaining generally level between 1.70mAOD and 1.60mAOD.
4.3.5	The lowest ground level within the area proposed for residential static caravan plots is 1.60mAOD.

4.3.6	The topographic survey also confirms that new young shrub planting has been established along the western and southern boundaries, positioned atop a small, continuous raised embankment with an elevation of approximately 2.5 mAOD along its length.
4.4	Existing and Proposed Site Composition
4.4.1	The Site currently benefits from permission for 33 touring caravans.
4.4.2	The proposed development comprises the siting of 19 residential static caravans and 8 touring caravans for residential occupation, alongside associated landscaping and an overall reduction in hardstanding.
4.4.3	Groundworks, installation of the drainage system, and redevelopment of the Site have been undertaken. A high-level overview of the current Site layout is provided within the Site Notes and Photographs included in the Appendix 2. The existing Site plans are included within Appendix 3.
4.4.4	The proposed scheme would result in a lower number of Site occupants, thereby presenting a reduced risk to life when compared to the current lawful Site arrangement. Site plans are included within Appendix 4.
4.4.5	Although the lawful development restricts occupation of touring caravans to holiday use, there is no effective mechanism preventing continuous year-round occupation. In practice, this limits any meaningful distinction between holiday and permanent residency, resulting in a baseline level of flood risk exposure comparable to a quasi-permanent residential use. Accordingly, it is considered that the existing use sits between 'More Vulnerable' and 'Highly Vulnerable' classifications under Annex 3 of the NPPF (2025) but is more appropriately defined as 'Highly Vulnerable' for assessment purposes.
4.4.6	Furthermore, the proposed development would reduce the total number of units on Site compared to the extant lawful use, thereby lowering the number of occupants exposed to flood risk. On this basis, it can be concluded that the proposed scheme would reduce the potential risk to life and represent an improvement in flood risk terms when compared to the existing baseline scenario.
4.5	Hydrological Features and Relevant Infrastructure
4.5.1	According to Ordnance Survey (OS) mapping (Figure 3), there are numerous surface water features within 500m of the Site. • There is a drainage ditch located adjacent to the eastern and southern boundaries of the Site; • There are two drainage ditches that run parallel to James Road at least 5 m from the northern Site boundary; • A network of drainage ditches surround the Site and run along the boundaries of fields nearby; • The North Level IDB interactive mapping⁶ confirms Coulton's Drain is located approximately 145m to the south of the Site; and • The River Welland flows in a northeast direction approximately 2km to the west of the Site and New River located approximately 1.5km to the west.

⁶ North Level IDB Interactive Mapping <https://www.northlevelidb.org/about/district-map/>

4.5.2	All drainage ditches near the Site were dry at the time of inspection. No headwalls or culverts were observed within the ditch adjacent to the Site, although some may have been obscured by vegetation.
4.5.3	Notable features include a culvert beneath a field access on the northern side of James Road opposite the Site entrance, and a culvert outfall on the southern side of James Road approximately 0.5km south-west of the Site.
4.5.4	Please refer to Appendix 2 for Site walkover notes and photographs.
4.5.5	There is potential for riparian responsibilities ⁷ associated with the drainage ditches within the vicinity of the Site. Further information is available online; however, it is recommended that the Internal Drainage Board (IDB) is consulted to confirm ownership and maintenance responsibilities.
4.6	Flood Defences
4.6.1	Colliers contacted the Environment Agency (EA), with correspondence included within the Appendix 6. The EA confirmed that the River Welland is defended by existing flood defences.
4.6.2	The EA's flood defence map (Figure 4) confirms flood defences have been identified along the River Welland and the New River, located approximately 2.1km and 1.1km to the west, respectively. Both watercourses are bordered by embankments that provide a standard of protection against a 1 in 100 year flood event. The EA confirm the Site also benefits from the Crowland-Cowbit Washes and embankment.
4.6.3	The Environment Agency's Asset Information Management System (AIMS) dataset (2024) identifies a number of flood defence assets near the Site. • The Crowland–Cowbit Washes Barrier Bank (Asset IDs: 503791, 125084 and 125086), located approximately 1.1 km to the west, has a crest level of up to 5.76 mAOD and provides a standard of protection up to the 1 in 100 year event. • The Crowland–Cowbit Washes Cradge Bank (Asset IDs: 132296-8 and 510051), located approximately 2 km west, has a crest level of up to 5.36 mAOD and also offers protection up to the 1 in 100 year event.
4.6.4	These earth embankments operate in conjunction with an upstream flood storage area covering approximately 9.60 km ² of agricultural land, collectively contributing to flood risk management in the wider area.
4.6.5	Figure 4 confirms, the Site and surrounding area are entirely located within a zone identified as benefiting from a reduction in risk of flooding from rivers and the sea, due to the presence of existing flood defences.
4.6.6	Additionally, the North Level Internal Drainage Board (IDB) ⁸ has confirmed that the network of drainage ditches within the vicinity of the Site discharges to the River Welland via the Postland Pumping Station.

⁷ IDB Riparian Responsibilities <https://www.northlevelidb.org/wp-content/uploads/2024/02/riparian-leaflet-Lincs-County-Council.pdf>

⁸ IDB Map <https://www.northlevelidb.org/about/district-map/>

4.7 Geology

4.7.1 From a review of the British Geological Survey (BGS) mapping (Figure 5) indicates the northern c. 50% of the Site area is underlain by superficial deposits consisting of Abbey Sand and Gravel Member (ABSG). The remaining c. 50% of the Site area is underlain by the Tidal flat deposits, 1 (TFD1), which comprises clay and silt (BGS, 2025).

4.7.2 Bedrock geology consists of the Oxford Clay Formation (Figure 6).

4.7.3 A review of the BGS mapping records has identified a third party borehole (BGS Ref. TF21SW44) situated some 500m west of the Site. A summary of the ground conditions is presented below.

4.7.4 **Table 3. Ground Conditions**

Depth From (m bgl)	Depth To (m bgl)	Soil Type
Ground Level	0.60	Topsoil (sandy clay)
0.60	3.30	River Terrace Deposits – clayey sandy gravel
3.30	5.30	Boulder Clay (firm to stiff clay with chalk clasts)
5.30	7.00+	Oxford Clay (indurated clay)

4.7.5 Groundwater was struck at approximately 1.5mbgl.

4.8 Hydrogeology

4.8.1 Abbey Sand and Gravel Member is classified by the EA as a Secondary (A) Aquifer, which indicates it is likely to comprise permeable layers capable of supporting water supply at a local rather than strategic scale. The Tidal flat deposits are classified by the EA as Unproductive Strata, which indicates it is likely to have a low permeability and offer negligible water supply.

4.8.2 **Table 4. Aquifer Designation & Permeability**

Formation	Aquifer Designation	Permeability
Superficial: Abbey Sand and Gravel Member	Secondary (A) Aquifer	Geology is likely to comprise permeable layers capable of supporting water supply at a local rather than strategic scale.
Superficial: Tidal flat deposits	Unproductive Strata	Geology is likely to have a low permeability and offer negligible water supply.
Bedrock: Oxford Clay Formation	Unproductive Strata	Geology is likely to have a low permeability and offer negligible water supply.

4.8.3	The Site is not situated within a groundwater Source Protection Zone.
4.9	Site Walkover
4.9.1	A walkover of the Site and surrounding area was undertaken on the 12 May 2026 by Jacob Banks. A summary of the findings is included below, with further detail available from other sections of the report, with photographs and a walkover notes included in Appendix 2.
4.9.2	The Site is currently developed as a caravan Site with multiple pitches, surfaced mainly with gravel and hardcore, and defined by kerbs, bricks and internal access roads connected to James Road.
4.9.3	The Site is served by a foul drainage network connected to a package treatment plant (PTP), which is not yet operational pending power connection. Inspection chambers and lateral connections are installed across the Site to accommodate future static caravan connections.
4.9.4	There was a dry drainage ditch located adjacent to the eastern and southern boundary of the Site. All other ditches within the vicinity were also reported as dry during the Site visit.

5.0 DEVELOPMENT FLOOD RISK

	A comprehensive assessment of present day and future flood risk to the Site both prior to and post development has been undertaken using the latest publicly available data and correspondence with relevant private third parties as appropriate.
5.1	Historical Flood Events
5.1.1	The Environment Agency's Historic Flood Map (Figure 7), together with the Strategic Flood Risk Assessment (South East Lincolnshire Joint Strategic Planning Committee, 2017), indicates that the Site has previously been affected by flooding.
5.1.2	Fluvial flooding occurred in March 1947, largely attributed to the absence of formal flood defences along the River Welland at that time. Since this event, extensive river management and flood defence improvements have been implemented, which are expected to significantly reduce the likelihood of a flood of a comparable scale occurring in the future.
5.2	River (Fluvial) Flooding
5.2.1	The Site has been identified as at risk from fluvial flooding.
5.2.2	Fluvial flooding occurs in the event of a watercourse's channel capacity becoming exceeded and overtopping of the riverbank and/or flood defences, typically as a result of hydraulic overloading via heavy rainfall or snow melt.

5.3	Baseline fluvial Flood Risk
5.3.1	According to the EA's Flood Map for Planning (Figure 8), the entire Site is located within fluvial Flood Zone 3 and is therefore classified as having a High probability of fluvial flooding from the nearby River Welland.
5.3.2	As defined in the NPPF (2025), without accounting for the presence of any flood defences, land located within Flood Zone 3 is considered to have a High (>1% - fluvial) risk of flooding within any given year.
5.3.3	As such, the proposed development is classified as a 'Highly Vulnerable' land use and, in accordance with the NPPG (2025) Flood Risk Vulnerability and Flood Zone Compatibility guidance, would not normally be considered appropriate.
5.3.4	However, the original planning permission allows for 33 touring caravans, whereas the proposed development comprises 19 residential static caravans and 8 touring caravans. The Lawful Development Certificate (H02-0505-21), for the existing Site use, permits an unlimited number of touring caravans, with occupation nominally restricted to holiday use but without any effective mechanism to prevent year-round residential occupation.
5.3.5	As a result, the use is functionally comparable to quasi-permanent residential development and is considered to align most closely with a 'Highly Vulnerable' classification in accordance with Annex 3 of the NPPF.
5.3.6	As a result of the proposed development, the total number of units on Site would be reduced, and it is therefore considered that the proposed development would present a lower risk to life compared to the extant consent.
5.4	Flood Risk Including the Benefit of Defences
5.4.1	The baseline probability of flooding for a given Site indicated by the EA's Flood Map for Planning Purposes may be reduced by the presence of intervening flood defences, resulting in an 'actual' risk of flooding lower than that indicated by baseline modelling.
5.4.2	As such, the EA's 'Risk of Flooding from Rivers and Sea' mapping (Figure 9) presents the flood risk to the Site from rivers and the sea, accounting for the presence intended operation of flood defence infrastructure.
5.4.3	However, this is subject to the present condition and standard of protection of any defences and long-term maintenance/ upgrading of these defences and/or proposed defences to ensure that the current standard of protection is maintained throughout the lifetime of the development. However, the residual risk to the Site in the event of failure/ removal of these defences throughout the lifetime of the development should also be considered.
5.4.4	The majority of the Site has a low likelihood of flooding from Rivers and Sea during the present day. The north of the Site and access to James Road has a medium likelihood of flooding. The entire Site is indicated to be located within an area 'reduction in risk of flooding from rivers and sea' (Figure 4).

5.5 Model Data

5.5.1 Colliers contacted the Environment Agency (EA), with correspondence and outputs from the Welland Glen Flood Modelling Study (Mott MacDonald, 2016) included within Appendix 6.

5.5.2 As the Site is located within the EA's fluvial floodplain, modelled flood elevation data was obtained from the EA and has been used to assess flood risk and to provide recommendations for mitigation for the proposed development. Defended modelled data from the Welland Glen (2016) Modelling Study (Mott MacDonald, 2016) have been extracted from the in-channel flood level. The data is provided in Table 5 below and included with Appendix 6.

5.6 Modelled Present-Day fluvial Risk

5.6.1 The identified potential present-day risk to the Site from fluvial sources during multiple return periods has been assessed using EA Product 6 data from the Mott MacDonald, 2016 Welland Glen Mott MacDonald Modelling Study. The data is provided in Table 5 below and model outputs included with Appendix 6 and Figure 10.

5.6.2 **Table 5. Modelled Present-Day Fluvial Flood Levels (Mott MacDonald, 2016) Welland Glen Model**

Ground levels On-Site (mAOD)	Modelled Flood Levels (mAOD) at Welland Node 27778		
	1 in 20 year	1 in 100 year	1 in 1,000 year
Error! Reference source not found.	4.19	4.92	4.93
Flood depths (m)*	No Flooding	No Flooding	No Flooding
*Flood defences along the River Welland have a crest level of 5.76mAOD and therefore flows are modelled to be contained within the defences and do not affect the Site.			

5.6.3 The Mott MacDonald (2016) Welland Glen model results indicate that the Site remains free from flooding during all simulated scenarios, including the 1 in 1,000-year event under present-day conditions, as fluvial flows are contained within the River Welland flood defences.

5.6.4 The risk of flooding to the Site from EA designated Main Rivers is therefore Very Low during the present day.

5.6.5 Several drainage ditches are located in the vicinity of the Site, which are understood to be maintained by the North Level District Internal Drainage Board (IDB). Observations from the Site visit, as detailed within Appendix 2, indicate that none of the nearby ditches appear to be connected via culverts, unless such connections are obscured by significant overgrowth and were therefore not visible at the time of inspection. Notwithstanding this, a ditch along the northern side of James Road was observed to contain a culvert beneath an agricultural access point, located directly opposite the Site access.

5.6.6	Colliers contacted the IDB, with correspondence included within Appendix 7. The IDB confirmed that no detailed modelling is available to define the fluvial flood risk associated with the local drainage ditches.
5.6.7	The IDB interactive mapping IDB interactive mapping ⁹ confirms Coulton's Drain is located approximately 145m to the south. The ditch forms part of a wider network ultimately draining into the River Welland via Postland Pumping Station (PS). Post PS is located approximately 3.20km to the north of the Site.
5.6.8	The water level within the surrounding drainage ditches is dictated and regulated by the capacity of the IDB pumping stations. Postland PS has a total pump capacity of 3.61 cubic metres/second (cumecs).
5.6.9	Due to the absence of detailed modelling, a precautionary approach has been adopted, utilising the Environment Agency's Risk of Flooding from Surface Water (RoFSW) mapping as a proxy to assess potential fluvial flood risk associated with the drainage ditches.
5.6.10	The present day RoFSW (Figure 13) confirms that all flows are contained within the drainage ditches. Therefore, the risk of flooding presented by fluvial flooding during the present day is Very Low.
5.7	Modelled Future fluvial Risk
5.7.1	The EA's 2080s defended Flood Map for Planning (Figure 11) confirms that fluvial flows remain contained within the flood defences, including during the 1 in 1,000 year event, over the 100-year lifetime of the proposed development.
5.7.2	The EA's Flood risk assessments: climate change allowances guidance (Published 19 February 2016 and updated May, 2025) has been used to inform a suitable increase in peak river flows for the proposed development. The updated guidance confirms 'Highly Vulnerable' developments are required to undertake a Basic assessment approach accounting for the impacts of climate change upon the future 'design flood level'.
5.7.3	As the Site is located within the Welland Management Catchment and the proposed development is classed as 'Highly Vulnerable', where the proposed lifespan is approximately 100 years, the Central 2080's (17%) allowance has been used to determine a suitable climate change factor to apply to present day fluvial levels.
5.7.4	A flood model scenario with a 17% uplift for climate change was not included in the modelling study; however, given a 20% increase in peak flows has been produced, this will serve as a suitable proxy for the design flood event.
5.7.5	The identified potential 2080s epoch risk to the Site from fluvial sources during multiple return periods has been assessed using EA Product 6 data from the Mott MacDonald, 2016 Welland Glen Mott MacDonald Modelling Study. The data is provided in Table 6 below and model outputs included with Appendix 6 and Figure 12.

⁹ North Level IDB Interactive Mapping <https://www.northlevelidb.org/about/district-map/>

5.7.6

Table 6. Future 2115 Fluvial Flood Levels (Mott MacDonald, 2016) Welland Glen Model

Ground levels On-Site (mAOD)	Modelled Flood Levels (mAOD) at Welland Node 27778	
	1 in 100 year + 20% CC	1 in 1,000 year +20% CC
Error! Reference source not found.	4.94	4.94
Flood depths (m)*	No Flooding	No Flooding
*Flood defences along the River Welland have a crest level of 5.76mAOD and therefore flows are modelled to be contained within the defences and do not affect the Site.		

5.7.7

Again, River Welland flows are contained within the defences and therefore, there is a Very Low risk of flooding from EA designated Main Rivers.

5.7.8

The EA's 2070s epoch surface water flood map (Figure 13) has been used to assess the risk of flooding from the drainage ditches located within the vicinity of the Site during the future scenario. As the Site is located within the Welland Management Catchment and the proposed development is classed as 'Highly Vulnerable', where the proposed lifespan is approximately 100 years, the higher 2080's climate change (40%) allowance has been used to determine a suitable climate change factor.

5.7.9

Using the latest EA's 2070s epoch 1 in 100 year flood depth surface water flood map demonstrates a conservative estimate given the flow and water level within the ditches are dictated by the IDB pump capacity.

5.7.10

The mapping indicates that fluvial flows will remain contained within the drainage ditches and are unlikely to impact the Site. The future low-likelihood event (1 in 1,000 year) shows a minor flow path of shallow depth (less than 0.15 m) extending from the eastern boundary, across the southern part of the Site (depicted within Figure 14), to the southern boundary. This represents a low risk, and the proposed drainage system will intercept these flows and further reduce the risk of flooding.

5.7.11

When considering the level of risk indicated by baseline mapping, EA model data and accounting for local hydrological conditions and Site-specific context, the risk of fluvial flooding to the proposed development and impact upon normal operation of the Site during a 1 in 100 year plus 17% climate change (design) fluvial event is considered to be **Low**.

5.8

Sea (Tidal) Flooding

5.8.1

The predominant risk at the Site is from flooding from rivers, termed as fluvial flooding. The Site is located in an inland location and the risk of flooding from coastal and tidal processes are therefore considered to be **Very Low**.

5.9 Breach of Flood Defences

5.9.1 Sites that are located close to flood defences are likely to be zones where rapid inundation will occur in the event of the flood defences being overtopped or breached. A Site located close to flood defences (within 250 m) may require a more detailed FRA subject to local topography.

5.9.2 As part of the SFRA breach modelling was undertaken by Haskoning UK Ltd Consultant (2017) for the area of Crowland in a 1% AEP event. The Hazard Risk rating maps have been included within Appendix 5; all other maps can be accessed via the South Holland SFRA¹⁰.

5.9.3 **Table 7. Haskoning UK Ltd Consultant (2017) SFRA breach modelling**

Year	Modelled Flood data			
	Flooding Scenario	Maximum Flood Hazard Rating	Maximum Velocity (m/s)	Average Flood Depths from Haskoning UK Ltd (2017) Breach Mapping
Present Day	1 in 100 (1% AEP)	0.75 and 1.25 (Danger for some)	0 – 0.30	0.25 - 0.50
2115		1.25 – 2.0 (Danger for most)		0.50 – 1.0
2115		1.25 – 2.0 (Danger for most)		0.50 – 1.0*
*Maximum flood depths derived from the Royal HaskoningDHV (2017) breach modelling for the 0.1% AEP event, including the 2115 climate change scenario, have been used to inform the setting of appropriate finished floor levels (FFLs) for the proposed single-storey development as part of the flood mitigation strategy.				

5.9.4 The present day breach map indicates the maximum hazard rating for the Site is 'Danger for some' with the north and access of the Site having a 'low' hazard rating.

5.9.5 During the future 1% AEP 2115 scenario, the majority of the Site has a 'Danger for most' hazard rating with the north and access of the Site having a "Danger for some" rating.

5.9.6 "During the 0.1% AEP (2115) breach scenario, the Site is classified as 'Danger for Most', with flood depths of up to approximately 1.0m indicated across the Site.

5.9.7 The flood defences along the River Welland are maintained by the Environment Agency through an established inspection and maintenance regime. This enables the identification and rectification of any defects, ensuring that the defences continue to operate effectively and in accordance with their intended design standard over the lifetime of the development.

¹⁰ South Holland SFRA mapping <https://southeastlincslocalplan.org/article/25289/2016-Update-of-South-Holland-Strategic-Flood-Risk-Assessment>

5.9.8	Accordingly, the likelihood of failure of the River Welland flood defences is considered to be low over the development lifetime (100 years). In the event of a defence breach, the potential consequence to the existing Site is assessed as moderate, with a hazard rating of 'danger for most' during the 1% AEP (2115) flood event. On this basis, the overall risk of a defence breach is assessed as Low.
5.10	Surface Water (Pluvial) Flooding
5.10.1	Surface water flooding occurs when intense rainfall exceeds the infiltration capacity of the ground and overwhelms the drainage systems. It can occur in most locations even at higher elevations and at significant distances from river and coastal floodplains.
5.11	Present-Day Risk Pluvial Risk
5.11.1	According to the EA's Risk of Flooding from Surface Water (pluvial) flood mapping (Figure 13), the Site is currently at a Very Low risk of pluvial flooding. This equates to a <0.1% probability of pluvial flooding in any given year. There are areas of Low to High likelihood of flooding adjacent to the western and southern boundaries of the Site associated with the drainage ditches.
5.11.2	The risk of flooding from drainage ditches over the 100 year development lifetime was assessed within the fluvial section with water levels within the ditches dictated by the IDB pump capacity.
5.11.3	The SFRA does not indicate any reported incidents of historical surface water flooding within 100 m of the Site
5.11.4	According to EA's surface water flood risk map the following advisory guidance applies to the Site, in relation to flood depths: • 0.15 to 0.3 m - Flooding would: typically exceed kerb height, likely exceed the level of a damp-proof course, cause property flooding in some areas • 0.3 to 0.9 m - Flooding is likely to exceed average property threshold levels and cause internal flooding. Resilience measures are typically effective up to a water depth of 0.6 m above floor level. • >0.9 m Very likely to exceed the maximum flood depth where property-level flood resilience measures are still effective.
5.11.5	The present-day surface water flood risk to the Site is Very Low.
5.12	Future Pluvial Risk
5.12.1	Paragraph 002 of the National Planning Practice Guidance (August, 2025) requires consideration of the 1% AEP (1 in 100 year) event, including an appropriate allowance for climate change and is considered as the 'design flood event'.
5.12.2	As the Site is located within the Welland Management Catchment and the proposed development is classed as Highly Vulnerable, where the proposed lifespan is approximately 100 years, the Central (40%) allowance is required to determine a suitable climate change factor to apply to rainfall data.

5.12.3	The EA's 2070s epoch surface water risk map aligns with the 100 year lifetime of the proposed development and includes 40% climate change allowance and has therefore been used to assess the risk of flooding from surface water.
5.12.4	The EA's map (Figure 15) indicates that the majority of the Site has a very low risk of flooding with a small shallow (<0.15m deep) flow route within the south of the Site. The risk of flooding will be mitigated by the proposed drainage system.
5.12.5	There are areas of Low to High risk along the eastern and southern boundaries associated with drainage ditches although the risk presented is Low and considered a fluvial risk.
5.12.6	When considering the level of risk indicated by baseline mapping, calculated future design flood level and accounting for local hydrological conditions and Site-specific context, the risk of pluvial flooding to the proposed development during a design flood event (1 in 100 year plus 40% climate change) is considered to be Very Low.
5.13	Groundwater Flooding
5.13.1	Groundwater flooding occurs when the storage capacity of below ground aquifers is exceeded due to excessive rainfall and or high fluvial levels, resulting in the emergence of groundwater at the surface. Due to the nature and mechanisms of groundwater flooding, the period over which groundwater flooding impacts upon an affected area can be significantly longer than other sources of flooding.
5.13.2	A Site-specific assessment has been undertaken to refine the preliminary groundwater flood risk screening using detailed datasets (see Section 2), including British Geological Survey (BGS) borehole records and Environment Agency (EA) fluvial and tidal floodplain data, where available. This information has been used to develop a conceptual groundwater model for the Site. The risk rating has been further refined by considering the vulnerability of receptors, including Site occupants and the proposed layout, as well as the presence or absence of basements and buried infrastructure. In addition, nearby and on-Site surface water features, such as drainage ditches that may intercept groundwater, have been taken into account.
5.13.3	The proposed development does not include basements, and no existing basements are present on Site. This is relevant as the risk of groundwater flooding is typically higher for basements, buried infrastructure, and infiltration systems such as soakaways, which can be adversely affected by elevated groundwater levels.
5.13.4	A review of the hydrogeological conditions (Section 2) indicates that the Site is underlain by permeable superficial deposits overlying low-permeability bedrock. This geological arrangement may give rise to a perched groundwater table at the interface between the two layers. As a result, groundwater levels within the superficial deposits may respond seasonally to prolonged rainfall recharge, potentially resulting in elevated groundwater levels during wetter periods or in certain years.

5.13.5	Groundwater levels may also increase in response to elevated river levels, particularly where there is hydraulic connectivity between the superficial aquifer and nearby watercourses, including the River Welland and the New River. In such conditions, prolonged high river levels may lead to groundwater emergence, potentially bypassing flood defences even where overtopping does not occur. Future increases in peak river levels, associated with climate change, may further contribute to rises in groundwater levels in adjacent aquifers.
5.13.6	Notwithstanding the presence of an aquifer, groundwater flooding at the Site would only occur if groundwater levels were to rise to the base of the development or reach the ground surface, at which point seepage could result in overland flow and localised ponding. In this context, the surrounding drainage ditches play an important role in influencing groundwater behaviour. The ditches are located at a lower elevation than the proposed development area, meaning that groundwater is more likely to emerge within these features before reaching the Site surface. Water within the ditches would then be conveyed away from the Site and discharged to the River Welland via the existing pumped drainage network.
5.13.7	Supporting this conceptual understanding, the nearest available borehole record (ref: TF21SW44) identifies groundwater at a depth of approximately 1.5mbgl within the superficial deposits. The presence of permeable materials overlying low-permeability strata further supports the potential for perched groundwater conditions, which may locally give rise to seepage, overland flow, or spring line formation at the contact between geological units.
5.13.8	Climate change is expected to increase the frequency and intensity of extreme groundwater levels. The impact on groundwater conditions at the Site will depend on changes in rainfall recharge patterns, which remain uncertain, as well as on predicted increases in peak river levels. These factors are likely to result in regional variations in average and peak groundwater levels over time.
5.13.9	On the basis of the Site-specific assessment and the supporting hydrogeological evidence, the overall groundwater flood risk to the Site is assessed to be Low.
5.14	Flooding from Artificial Sources
5.14.1	Artificial sources of flood risk include waterbodies/ watercourses or conveyance systems that have been constructed or heavily modified by human activity, such as sewers, canals and reservoirs. As such, the flood risk from artificial sources is typically associated with breaches or operational failure of infrastructure but can also be influenced by natural hydrological processes.
5.15	Sewer Flooding
5.15.1	Clean water supply and wastewater removal infrastructure is comprised of piped networks to distribute water to and from private houses or industrial, commercial or institution establishments and other usage points. In urban areas, this represents a particular risk of flooding due to the large amount of water supply infrastructure, its condition and the density of buildings. The risks of flooding to properties from burst water mains cannot be readily assessed.

5.15.2	There is unlikely to be a public sewer network within the vicinity of the Site considering all touring caravans and occupants currently use a toilet block, which is also used to empty the foul storage systems within the touring caravans. Additionally, there is a Package Treatment Plant located to the northeast of the Site.
5.15.3	The SFRA does not include any information regarding flooding events from sewers (South East Lincolnshire Joint Strategic Planning Committee, 2017) of the Site.
5.15.4	Given the remote location of the Site, within a predominantly agricultural setting, the risk of flooding from surcharging sewers is likely to be Very Low.
5.16	Canal Flooding
5.16.1	According to Ordnance Survey (OS) mapping, there are no canals within 500 m of the Site.
5.17	Culverts and Bridges
5.17.1	Watercourses which are culverted or flow under bridges may be at an elevated risk of blockage by debris.
5.17.2	During the Site visit (Appendix 2), observations were made of the watercourse features within the vicinity of the Site. All ditches in the surrounding area were dry at the time of inspection. Only the agricultural access located along the northern side of James Road was observed to contain a culvert. No other culverts were identified within the surrounding ditches, although it is possible that some may be obscured by dense vegetation and therefore not readily visible.
5.17.3	In the unlikely event that the culvert located to the north of James Road were to surcharge, the adjacent agricultural field to the north is situated at a lower elevation than the road itself. James Road therefore acts as intervening higher ground, meaning that any exceedance flows would preferentially be directed northwards, away from the Site and its access. On this basis, the associated flood risk to the Site is considered to be low.
5.17.4	Discussions should be held with the Local authority, landowners and/or Environment Agency and IDB to ascertain the responsibility of maintenance for the infrastructure. Where no such schedule is already in effect it is recommended that an appropriate maintenance regime is put in place to maintain effective operation of the nearby culverts.
5.17.5	When considering the level of risk associated with flooding due to blockage of nearby culverts and bridges to the proposed development and associated essential infrastructure/ access and egress routes is considered to be Low .
5.18	North Level IDB
5.18.1	The Internal Drainage Board (IDB) is responsible for the maintenance of ditches and pumping stations within the area. The Postland Pumping Station, located approximately 3.2 km to the north of the Site, is assumed to be subject to regular inspection and maintenance.

5.18.2	In the event of pump failure, water levels within the ditch network may rise, potentially leading to surcharging once channel capacity is exceeded. The severity and duration of any resultant flooding would depend on the length of time the pumps remain inoperable. However, it is anticipated that the system would include alarm mechanisms, allowing for a prompt response and repair.
5.18.3	Overall, both the likelihood and consequence of pump failure are considered to be low, and therefore the residual risk associated with IDB pump failure over the lifetime of the development is also assessed as Low.
5.19	Reservoir Flooding
5.19.1	According to the EA's Risk of Flooding from Reservoir mapping the Site is at risk of flooding from reservoirs (Figure 16) (EA, 2024). The risk of reservoir flooding is related to the failure of a large reservoir (holding over 25,000 m ³ of water) and is based on the worst-case scenario. Reservoir flooding is extremely unlikely to occur (EA, 2024).
5.19.2	The Site is identified as being at risk of flooding from reservoirs under both wet day and dry day breach scenarios.
5.19.3	When considering the level of risk associated with reservoir flooding to the proposed development and associated essential infrastructure/ access and egress routes is considered to be Low .
5.19.4	The risk of flooding to the Site from all artificial sources has been considered and has been determined to be Low .

6.0 DEVELOPMENT SUITABILITY

6.1	National Policy and Guidance for Development In 'At Risk' Areas
6.1.1	The development proposals have been assessed within the context of the baseline risk profile of the Site and relevant national policy as stipulated by the NPPG (2025) and NPPF (2025) to determine the suitability of the development in principle and the requirement for further works to be undertaken to ensure the development is not contrary to the guiding principles of national planning strategy regarding flood risk.
6.2	Sequential and Exceptions Test
6.2.1	The aims of the national planning policies are achieved through application of the Sequential Test and in some cases the Exception Test, as stipulated by the NPPG (2025) and NPPF (2025).
6.2.2	Suitability of the proposed development, and whether the Sequential and Exception Tests are required, is based on the Flood Zone the Site is located within and the flood risk vulnerability classification of the existing and proposed development. Some developments may contain different elements of vulnerability, and the highest vulnerability category should be used, unless the development is considered in its component parts.

6.2.3 Where the Sequential and Exceptions Test are required, it must be demonstrated that there are no alternative reasonably available Sites at lower risk of flooding within an area agreed with the council e.g. South Holland District Council and that the location of the proposed development the sustainability benefits of the development to the community outweigh the flood risk, demonstrate that the development will be safe for its lifetime taking into account the vulnerability of its users and that it won't increase flood risk elsewhere.

6.2.4 **Table 8. Flood risk vulnerability and flood zone compatibility for new developments (taken from NPPG, 2025)**

Vulnerability Class Flood Zone	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Zone 1 – low probability	✓	✓	✓	✓	✓
Zone 2 – medium probability	✓	✓	Exception test required	✓	✓
Zone 3a - high probability	Exception test required	✓	X*	Exception test required	✓
Zone 3b –functional flood plain	Exception test required	✓	X	X	X

* As the development proposals are for a 'highly vulnerable' land use vulnerability classification in accordance with the NPPG the development should not be permitted.

6.2.5 The South East Lincolnshire Strategic Flood Risk Assessment (SFRA) (March 2017) is used to undertake the Sequential Test for flood risk in South Holland. Advice on how the Sequential Test should be applied for planning applications can be found on pages 12 and 13 of the strategic flood risk assessment

6.2.6 The SFRA states that refined hazard mapping, which incorporates climate change, must inform the Sequential Test, as areas shown to be low risk in Flood Zones may still be at risk in defended scenarios. In South Holland, which are largely within Flood Zone 3, it is therefore necessary to use the refined flood risk information (Hazard and Depth maps) to assist with the application of the Sequential Test.

6.2.7 The South East Lincolnshire Strategic Flood Risk Assessment (SFRA) (March 2017) states:
 "Replacement dwellings: Where an individual proposes to redevelop their property in an existing flood risk area the consideration of alternative sites is not likely to be a realistic option. In such instances, the Sequential Test should include a statement as to why there is no alternative available to them to develop. This simple statement will satisfy the Sequential Test provided that they:

1. Do not increase the number of bedrooms; and
2. Do not increase the number of dwellings in an area of flood risk (i.e. through the replacement of a single dwelling with an apartment block); and
3. Do not significantly increase the floor area of the building (i.e. beyond 40% of the original).

6.2.8	The site lies within Flood Zone 3a, where 'Highly Vulnerable' development would normally require the Sequential and Exception Tests. However, the extant approval already establishes a 'Highly Vulnerable' baseline use, and the proposed development would reduce both the number of units and associated occupants; therefore, the Sequential. Additionally, the test is primarily intended to guide the location of new development, and is therefore not directly applicable in this instance.
6.3	Exception Test
6.3.1	The South East Lincolnshire Strategic Flood Risk Assessment (SFRA) (March 2017) explains the implementation of the exception test.
6.3.2	For highly vulnerable development, the Exception Test requires the proposal to demonstrate that: • It provides wider sustainability benefits to the community that outweigh the flood risk (Part a); and • It will be safe for its lifetime, without increasing flood risk elsewhere and, where possible, will reduce flood risk overall (Part b). Both criteria must be satisfied and evidenced through a Site-specific Flood Risk Assessment and appropriate mitigation measures outlined within South East Lincolnshire specific Standing Advice (SA¹¹) contained within Appendix C of the SFRA. The Standing Advice should be read in conjunction with the Royal Haskoning DHV (2017) breach mapping for Crowland.
6.3.3	The section outlines that Standing Advice, provided by the Environment Agency and Local Planning Authorities. The SA guides Site-specific mitigation and supports pre-application discussions. It is used to interpret flood risk requirements for development. Additional guidance includes EA advice on preparing FRAs and best practice for flood-resilient construction to improve building performance in areas of residual flood risk.
6.4	Standing Advice South East Lincolnshire Strategic Flood Risk Assessment
6.4.1	The Standing Advice should be read in conjunction with the Royal Haskoning DHV (2017) breach mapping for Crowland. Hazard breach mapping has been included within Appendix 5.
6.4.2	The associated Standing Advice matrix indicates that, for 'highly vulnerable' development in any hazard rating (from Low to Danger for All) and/or within Flood Zone 3, the Environment Agency would object on the basis that such development is contrary to the National Planning Policy Framework (NPPF).
6.4.3	The Lawful Development Certificate (H02-0505-21) permits an unlimited number of touring caravans for year-round stationing. While occupation is formally restricted to holiday use, there is no effective mechanism in place to prevent continuous, year-round occupation. Consequently, the distinction between holiday use and permanent residential occupation is materially diminished in practice. This results in a baseline level of flood risk exposure that is broadly comparable to quasi-permanent residential use. On this basis, the existing use is considered to fall between the 'More Vulnerable' and 'Highly Vulnerable' classifications as defined in Annex 3 of the NPPF.

¹¹ South East Lincolnshire Standing Advice https://southeastlincslocalplan.org/media/24013/Appendix-C-Standing-Advice/pdf/Appendix_C_-_Standing_Advice.pdf?m=1703937390937

6.4.4	For the purposes of this assessment, it is more appropriately categorised as 'Highly Vulnerable'. This precautionary approach is also consistent with Planning Practice Guidance (PPG) on flood risk and land use vulnerability, which requires that, where a development comprises mixed uses, the highest vulnerability classification should be applied.
6.4.5	Whilst the existing and proposed developments are contrary to the NPPF and Standing Advice, this Site-specific Flood Risk Assessment provides a more detailed and proportionate evaluation of risk. The proposals comprise 19 residential static caravans and 8 touring pitches, compared to the extant permission for 33 touring caravans, thereby reducing both the intensity of use and the overall number of occupants exposed to flood risk. The reduction in occupancy and the residual nature of breach risk- given the presence and maintenance of the River Welland flood defences- are important considerations.
6.4.6	The Standing Advice does not set out a defined mitigation approach for 'highly vulnerable' development; therefore, Colliers has adopted the closest comparable guidance and applied a more precautionary, enhanced mitigation strategy to address the long-term flood risk.
6.4.7	On this basis, it is considered that the proposal should be assessed on its actual risk profile, rather than classification alone. The reduction in overall occupancy, alongside the supporting FRA and mitigation measures, provides a clear basis to conclude that the development would represent a comparable or lower risk scenario than the existing permitted use.
6.4.8	The application of the Exception Test is not considered necessary. The Exception Test requires development to demonstrate that it can be made safe for its lifetime and that it provides wider sustainability benefits.
6.4.9	In this instance, the proposed development reduces on-site flood risk, incorporates a sustainable drainage system in accordance with national and local standards, and delivers sustainable benefits to the community. These include the provision of affordable and accessible accommodation, support for local services and the economy, and a lower environmental impact compared to traditional forms of development. Therefore, the application of the exception test should not be required.
6.5	Surface Water Management
6.5.1	Plans for the management of surface water need to meet the requirements set out in either the local authority's: • Surface water management plan where available; OR • Strategic flood risk assessment.
6.5.2	They also need to meet the requirements of the approved building regulations Part H: drainage and water disposal. Read section H3 rainwater drainage.
6.5.3	Planning permission is required to use a material that can't absorb water (e.g. impermeable concrete) in a front garden larger than 5m ² .

6.6	Access and Evacuation
6.6.1	Details of emergency escape plans should be provided for any parts of a building that are below the estimated flood level.
6.6.2	Plans should show: • Single storey buildings or ground floors that don't have access to higher floors can access a space above the estimated flood level, e.g. higher ground nearby; • Occupants can leave the building if there's a flood and there's enough time for them to leave after flood warnings.
6.6.3	Lincolnshire County Council has prepared an evacuation plan for East Coast Flooding which includes signed evacuation routes.
6.7	Floor Levels
6.7.1	The following should be provided: • Average ground level of your Site • Ground level of the access road(s) next to your building • Finished floor level of the lowest room in your building
6.7.2	Finished floor levels should be a minimum of whichever is higher of 300mm above the: • Average ground level of the Site • Adjacent road level to the building • Estimated river or sea flood level
6.7.3	You should also use construction materials that have low permeability up to at least the same height as finished floor levels.
6.7.4	If you cannot raise floor levels to meet the minimum requirement, you will need to: • Raise them as much as possible • Consider moving vulnerable uses to upper floors • Include extra flood resistance and resilience measures
6.7.5	When considering the height of floor levels, you should also consider any additional requirements set out in the SFRA. Flood water can put pressure on buildings causing structural issues. If your design aims to keep out a depth of more than 600mm of water, you should get advice from a structural engineer. They will need to check the design is safe.

6.8	Extra Flood Resistance and Resilience Measures
6.8.1	Follow the guidance in this section for developments in flood risk areas where you cannot raise the finished floor levels to the required height. You should design buildings to exclude flood water where possible and to speed recovery in case water gets in.
6.8.2	Make sure your flood resilience plans for the development follow the guidance in the CIRIA Property Flood Resilience Code of Practice. Please note that the code of practice uses the term ‘recovery measures’. In this guide we use ‘resilience measures’.
6.8.3	Flooding can affect the structural stability of buildings. If your building design would exclude more than 600mm of flood water, you should get advice from a structural engineer. They will need to check the design is safe. Only use resistance measures that will not cause structural stability issues during flooding. If it is not possible to safely exclude the estimated flood level, exclude it to the structural limit then allow additional water to flow through the property.
6.8.4	The design should be appropriately flood resistant and resilient by: • Using flood resistant materials that have low permeability to at least 600mm above the estimated flood level • Making sure any doors, windows or other openings are flood resistant to at least 600mm above the estimated flood level • Using flood resilient materials (for example lime plaster) to at least 600mm above the estimated flood level • By raising all sensitive electrical equipment, wiring and sockets to at least 600mm above the estimated flood level • Making it easy for water to drain away after flooding such as installing a sump and a pump • Making sure there is access to all spaces to enable drying and cleaning • Ensuring that soil pipes are protected from back-flow such as by using non-return valves

7.0 FLOOD MITIGATION

7.1	Breach in Flood Defences Flood Mitigation Measures
7.1.1	The South East Lincolnshire Standing Advice identifies the Site (Cell D9) as being within a “Danger to Most” hazard rating, with ‘Highly Vulnerable’ development not normally appropriate within Flood Zone 3. However, the Site benefits from an extant planning permission for 33 touring caravans (Cell D6), which is also classified as “Danger to Most”, and to which the Environment Agency objects in principle in line with the NPPG and Standing Advice, thereby establishing a clear fallback baseline.
7.1.2	A precautionary, risk-based approach has therefore been adopted, applying the closest comparable Standing Advice (Cell D9, ‘More Vulnerable’ development). Reflecting the single-storey nature of the proposals, the 0.1% AEP (2115) breach scenario has been used, indicating on-Site flood depths of approximately 0.5–1.0m, noting that breach risk from the River Welland defences is considered low residual.

7.1.3	For 'More Vulnerable' development, Standing Advice requires Finished Floor Levels (FFLs) to be set 1.0m above existing ground levels, with flood-resilient construction to 300mm above predicted flood depths. Given the 'Highly Vulnerable' classification, a more conservative approach has been applied, with FFLs increased to 1.15m above ground (incorporating a 0.15m uplift than the SA requires). With a lowest ground level of 1.60mAOD, this results in minimum FFLs of 2.75mAOD and flood-resilient construction extending to 2.90mAOD.
7.1.4	This enhanced mitigation is considered to reduce risk during the 0.1% AEP (2115) event to an acceptable level and provides a comparable or improved risk profile relative to the extent permitted use.
7.2	Flood-resilient Construction Measures
7.2.1	In accordance with the Standing Advice, flood-resilient construction measures are required to extend to 0.3 m above the predicted flood depth. For this Site, the South East Lincolnshire Strategic Flood Risk Assessment breach mapping indicates a maximum flood depth of approximately 1.0 m; therefore, flood-resilient construction should be provided to a minimum height of 1.3m above ground level. Flood-resilient construction measures, using avoidance and resistance measures, is appropriate where floods are expected to last for short durations. Potential water exclusion strategies include: • Passive flood door systems; • Temporary flood barriers; • Air brick covers (manual or automatic closing); • Non-return flap valves on sewer outfalls.
7.2.2	Avoidance and resistance measures are unlikely to completely prevent floodwater entering a property, particularly during longer duration flood events. Therefore, it is recommended that the following flood resilience measures are also considered. • Flood resilient materials and designs: ○ Use of low permeability building materials up to 0.3 m such as engineering bricks (Classes A and B) or facing bricks; ○ Hard flooring and flood resilient metal staircases; ○ The use of internal lime plaster/render or where plasterboards are used these should be fitted horizontally instead of vertically and/or using moisture resistant plasterboard at lower levels; ○ Water, electricity and gas meters and electrical sockets should be located above the predicted flood level; ○ Communications wiring: wiring for telephone, TV, Internet and other services should be protected by suitable insulation in the distribution ducts to prevent damage.
7.3	Surface Water (Pluvial) Flood Mitigation Measures
7.3.1	As the Site is not identified as being at risk of pluvial flooding, no formal mitigation required beyond proposed drainage design.

7.4	Groundwater Flooding Mitigation Measures
7.4.1	As the Site is at Low risk of groundwater flooding, mitigation measures are not required.
7.5	Artificial Flooding Mitigation Measures
7.5.1	Artificial flooding occurs when the failure of infrastructure or human intervention results in flooding. Artificial sources include reservoirs, canals, water retention ponds, docks and other artificial structures such as sewers, culverts and bridges.
7.6	Sewer Flood Mitigation Measures
7.6.1	Whilst the Site has not been identified as at risk of sewer flooding, it is advised that regular maintenance of the existing on-Site drainage system including the cesspit; is undertaken to prevent blockages (e.g., clearance of silt traps and debris, remediation/ replacement of damaged pipework) and following heavy rainfall.
7.7	Canal Flooding Mitigation Measures
7.7.1	Canal has not been identified in the vicinity of the Site.
7.8	Culvert and Bridge Blockage Flooding Mitigation Measures
7.8.1	Culverts have been identified in the vicinity of the Site which may present a potential flood risk under blockage scenarios. It is anticipated that these culverts are subject to regular maintenance; however, the Internal Drainage Board (IDB) should be consulted to confirm the maintenance regime for nearby ditches, and to clarify whether responsibility lies with the IDB or with the relevant riparian landowners.
7.9	IDB Pump Failure
7.9.1	Fluvial flows within the drainage ditches surrounding the Site are controlled by the capacity of the IDB pumping network. The likelihood of pump failure is considered to be low, reflecting the assumed regular inspection and maintenance of IDB pumping infrastructure. Therefore, there is no mitigation required.
7.10	Breach in the River Welland Defences
7.10.1	Colliers contacted the Environment Agency (see Appendix 6), who confirmed that the River Welland defences in the vicinity of the Site are maintained on an annual basis. As part of this regime, the Environment Agency will identify and address any defects, ensuring the ongoing performance of the flood defence infrastructure over the lifetime of the development.
7.10.2	Accordingly, the likelihood of a breach occurring is considered to be low, as the regular inspection and maintenance of the defences reduces the risk of structural failure.

7.11	Reservoir Flood Mitigation Measures
7.11.1	According to Environment Agency data, the Site may be at risk of flooding from reservoir sources under both dry day and wet day failure scenarios. Whilst reservoir flooding could result in significant consequences, reservoirs are subject to stringent regulation and management, and therefore the likelihood of such an event occurring is considered to be very low.
7.11.2	As a result, no specific mitigation measures are proposed in relation to reservoir flooding; however, the proposed raising of finished floor levels will provide an additional level of resilience, further reducing potential flood risk to the development.
7.12	Other Flood Risk Mitigation Measures
7.12.1	As the Site is not identified as at risk from other sources, mitigation measures are not required.
7.13	Residual Flood Risk Mitigation Measures
7.13.1	The risk to the Site has been assessed from all sources of flooding and appropriate mitigation and management measures proposed to keep the users of the development safe over its lifetime. There is however a residual risk of flooding associated with the potential for failure of mitigation measures if regular maintenance and upkeep isn't undertaken. If mitigation measures are not implemented or maintained, the risk to the development will remain as the baseline risk.
7.14	Further Flood Mitigation Information
7.14.1	More information on flood resistance, resilience and water entry can be found here: • http://www.planningportal.gov.uk/uploads/br/flood_performance.pdf • www.knowyourfloodrisk.co.uk
7.15	Emergency Evacuation - Safe Access / Egress and Safe Refuge
7.15.1	Emergency evacuation to land outside of the floodplain should be provided if feasible. Where this is not possible, development in general (including basements), should have internal stair access to an area of safe refuge within the building to a level higher than the maximum likely water level. An area of safe refuge should be sufficient in size for all potential users and be reasonably accessible to the emergency services.
7.15.2	The proposed development comprises static and touring caravans, representing single-storey accommodation units. These have been designed with finished floor levels suitably raised above the 0.1% AEP (2115) breach flood level. As such, habitable areas will be positioned above the predicted flood level, thereby reducing potential risk to occupants.
7.15.3	Emergency evacuation from the development and the Site should only be undertaken in strict accordance with any evacuation plans produced for the Site, with an understanding of the flood risks at the Site including available mitigation, the vulnerability of occupants and preferred evacuation routes.

7.16	Flood Warnings & Alerts
7.16.1	The EA operates a flood warning service in all areas at risk of flooding; this is available on their website: https://www.gov.uk/check-flood-risk . The Site is located within an EA Flood Warning coverage area called 'East of Spalding and surrounding areas' reference: 307158 so is able to receive warnings (Figure 17). All warnings are also available through the EA's 24 hour Floodline Service 0345 988 1188.
7.16.2	The EA aims to issue Flood Warnings 2 hours in advance of a flood event. Flood Warnings can provide adequate time to enable protection of property and evacuation from a Site, reducing risk to life and property.
7.17	Emergency Evacuation
7.17.1	Based on the EA's Flood Zone Map the closest dry evacuation area within Flood Zone 1 and Very Low risk of river flooding is along Portland Road (c.590m west – direct measurement). It is advised that evacuation from the premises would be the preferred option in a flood event if safe to do so. It is recommended that residents prepare to evacuate as soon as an EA Flood Warning is issued in order to completely avoid flood waters.
7.17.2	Where possible, a safe access and egress route with a 'very low' hazard rating from areas within the floodplain to an area wholly outside the 1 in 100 year flood event including an allowance for climate change should be demonstrated.
7.17.3	A review of publicly available information indicates that Lincolnshire County Council, in conjunction with the Lincolnshire Resilience Forum, has prepared an East Coast Inundation Plan to manage large-scale tidal flood events. However, detailed evacuation mapping is not formally published as a standalone public document, with much of the operational planning held by emergency responders.
7.17.4	Notwithstanding this, indicative evacuation routes from the Lincolnshire coast have been identified through available GIS mapping resources ¹² , which demonstrate that defined inland evacuation corridors exist linking coastal settlements to areas of higher ground. These routes would be implemented as part of a coordinated multi-agency response during a flood event.
7.18	On-Site Refuge
7.18.1	Evacuation should be the primary action in preference; however safe refuge could be sought within the static caravans which are elevated above the future 2115 0.1% AEP flood during a breach scenario.
7.19	Other Relevant Information
7.19.1	A Flood Warning and Evacuation Plan (FWEP) is recommended, and occupants should be signed up to receive EAs Flood Alerts Warnings.
7.19.2	Registration to the Environment Agency's flood warning scheme can be done by following this link: https://www.gov.uk/sign-up-for-flood-warnings .

¹² Evacuation Routes <https://storymaps.arcgis.com/stories/58879722e3e7458ab45ac5bf921cf6d7>

7.19.3	It is recommended that main communication lines required for contacting the emergency services, electricity sockets/meters, water supply and first aid stations and supplies are not compromised by flood waters. Where possible these should all be raised above the extreme flood level during a breach scenario.
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8.0 DRAINAGE AND BUILDING REGULATIONS

8.1	Site licensing requirements
8.1.1	The Department for Communities and Local Government. Mobile Homes Act 2013 provides a best practice guide for Local Authorities on enforcement of the new site licensing regime.
8.1.2	Local authorities have powers to attach licence the following relevant conditions under section 5 of the Communities and Local Government Model Standards (2008) and Caravans Sites and Control of Development Act 1960. The Act states: • A site licence issued by a local authority in respect of any land may be so issued subject to such conditions as the authority may think it necessary or desirable to impose on the occupier of the land in the interests of persons dwelling thereon in caravans, or of any other class of persons, or of the public at large; and in particular, but without prejudice to the generality of the foregoing, a site licence may be issued subject to conditions— • (f)for securing that adequate sanitary facilities, and such other facilities, services or equipment as may be specified, are provided for the use of persons dwelling on the land in caravans and that, at all times when caravans are stationed thereon for the purposes of human habitation, any facilities and equipment so provided are properly maintained.
8.1.3	<u>HARDSTANDINGS</u> Every caravan should stand on a concrete hard-standing which should extend over the whole area occupied by the caravans placed upon it, and should project a sufficient distance outwards from its entrance or entrances to enable its occupants to enter and leave safely.
8.1.4	<u>DRAINAGE, SANITATION AND WASHING FACILITIES</u> Satisfactory provision should be made for foul drainage, either by connection to a public sewer or sewerage treatment works or by discharge to a properly constructed septic tank or cesspool approved by the local authority. Each caravan should have its own water supply and water closet. Each caravan standing should be provided with a connection to the foul drainage system; the connection should be capable of being made air-tight when not in use. Every site and every hard standing should be provided with an adequate drainage system for the complete and hygienic disposal of foul, rain and surface water from the site, buildings, caravans, roads and footpaths.

8.2	Foul Water Drainage
8.2.1	It is assumed that the site benefits from an existing licence and that the current foul drainage arrangements have been installed in accordance with its requirements. Should the Local Planning Authority require it, a new or updated site licence can be obtained to support the proposed development.
8.2.2	The presence of onsite drainage systems were confirmed observations made on a visit to the Site. These are discussed further in later sections.
8.2.3	All touring caravans and occupants currently use a toilet block, which is also used to empty the foul storage systems within the touring caravans. This is inspected and emptied regularly and there were no obvious odours or issues reported by those occupants currently using the site.
8.2.4	There is an existing foul drainage system serving the site, with individual static caravan plots connected via 150 mm diameter pipework that discharges to a buried network beneath gravel hardstanding areas. - Existing: It is assumed that touring caravans do not have services and that there is a cesspit, which is emptied regularly. - There is an existing Marsh Shallow Ensign: Ultra and Shallow Ensign: Standard Package Treatment Plant (PTP) which can serve 25 persons. The PTP is located to the northeast of the Site, which would discharge treated effluent into a drainage ditch located adjacent to the boundary. The PTP is not currently connected to power. Proposed: The proposed development will utilise the existing foul drainage arrangements; however, an upgraded package treatment plant (PTP) will be required, as the current system—designed for 25 persons—does not have sufficient capacity to serve the proposed development. This is discussed in further detail later in this section of the report.
8.2.5	The PTP has not been connected to power yet and is not in use. I found no evidence of odours or of any effluent having overflowed from the PTP manholes.
8.3	Surface water drainage
8.3.1	The current layout of the allocated static caravan plots, presently occupied by touring caravans, complies with the 6-metre spacing requirement; however, they are situated on gravel hardstanding rather than a concrete base.
8.3.2	The proposed positioning of the 19 residential static caravans and 8 touring caravans is fixed through the formal proposed plans shown in Appendix 4, the positioning of these will form part of the application for a Site licence and concrete bases will be installed beneath each static caravan, including associated drainage infrastructure.
8.4	Habitat Regulations
8.4.1	The Conservation of Habitats and Species Regulations 2017 (as amended) require that new development projects likely to have a significant effect on a designated "Habitats Site" (Special Areas of Conservation or Special Protection Areas) must undergo a Habitats Regulations Assessment (HRA).

8.4.2	The Site is located within the Welland catchment.
8.4.3	The Site is not located within or close to any sensitive environmental receptors such as Special Protected Areas (SPA), Special Areas of Conservation (SAC) or Special Sites of Scientific Interest (SSSI) and there are no requirements for nutrient neutrality under the Conservation of Habitats and Species Regulations 2017.
8.4.4	The proposals seek to provide the most appropriate foul and surface water drainage systems for the scale of the development, including relevant applications for site licences (if applicable), without increasing any levels of contamination.
8.4.5	In conclusion, a HRA is not required for this development as it would not have any effect, significant or otherwise on a designated Habitats Site.
8.5	Proposed Foul Water Drainage
8.5.1	There are various requirements to be met when positioning on site foul drainage systems, as detailed within the General Building Rules, Building Regulations Part H and BS6297.
8.5.2	The existing touring caravan site benefits from a toilet block, with associated shower facilities, located within the north-western part of the site. These facilities are understood to drain to a cesspit, which is likely subject to a routine emptying and maintenance regime.
8.5.3	A separate Package Treatment Plant (PTP), along with a 160 mm discharge pipe to a drainage ditch along the eastern boundary, was observed on site and is assumed to form part of an extant planning permission for 33 touring caravans.
8.5.4	If the package treatment plant (PTP) does not form part of the extant planning permission, the existing system will require approval from both the Council and the Environment Agency in accordance with site licensing requirements. It is anticipated that this could either be addressed through the current planning submission or, where additional information is required, secured via an appropriately worded planning condition.
8.5.5	<u>PTP installation and British Standard BS: 6297-1983 and 6297-2007 requirements</u> The Client have advised they have installed a Marsh Shallow Ensign: Ultra and Shallow Ensign: Standard for 25 persons to accommodate the proposed residential use of the Site, these have been checked against the requirements of the British Standards BS: 6297-1983 and 6297-2007, as follows: • <i>The tank(s) should be as far away from habitable buildings as is economically practicable. 7m is the defined distance in the Building Regulations Part H (2015);</i> - o The tank is located to the north-east of the site boundary. An existing touring caravan is currently situated in close proximity; however, this is not considered a constraint, as it can be relocated if it falls within the required 7 m stand-off buffer.

	• <i>The direction of the prevailing wind should be considered in relation to any properties.</i> - o In Britain the prevailing wind is from the South West, which brings warm, moist air from the Atlantic Ocean. The wind direction is therefore predominantly blown in a north, north-westerly and north-easterly direction, away from the residential units and towards James Road and agricultural land use. • <i>Allow for sludge emptying vehicle's which have a maximum reach of 30 metres, but the depth from the ground level to the bottom of the tank must not exceed 5 metres.</i> - o Any sludge emptying vehicle can access the unit directly from the adjacent yard area. The PTP manufacturer's brochure indicates that the 25-person unit has a relatively shallow installation depth of approximately 1.6m, as detailed in the specification (Appendix 8). • <i>An inspection chamber should be installed upstream of the Treatment Plant or Cesspool.</i> - o A manhole is located upstream of the Treatment Plant, to ensure it can be inspected and emptied.
8.5.6	<u>2015 Building Regulations</u> The following building regulations are applicable to the Site in this instance, just noting an observation. <i>"Sewers (i.e. a drain serving more than one property) should normally have a minimum diameter or 100mm when serving no more than 10 dwellings. Sewers serving more than 10 dwellings should normally have a minimum diameter of 150mm".</i> It was observed on the Site that all the pipes are ~150mm diameter, which would likely feed into a 150mm diameter carrier drains or larger which flow into the package treatment plant. All pipework was buried beneath the ground to prevent interaction with site users and manholes spaced regularly to allow for easy inspection. Refer to Appendix 8 for indicative foul layout.
8.5.7	<u>Site Licensing</u> The South Holland District Council licensing pages indicate conditions applicable to any particular site may vary, but will be based on model conditions established by the Mobile Homes Act (2013). In respect of drainage, the Act states: <i>"A site licence issued by a local authority in respect of any land may be so issued subject to such conditions as the authority may think it necessary or desirable to impose on the occupier of the land in the interests of persons dwelling thereon in caravans, or of any other class of persons, or of the public at large; and in particular, but without prejudice to the generality of the foregoing, a site licence may be issued subject to conditions—</i> <i>(f)for securing that adequate sanitary facilities, and such other facilities, services or equipment as may be specified, are provided for the use of persons dwelling on the land in caravans and that, at all times when caravans are stationed thereon for the purposes of human habitation, any facilities and equipment so provided are properly maintained."</i> The long-term maintenance of the current foul drainage system on the Site will include regular inspection and emptying of any sludge by tanker, as and when required as well as the maintenance of the PTP in line with manufacturers guidance.

8.6	Proposed Foul Water Drainage
8.6.1	To ensure the appropriate management of foul water, any proposed drainage systems will be designed in accordance with the latest site licence requirements (to be obtained from the relevant authority, if not already in place) and Building Regulations Part H (2015). The final drainage proposals will be submitted to the Council for formal approval.
8.6.2	A single Package Treatment Plant (PTP) and discharge into the drainage ditch located to the east to drain all 19 residential units and 8 touring caravans the Site. The in-situ Marsh Shallow Ensign: Ultra and Shallow Ensign: Standard Package Treatment Plant (PTP) 25 persons has been designed and it is assumed it has been installed in accordance with the Building Regulations Part H and BS6297 and with due consideration of the requirements to achieve acceptable very low phosphate levels.
8.6.3	<u>Package Treatment Plant (PTP)</u> The foul water flows from the proposed caravan park are and will be, treated by means of a sewage Package Treatment Plant (PTP), then discharged into the drainage ditch located to the east, which is already in-situ. The existing PTP designed for an equivalent population of 25 people is not sufficient to treat the flows from the proposed development, in line with calculations undertaken in line with British Water Flows and Loads 4. The PTP includes the use of ‘best available technology’ to naturally achieve a very low level of Phosphate at discharge. The Marsh PTP specifications are included in Appendix 8 of this report. It is assumed the PTP has been installed in line with British Standard BS EN 12255-1:2024 - TC - Wastewater treatment plants - General design and construction principles (November, 2024). The site manager will be responsible for the management and maintenance of the foul drainage system serving the site.
8.6.4	<u>Discharge to drainage ditch</u> It is assumed that all necessary permits and licences required for the Package Treatment Plant (PTP) to discharge into the drainage ditch along the eastern boundary have been obtained from the relevant statutory authority, given that the Site benefits from an extant planning approval for 33 touring caravans. In this instance, the relevant authority is understood to be the North Level Internal Drainage Board (IDB). Should the necessary permissions not have been obtained, these can be secured at a later date prior to occupation, connection of the PTP to the power supply, and discharge to the drainage network, subject to approval from the relevant authority. British Water Flows and Loads (2013) has been used to confirm the daily loadings from the extant approved development, the current (enforced) development and the proposed development.

8.6.5	<u>Extant approved development</u> Each two-bedroom residential dwelling can accommodate up to 4 persons (P) per dwelling, of which there are 33 approved proposed dwellings (132 P). The flows and loads document confirms that an appropriate reduction factor based on 13-25 P is 0.9, which has been applied this scenario. This has been calculated to be 118.8 P. In order to calculate the daily output from the total this number should be multiplied by the domestic flow loading for mobile home type caravans with full services, which is 150 litres (0.15m³). This equates to an output volume from the static caravans of 17.82 m³.
8.6.6	<u>Proposed Foul Flows and Loads Calculations</u>
8.6.7	Flows and Loads confirms each two-bedroom residential dwelling can accommodate up to 4 persons (P) per dwelling of which there are 19 proposed dwellings (76 P). The flows and loads document confirms that an appropriate reduction factor based on 26-50 dwellings is 0.8, which has been applied this scenario. This has been calculated to be 60.8 P. In order to calculate the daily output from the total this number should be multiplied by the domestic flow loading for Mobile home type caravans with full services, which is 150 litres (0.15 m3). This equates to an output volume from the static caravans of 9.12m³.
8.6.8	Eight touring caravans are also proposed. These units are assumed to rely on communal washing facilities located separately from the static units and are therefore not expected to generate additional wastewater loading beyond that already accounted for.
8.6.9	However, for completeness we have included flows and loads- two-bedroom residential dwelling can accommodate up to 4 persons (P) per dwelling, of which there are 8 proposed touring caravans proposed dwellings (32 P). The flows and loads document confirms that an appropriate reduction factor based on 13-25 P is 0.9, which has been applied this scenario. This has been calculated to be 28.8 P. In order to calculate the daily output from the total this number should be multiplied by the domestic flow loading for mobile home type caravans with full services, which is 150 litres (0.15m3). This equates to an output volume from the static caravans of 4.32m³.
8.6.10	The loading figures quoted above assume that wastes from chemical toilets (such as those which are from the touring caravans or excess flows from laundry) do not enter the system as they must not be allowed to enter into the treatment plant.
8.6.11	The total loading from the touring caravans has not been explicitly calculated, as daily flows are likely to be variable and seasonal in nature, typically occurring upon the return of each touring caravan, and are therefore considered to be relatively negligible. It is assumed that an existing facility is available, given that the Site operates as an active holiday park. Where such provision is not available, an appropriate wash-up facility and cesspool tank could be installed within the drainage area located to the north-east of the Site, in order to accommodate minor flows from touring caravans and any excess flows for separate disposal.
8.6.12	A new package treatment plant (PTP) with sufficient capacity to serve approximately 76 occupants associated with the 19 static caravans would be required (9.12m³), with the proposed eight touring caravans continuing to drain via the existing cesspit and associated emptying regime.

8.6.13	However, to provide a more sustainable and robust drainage solution for the entire site, it is recommended that a single PTP be designed to accommodate the full anticipated occupancy of up to 108 persons (based on 19 static caravans and 8 touring caravans operating at full capacity). This would require total load of 13.44m³ .
8.7	Proposed Surface Water Drainage
8.7.1	<u>Existing Scenario</u> Based on site observations (refer to Appendix 2 and 3), surface water runoff is managed primarily through infiltration across the Site: • Permeable landscaped areas allow surface water to drain directly into the ground; • The central access highway, constructed of gravel, facilitates natural infiltration; • Caravan pitch areas are of a similar permeable gravel composition and similarly enable runoff to infiltrate; • There are currently no formal piped surface water drainage systems on site; • Runoff from existing touring caravan roofs is discharged onto the adjacent ground surface, where gravel hardstanding provides additional attenuation and infiltration.
8.7.2	<u>Approved Surface Water Drainage</u> No relevant drainage plans were identified on South Holland District Council Planning Portal. However, the Site has an extant planning permission for 33 touring caravans.
8.7.3	<u>2010 Building Regulations (2015 Edition)</u> Any system which carries rainwater from the roof of the building to a sewer, soakaway, watercourse, or some other suitable rainwater outfall shall be adequate. It was observed during the site visit that all rainfall runoff would drain onto the loosely bound gravel surface and drain into the underlying permeable gravel substrate, which is an adequate source control and water management process.
8.7.4	<u>Site licensing</u> A total of 19 pitches are proposed (including additional 8 touring caravans) stated on plan (20_1141D Rev P02 Wayside - Site Plan Proposed Site Plan (17/04/2026)) it is assumed that each of these will require a concrete base under the Site licensing requirements.
8.7.5	<u>Hard Standings</u> <i>"Every caravan should stand on a concrete hard-standing which should extend over the whole area occupied by the caravans placed upon it, and should project a sufficient distance outwards from its entrance or entrances to enable its occupants to enter and leave safely."</i>

8.7.6 Drainage, Sanitation And Washing Facilities

‘Every site and every hard standing should be provided with an adequate drainage system for the complete and hygienic disposal of foul, rain and surface water from the site, buildings, caravans, roads and footpaths.’

The drainage of rainfall and surface water runoff from the additional areas of hardstanding will be provided in line with the latest site licensing requirements.

8.8 **Surface water runoff calculations**

8.8.1 In order to ensure there is no increase in the runoff rate and volume, as a result of the current and proposed development’s increases in impermeable area associated with roof, the following calculations have been undertaken to determine the differences in the rate and volume of runoff to determine an appropriate size of drainage system. Greenfield calculations are contained within Appendix 9, with extant vs proposed surface water calculations included within Appendix 10.

8.8.2 In the absence of detailed plans for the extant planning permission, existing hardstanding areas have been estimated based on the proposed layout and applied accordingly to enable a comparative assessment.

8.8.3 The proposed development is for 19 residential static caravans and 8 touring caravans; the lifespan of the development is 100 years and requirements for climate change should allow up to the 1% AEP upper end allowance. As the Site is located within the Welland Management Catchment the following peak rainfall allowances are to be applied.

8.8.4 **Table 9. Error! Reference source not found. Management Catchment Climate Change Rainfall Allowances**

Welland Management Catchment	3.3% AEP Rainfall Event		1% AEP Rainfall Event	
	2050s	2070s	2050s	2070s
Central	20%	25%	20%	25%
Upper End	35%	35%	40%	40%

8.8.5 The following measurements are applicable to the current and proposed site layouts.

8.8.6

Table 10. Pre-development, current development and Proposed development permeable and impermeable areas

Coverage	Pre-development (greenfield)	Extant Planning*	Proposed Development
Permeable area (m ²)	5,526 m ²	Permeable gravel and unfinished surface 4,915.5	Permeable gravel and unfinished surface [4,599]
Impermeable area (m ²)	0 m ²	Touring caravan spaces 33 x 18.5m ² = 610.50 m ² [610.50 m²]	Proposed static caravans 19 x 41m ² = 779m ² Proposed touring caravan spaces 8 x 18.5m ² = 148m ² [927m²]
Total area (m ²)	5,526	5,526	5,526
*In the absence of detailed plans for the extant planning permission, existing hardstanding areas have been estimated based on the proposed layout and applied accordingly to enable a comparative assessment.			

8.8.7

Runoff rates and volumes have been calculated for the current and proposed development roof areas, where the concrete hardstanding surrounding static and touring caravans will need to be drained formally. The calculations include a 10% increase in permeable area to account for urban creep.

8.8.8

An allowance of 40% has been used to represent a maximum increase in climate change, in line with the latest UKCP18 requirements as shown within the EA's rainfall runoff climate change guidance for a development lifespan of up to 100 years.

8.8.9

Colliers have not received or found the extant planning designs and have therefore used the 'touring caravan' areas indicated within the proposed plans as an appropriate basis for comparison.

8.8.10

Table 11. PRE-DEVELOPED (GREENFIELD) AND CURRENT (EXTANT) SURFACE WATER RUNOFF RATES

Rainfall event	Greenfield run-off rates (l/s)	Existing run-off rates (l/s)	Potential run-off rates (l/s)	Potential minus existing (l/s)
QBAR	0.62	0.62	2.42	1.80
6 hour 1 in 1 year	0.53	0.53	2.25	1.72
6 hour 1 in 10 year	1.01	1.01	3.99	2.98
6 hour 1 in 30 year	1.43	1.43	5.23	3.80
6 hour 1 in 100 year	1.93	1.93	7.07	5.13
6 hour 1 in 100 year + 40% allowance for Climate Change	1.99	1.99	6.80	4.81

8.8.11

Table 12. PRE-DEVELOPED (GREENFIELD) AND CURRENT (EXTANT) SURFACE WATER RUNOFF VOLUMES

Rainfall event	Greenfield run-off volume (m³)	Existing run-off volume (m³)	Potential run-off volume (m³)	Potential minus existing (m³)
QBAR	38.94	38.94	52.36	13.42
6 hour 1 in 1 year	36.13	36.13	48.59	12.45
6 hour 1 in 10 year	64.73	64.73	86.20	21.48
6 hour 1 in 30 year	84.09	84.09	113.07	28.98
6 hour 1 in 100 year	113.52	113.52	152.64	39.13
6 hour 1 in 100 year + 40% allowance for Climate Change	109.24	109.24	146.89	37.65

8.8.12

Table 13. PRE-DEVELOPED (GREENFIELD) AND PROPOSED SURFACE WATER RUNOFF RATES

Rainfall event	Greenfield run-off rates (l/s)	Existing run-off rates (l/s)	Potential run-off rates (l/s)	Potential minus existing (l/s)
QBAR	0.62	0.62	2.75	2.12
6 hour 1 in 1 year	0.53	0.53	2.55	2.02
6 hour 1 in 10 year	1.01	1.01	4.51	3.50
6 hour 1 in 30 year	1.43	1.43	5.93	4.50
6 hour 1 in 100 year	1.93	1.93	8.01	6.07
6 hour 1 in 100 year + 40% allowance for Climate Change	1.99	1.99	7.70	5.72

8.8.13

Table 14. PRE-DEVELOPED (GREENFIELD) AND PROPOSED SURFACE WATER RUNOFF VOLUMES

Rainfall event	Greenfield run-off volume (m3)	Existing run-off volume (m3)	Potential run-off volume (m3)	Potential minus existing (m3)
QBAR	38.94	38.94	59.32	20.38
6 hour 1 in 1 year	36.13	36.13	55.04	18.91
6 hour 1 in 10 year	64.73	64.73	97.34	32.61
6 hour 1 in 30 year	84.09	84.09	128.09	44.01
6 hour 1 in 100 year	113.52	113.52	172.93	59.41
6 hour 1 in 100 year + 40% allowance for Climate Change	109.24	109.24	166.41	57.17

8.8.14	Proposed surface water drainage
8.8.15	The principle of using loosely bound gravel to attenuate and infiltrate surface water runoff at the Site is proven by the extant approval, which have specified loosely bound gravel surfacing and permeable Type 3 gravel substrate to attenuate and discharge surface water drainage into the ground. In effect this type of system is acting as what we would call “Permeable paving” in SuDS terms, which includes and attenuating porous substrate.
8.8.16	Permeable paving provides both attenuation storage of surface runoff to release it slowly back into the ground, but it also provides significant filtration benefits, as shown within the indicative pollution and mitigation tables 26.2 and 26.4 of the CIRIA SuDS Manual (2015). These tables confirm that the proposed permeable substrate and surface would be more than adequate mitigation for the pollution indices specified.
8.8.17	In order to calculate the appropriate depth of gravel substrate by which to attenuate runoff, before it infiltrates to ground, the infiltration rate is required, based on the anticipated underlying geological conditions, as there are no site-specific ground investigations available at this time.
8.8.18	The calculation to confirm an appropriate depth for the permeable gravel substrate beneath the loosely bound surface gravel, does include the entire permeable surface being drained, as well as the impermeable developed areas. Infiltration calculations are included within Appendix 10.
8.8.19	Infiltration testing has not been undertaken on Site; therefore, a conservative worst-case infiltration rate of 1×10^{-6} m/s has been adopted for assessment purposes. This value has been derived from Table 25.1 of the SuDS Manual for ‘very poor infiltration media’ and is considered representative of the anticipated ground conditions.

8.8.20

Table 15. Table 25.1 of the SuDS Manual

TABLE 25.1 Typical infiltration coefficients based on soil texture (after Bettess, 1996)		
Soil type/texture	ISO 14688-1 description (after Blake, 2010)	Typical infiltration coefficients (m/s)
Good infiltration media		
• gravel	Sandy GRAVEL	$3 \times 10^{-4} - 3 \times 10^{-2}$
• sand	Slightly silty slightly clayey SAND	$1 \times 10^{-5} - 5 \times 10^{-3}$
• loamy sand	Silty slightly clayey SAND	$1 \times 10^{-4} - 3 \times 10^{-3}$
• sandy loam	Silty clayey SAND	$1 \times 10^{-7} - 1 \times 10^{-5}$
Poor infiltration media		
• loam	Very silty clayey SAND	$1 \times 10^{-7} - 5 \times 10^{-6}$
• silt loam	Very sandy clayey SILT	$1 \times 10^{-7} - 1 \times 10^{-6}$
• chalk (structureless)	N/A	$3 \times 10^{-6} - 3 \times 10^{-4}$
• sandy clay loam	Very clayey silty SAND	$3 \times 10^{-10} - 3 \times 10^{-7}$
Very poor infiltration media		
• silty clay loam	–	$1 \times 10^{-8} - 1 \times 10^{-4}$
• clay	–	$< 3 \times 10^{-8}$
• till	Can be any texture of soil described above	$3 \times 10^{-9} - 3 \times 10^{-4}$
Other		
• rock* (note mass infiltration capacity will depend on the type of rock and the extent and nature of discontinuities and any infill)	N/A	$3 \times 10^{-9} - 3 \times 10^{-3}$

8.8.21

The soil classification is informed by BGS 1:50,000 scale superficial deposit mapping, which identifies the Abbey Sand and Gravel Member and tidal flat deposits, together with LandIS Soilscales¹³ data describing loamy and sandy soils with naturally high groundwater and a peaty surface, indicating the presence of naturally wet soils beneath the Site.

8.8.22

The anticipated geological conditions indicate the rate of infiltration through the underlying superficial geology is likely to be relatively low, but is still likely to be appropriate for the blanket infiltration proposed by the permeable surfacing. The latter worst-case rate has been used to ensure there is some freeboard built in.

8.8.23

Based on the lowest acceptable infiltration rate of 1×10^{-6} m/s, calculations shown in Appendix 10 of this report confirm a substrate depth of **346mm** would be appropriate to attenuate all runoff in a 1 in 100 year (1% annual probability) storm plus a 40% allowance for climate change and infiltrate to half drain-down within 14.4 hours.

8.8.24

This is more than adequate and in line with the Clients proposals for the loose bound gravel surfacing and Type 3 porous gravel substrate. The site is relatively flat; therefore, infiltration is expected to occur uniformly across the site and there is no requirement for check dams.

8.8.25

In addition, SuDS good practice requires that the invert level of infiltration features maintains a minimum separation of 1.0 m above the groundwater table. Borehole record (BGS Ref. TF21SW44) indicate that groundwater was encountered at approximately 1.5 m below ground level (bgl). Accordingly, the base of the gravel layer is estimated to be approximately 1.1 m above the groundwater table, demonstrating compliance with this requirement.

¹³ LandIS Soilscales <https://www.landis.org.uk/soilscales/>

8.8.26	Surface water (SuDS) drainage installed to accommodate the 19 residential static caravans and 8 touring caravans, as set out in the current site layout plan (Figure 14) will not be altered as the Site has drained in this way since it was constructed and the principle of development and drainage will not be altered. It already attenuates an appropriate volume of surface water runoff from proposed areas of hardstanding. The Client has indicated the underlying substrate is approximately 400mm thickness which would attenuate the appropriate volume of surface water runoff.
8.8.27	<u>Design of Surface Water Drainage System</u> • The permeable gravel surfacing and the permeable substrate will ensure there is no increase in the runoff rate, in line with: • South East Lincolnshire Local Plan 2011-2036 (2019) ○ Policy 4: Approach to Flood Risk ○ Policy 2: Development Management ○ Policy 3: Design of New Development ○ Policy 13: South West Quadrant Sustainable Urban Extension ○ Policy 28: The Natural Environment ○ Policy 30: Pollution ○ Policy 31: Climate Change and Renewable and Low Carbon Energy • Paragraphs 164 (a), 181 and 182 of the National Planning Policy Framework (NPPF, 2025) There should be no objection to the proposals for foul and surface water drainage.
8.8.28	The principle and acceptability of using infiltration to drain surface water runoff at the Site is proven by the extant planning permission for 33 touring caravans within the site ownership boundary, which have proposed infiltration techniques to attenuate and discharge surface water drainage into the ground. This is the primary route of discharge.
8.8.29	In any event whereby the ground conditions are found not to be conducive to infiltration, an alternative discharge could be made to the nearest drainage ditch located adjacent to the east.
8.8.30	Any formal discharge to the drainage ditch would be restricted to an appropriate rate and a land drainage consent would be sought from the Lead Local Flood Authority (LLFA) or North Level IDB depending on who the statutory consultee is.
8.8.31	<u>Conclusion</u>
8.8.32	On the basis of the information reviewed and presented in this report, it is my opinion that a suitable scheme of surface water and foul water drainage from the Site can and will be achieved to serve the development.
8.8.33	The extant planning permission has set the principles and form the baseline of an acceptable drainage scheme at the Site.

8.8.34	A review of the current provision of drainage infrastructure on the Site has been undertaken through my onsite inspection and clarifications. • The existing caravan site currently drains to a cesspit associated with the toilet block located within the north-east of the site. It is assumed that a regular maintenance regime is in place, with the cesspit being emptied on a routine basis. • There is an existing foul network that is connected to an existing Marsh Shallow Ensign Ultra and Shallow Ensign Standard Package Treatment Plant (PTP), located to the north-west of the site. At the time of the site visit, the PTP was not operational as it was not connected to a power supply. It is assumed that all relevant licences and permits were previously obtained to allow discharge to the drainage ditch located to the east of the site. • The site is predominantly surfaced with loose-bound, permeable hardstanding and underlying substrate, which facilitates the infiltration of surface water runoff from roofs, parking areas, access tracks, and landscaped areas. It is assumed that the extant planning permission incorporated a strategy of surface water disposal via infiltration through the gravel substrate. Proposed Development All 19 static caravans propose to drain foul flows into an upgraded PTP that has suffice capacity to drain the development. The foul drainage options are summarised below: • Option 1: A new package treatment plant (PTP) with sufficient capacity to serve approximately 76 occupants associated with the 19 static caravans. The 19 static caravans would require a treatment capacity of approximately 9.12m³, with the eight touring caravans continuing to drain via the existing cesspit and associated emptying regime. • Option 2: To provide a more sustainable and robust drainage solution, a new PTP is recommended to serve the entire site, accommodating up to 108 occupants (based on 19 static and 8 touring caravans at full capacity). This would require a treatment capacity of approximately 13.44 m³. Surface water runoff from roof, access and parking areas are proposed to drain surface water runoff into a permeable gravel surface and substrate with depth of minimum 346mm to attenuate and discharge to ground during the future 2070s epoch scenario (1 in1 00 year + 40% CC). Permeable landscaping is shown to segregate plots and for screening purposes. 8.8.35 The assessment and associated calculations indicate that the existing package treatment plant (PTP) would require upgrading to provide sufficient capacity to accommodate the proposed development. A bespoke Environmental Permit should be obtained from the Environment Agency (EA) to enable the discharge associated with the proposed 19 static and 8 touring caravans, which is estimated to generate a daily treated effluent flow of approximately 13.44 m³ to the drainage ditch located to the east of the site. Where an existing discharge permit is in place, this should be reviewed and updated accordingly to reflect the requirements of the proposed development. There is sufficient space on the Site to install upgraded drainage infrastructure such as a new PTP. 8.8.36 The principle of drainage at the Site has already been proven by the extant planning approval and development in place currently. There is already existing infrastructure which is and can be used to drain surface water runoff.
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8.8.37	The intent of the Client is to ensure that any application for a site licence and the associated drainage scheme proposed will adhere to site licensing conditions, for approval by the Council.
8.8.38	It is my opinion that the clarifications provided within this report give assurances that the development can and will comply with National and Local policies relating to drainage, and there should be no objection to the proposals for foul and surface water drainage.
8.8.39	I would like to recommend that the Council secure the proposed drainage strategy and design of the drainage proposals for approval and if required any additional requirements could be set out within a suitable planning condition, the Client and I would be happy to work with the Council on the appropriate wording of this.

9.0 FLOOD RISK AND DRAINAGE CONCLUSION

9.1

Present Flood Risk

9.1.1

Table 16.

Present Flood Risk

Risk Source	Very Low	Low	Medium	High
Rivers (fluvial)		✓		
Sea (tidal)	✓			
Surface water (pluvial)	✓			
Groundwater		✓		
Artificial		✓		
Residual Breach in Welland Flood Defences		✓		

9.1.2

The Site is located within Flood Zone 3 (high probability); however, it is currently afforded a **Very Low** risk of flooding from fluvial and tidal sources due to the presence of the River Welland flood defences. These defences are subject to regular maintenance by the Environment Agency, which reduces the likelihood of breach or failure. Accordingly, the residual risk of flooding associated with a potential defence breach is considered to be **low**. Surface water (pluvial) flood risks are **Very Low**. Groundwater flood risks are **Low** and flooding risks from artificial sources (i.e. IDB pumping station failure, canals, reservoirs and sewers) are **Very Low**.

9.2 Development Flood Risk

9.2.1 **Table 17. Development Flood Risk**

Risk Source	Very Low	Low	Medium	High
Rivers (fluvial)	✓			
Sea (tidal)	✓			
Surface water (pluvial)	✓			
Groundwater	✓			
Artificial	✓			
Residual Breach in Welland Flood Defences		✓		

9.2.2 Accounting for the projected increase in future design flood levels associated with climate change in addition to the implementation of appropriate resilience and mitigation measures, the proposed development is considered to be at **Very Low** risk of flooding from rivers, sea and **Low** during a defence breach scenario due to the raised FFL of the proposed development. Surface water (pluvial) flood risks are **Very Low**. Groundwater flood risks are **Low** and flooding risks from artificial sources (i.e. IDB pumping station failure, canals, reservoirs and sewers) are **Very Low**.

9.3 Development Suitability

9.3.1 The extant permission is a 'Highly Vulnerable' land use and forms the baseline for this assessment. The Flood Risk Assessment demonstrates that, although the proposed development falls within the 'Highly Vulnerable' classification and is not considered appropriate for the Site in accordance with the NPPG (2025) and the South East Lincolnshire SFRA Standing Advice, the scheme comprising 19 residential static caravans and 8 touring caravans can be made safe over its 100-year lifetime through the implementation of appropriate mitigation measures. Furthermore, the reduction in the total number of units, compared to the extant permission, results in a corresponding reduction in potential risk to life which is a benefit over the existing scenario.

9.3.2 The Sequential Test is not considered applicable, as the Site benefits from extant planning permission and comprises existing development, with no increase in flood risk to occupants due to reduced site occupancy.

9.3.3	Similarly, the Exception Test is not required; however, the proposed development aligns with its principles by demonstrating that it can be made safe for its lifetime, incorporating sustainable drainage in accordance with national and local standards, and delivering wider sustainability benefits. These include the provision of affordable and accessible accommodation, support for the local economy, and a reduced environmental impact.
9.4	Drainage
9.4.1	All touring caravans and occupants currently use a toilet block, which is also used to empty the foul storage systems within the touring caravans. This is inspected and emptied regularly and there were no obvious odours or issues reported by those occupants currently using the site.
9.4.2	The Site benefits from an established foul drainage network which is connected to an existing Marsh Shallow Ensign Ultra and Standard Package Treatment Plant (PTP), discharging to a drainage ditch to the east. Although the PTP is not yet connected to a power supply, it is assumed that the necessary discharge consent has been obtained from the relevant statutory authority, understood to be the North Level Internal Drainage Board (IDB).
9.4.3	The assessment included in this report has been undertaken in accordance with the British Water Code of Practice (2014), Flows and Loads – 4, which confirms a new PTP will be required to serve the population of the Site and the current PTP does not have sufficient capacity to support the proposed development.
9.4.4	All 19 static caravans are proposed to drain to an upgraded PTP with sufficient capacity. Foul drainage options are as follows: - Option 1: A PTP sized for approximately 76 occupants (9.12 m³ per day) serving the static caravans only, with touring caravans continuing to drain to the existing cesspit and emptying regime. - Option 2 (Preferred): A single PTP serving the entire site (19 static and 8 touring caravans), accommodating up to 108 occupants and requiring a capacity of approximately 13.44 m³ per day.
9.5	Surface Water Drainage
9.5.1	Surface water management follows the principles established under the extant approval, with permeable gravel surfacing and a Type 3 sub-base providing attenuation and infiltration. This approach aligns with SuDS best practice, delivering both storage and water quality benefits in accordance with the CIRIA SuDS Manual (2015).
9.5.2	Design calculations, incorporating a 1 in 100 year event plus 40% climate change allowance and 10% urban creep, indicate that a minimum gravel depth of 346mm is required based on limited infiltration potential of the underlying geology. Site evidence confirms an installed depth of approximately 400mm, demonstrating that the existing drainage substrate already provides adequate attenuation and provides additional filtration of runoff, through the substrate of the underlying permeable pavement system.
9.5.3	Overall, the drainage strategy is considered appropriate and compliant with national and local policy. The established infrastructure is suitable for the proposed development, and there should be no objection in principle to the foul and surface water drainage proposals, subject to standard planning controls and detailed design agreement with the Council.

9.6	Additional Work Required
9.6.1	Due to the nature of the development and assessed flood risk profile, the following additional works are required to ensure that the proposals are acceptable: - Finished floor levels (FFLs) are set at 2.75 mAOD, with flood-resilient construction measures extending to 2.90 mAOD. The FFLs include a 0.15 m freeboard above the predicted 0.1% AEP (2115) fluvial breach flood level*. Given the single-storey nature of the development and its non-standard classification, the design adopts a precautionary approach based on the principles of the Standing Advice; - Incorporation of the recommended resilience and mitigation measures into the design of the development; - The PTP upgraded to serve the population of the proposed development as well as any required licencing and permits approved with statutory authorities; - Flood Warning Evacuation Plan.

10.0 GLOSSARY

10.1	Annual Exceedance Probability (AEP)
10.1.1	The AEP is the chance or probability of a natural hazard event (usually a rainfall or flooding event) occurring annually and is usually expressed as a percentage.
10.2	Canal & River Trust (CRT)
10.2.1	The CRT holds the guardianship of 2,000 miles of historic waterways across England and Wales.
10.3	British Geological Survey (BGS) Geo-Index
10.3.1	The BGS Geo-Index dataset provides confirmation of the areas where detailed borehole data is publicly available and provides mapped coverage of Bedrock, Superficial and surface geology.
10.4	Climate Change (CC)
10.4.1	Predicted changes in future global or regional climate patterns. For flood risk, percentage change allowances have been determined according to predictions of anticipated changes in peak river flow, peak rainfall intensity, sea level rise and offshore wind speed and extreme wave height. CC scenario data exists across different epochs (time periods) to determine the needs for climate resilience measures.
10.5	Design Flood Event
10.5.1	Considered to be the flood event for which the design of which a development should be designed to be unaffected by flooding. Typically, equivalent to a present day 1 in 100/200 year event (depending upon the flooding source) including an appropriate allowance for climate change.

10.6	Environment Agency (EA) and EA Product Data (EAPD)
10.6.1	The EA is the lead organisation for providing flood and coastal risk management and warnings of flooding from Main Rivers and on the coast. For Sites within or in close elevational proximity to Flood Zone 2 or Flood Zone 3, EAPD is ordered to obtain more detailed flood risk data such as flood depths, breach and overtopping mapping and fluvial/tidal risks associated with CC.
10.7	Environmental Social Governance (ESG)
10.7.1	ESG refers to a collection of criteria that measures the sustainability and ethical impact of an investment in a business. ESG criteria are a set of standards for a company's behaviour used by socially conscious investors to screen potential investments. Environmental criteria consider how a company safeguards the environment, including corporate policies addressing CC, for example. Social criteria examine how it manages relationships with employees, suppliers, customers, and the communities where it operates. Governance deals with a company's leadership, executive pay, audits, internal controls, and shareholder rights. If a separate ESG Flood Risk and CC Assessment is needed, additional CC data will be required.

11.0 REFERENCES

11.1	British Geological Survey (BGS) (2024). Geology of Britain Viewer. Accessed from: https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer/
11.2	Defra/Environment Agency (2005). Flood Risk Assessment Guidance for New Development. Phase 2 Framework and Guidance for Assessing and Managing Flood Risk for New Development – Fill Documentation and Tools. R & D Technical Report FD232-/TR2.
11.3	Environment Agency [EA] (2025). Flood risk assessments: climate change allowances. Accessed from: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances
11.4	Ministry of Housing, Communities & Local Government (2025). National Planning Policy Framework (NPPF). Accessed from: https://www.gov.uk/guidance/flood-risk-and-coastal-change
11.5	Ministry of Housing, Communities & Local Government (2025). Planning Practice Guidance (NPPG). Flood Risk and Coastal Change. Accessed from https://www.gov.uk/guidance/flood-risk-and-coastal-change
11.6	South East Lincolnshire Strategic Flood Risk Assessment (2017). Strategic Flood Risk Assessment.

APPENDIX 1: FIGURES



Figure 1: Aerial imagery of the Site

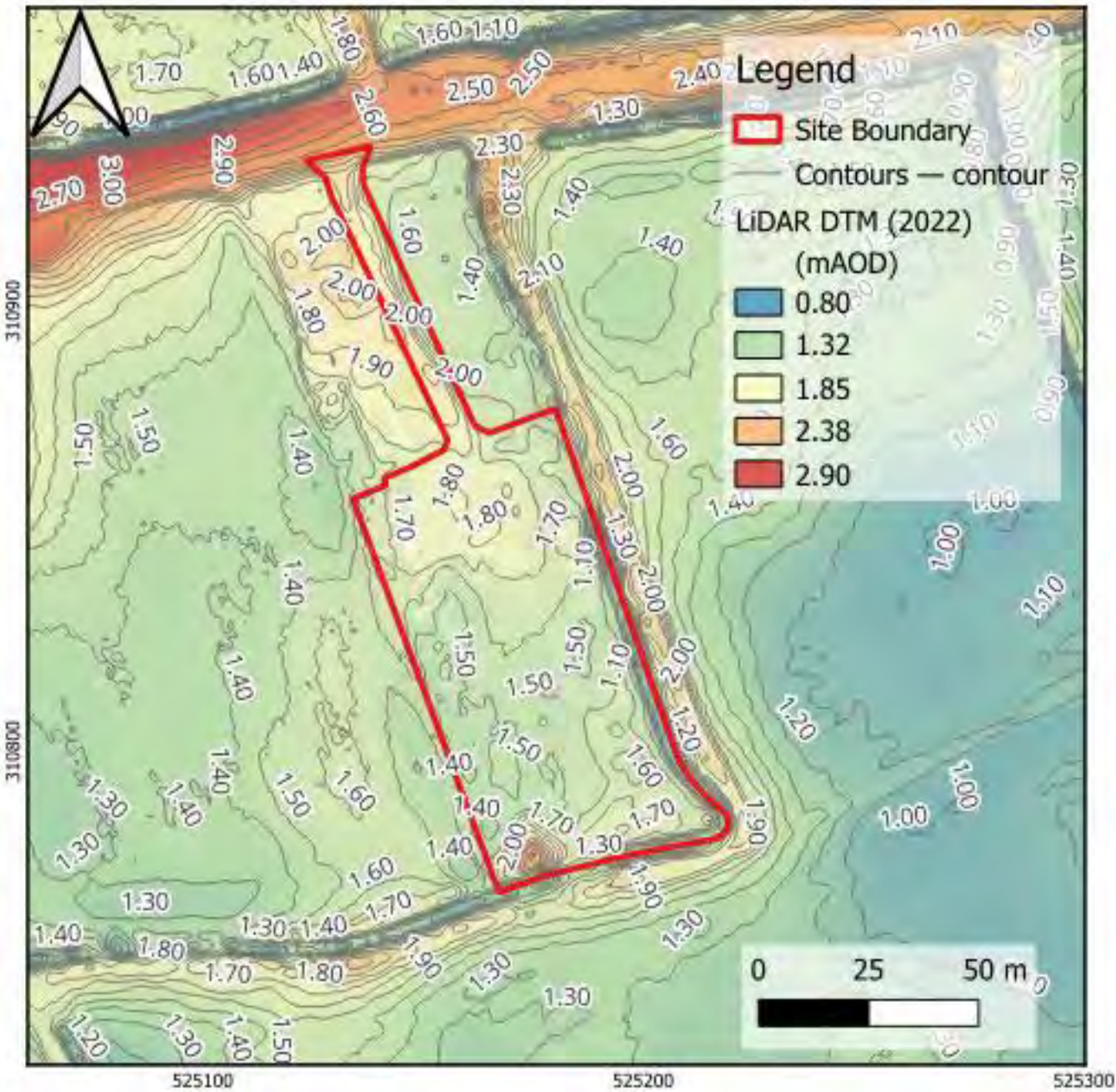


Figure 2: LiDAR DTM (EA, 2022)



Figure 3: Hydrological Features & Relevant Infrastructure (EA, 2025)
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Figure 4: Flood Defences, Reduction in Risk of Flooding from Rivers and Sea and Relevant Infrastructure (EA, 2026)
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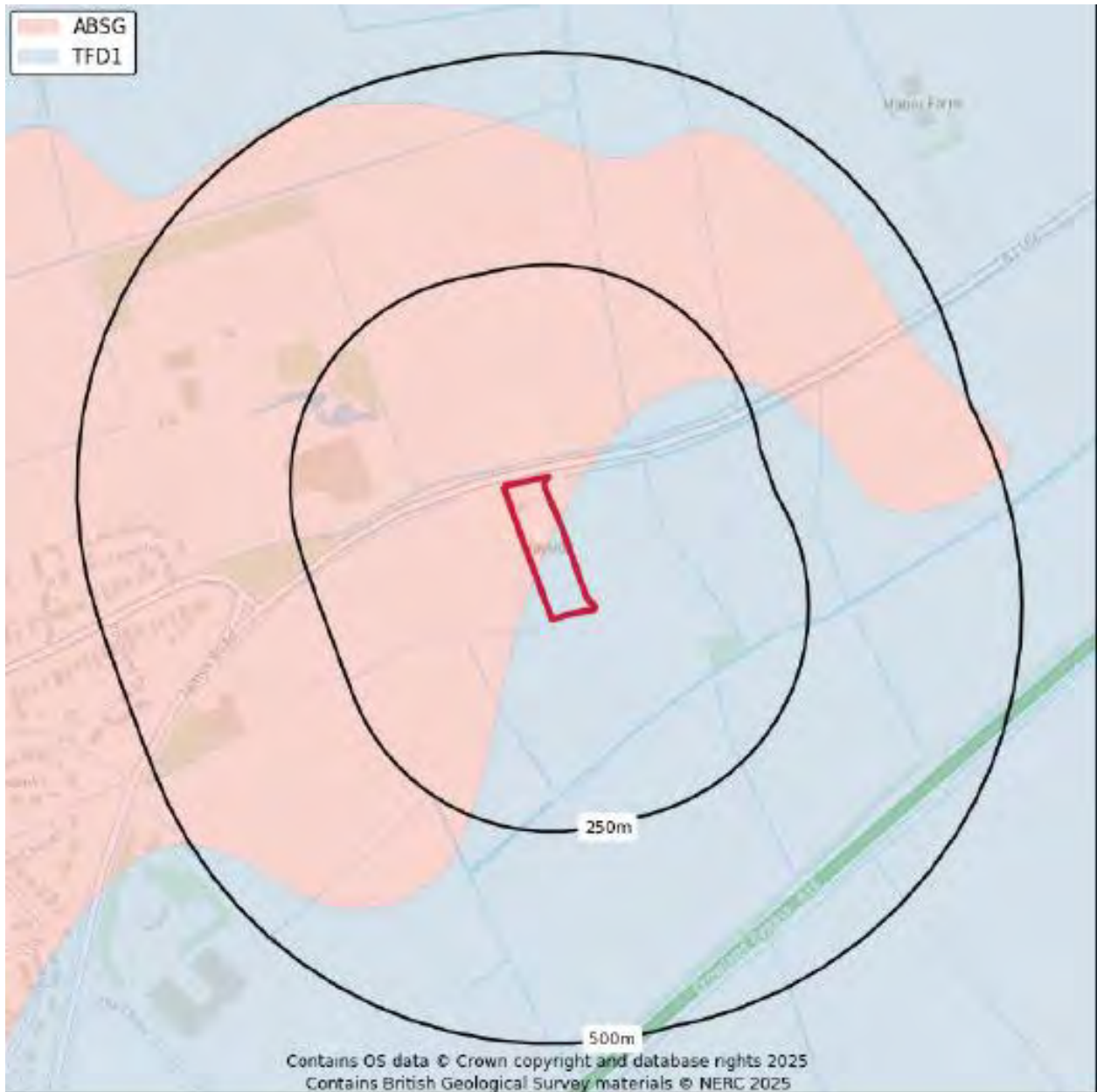


Figure 5: Superficial Geology (BGS, 2025)
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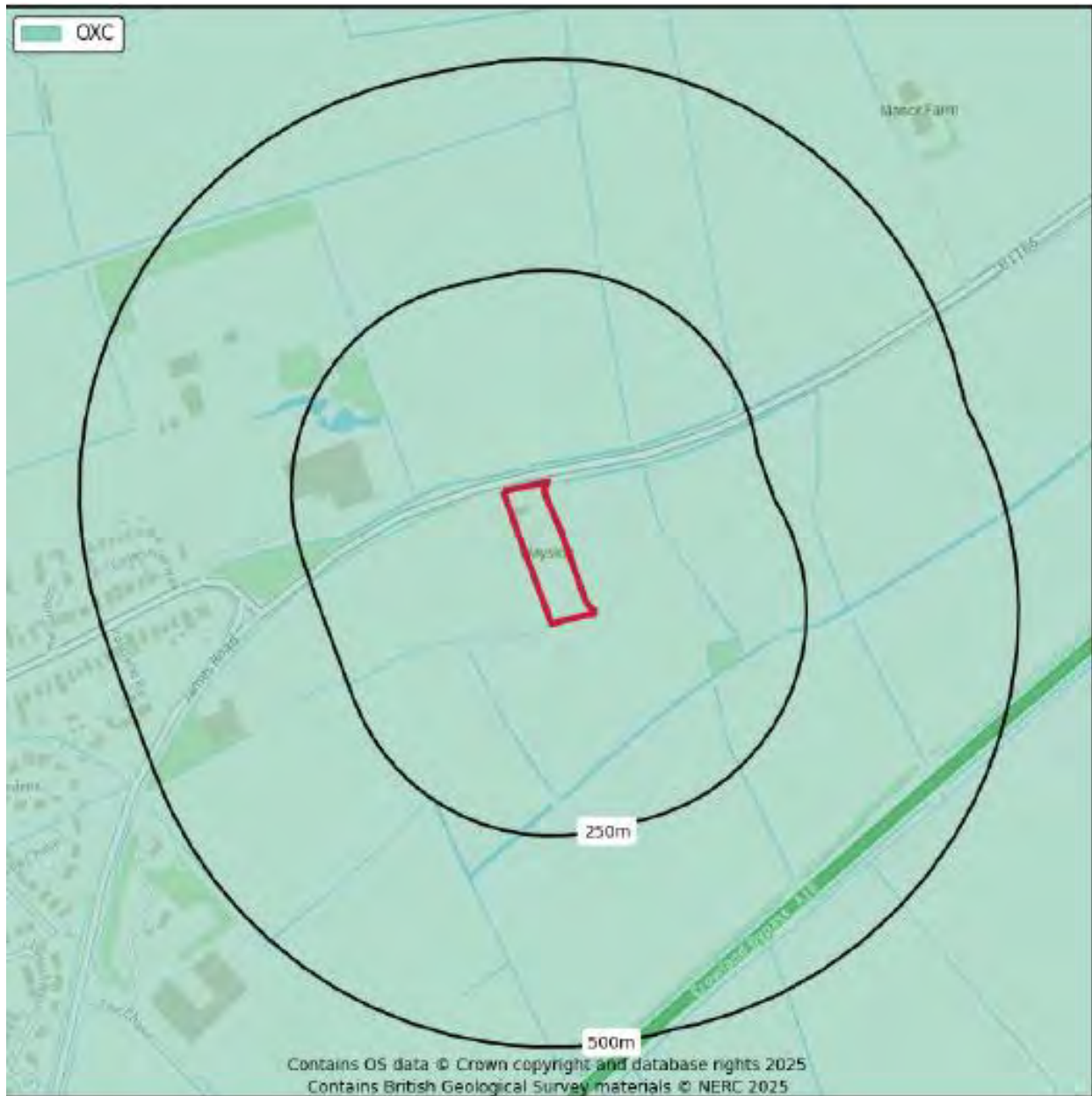


Figure 6: Bedrock Geology (BGS, 2025)
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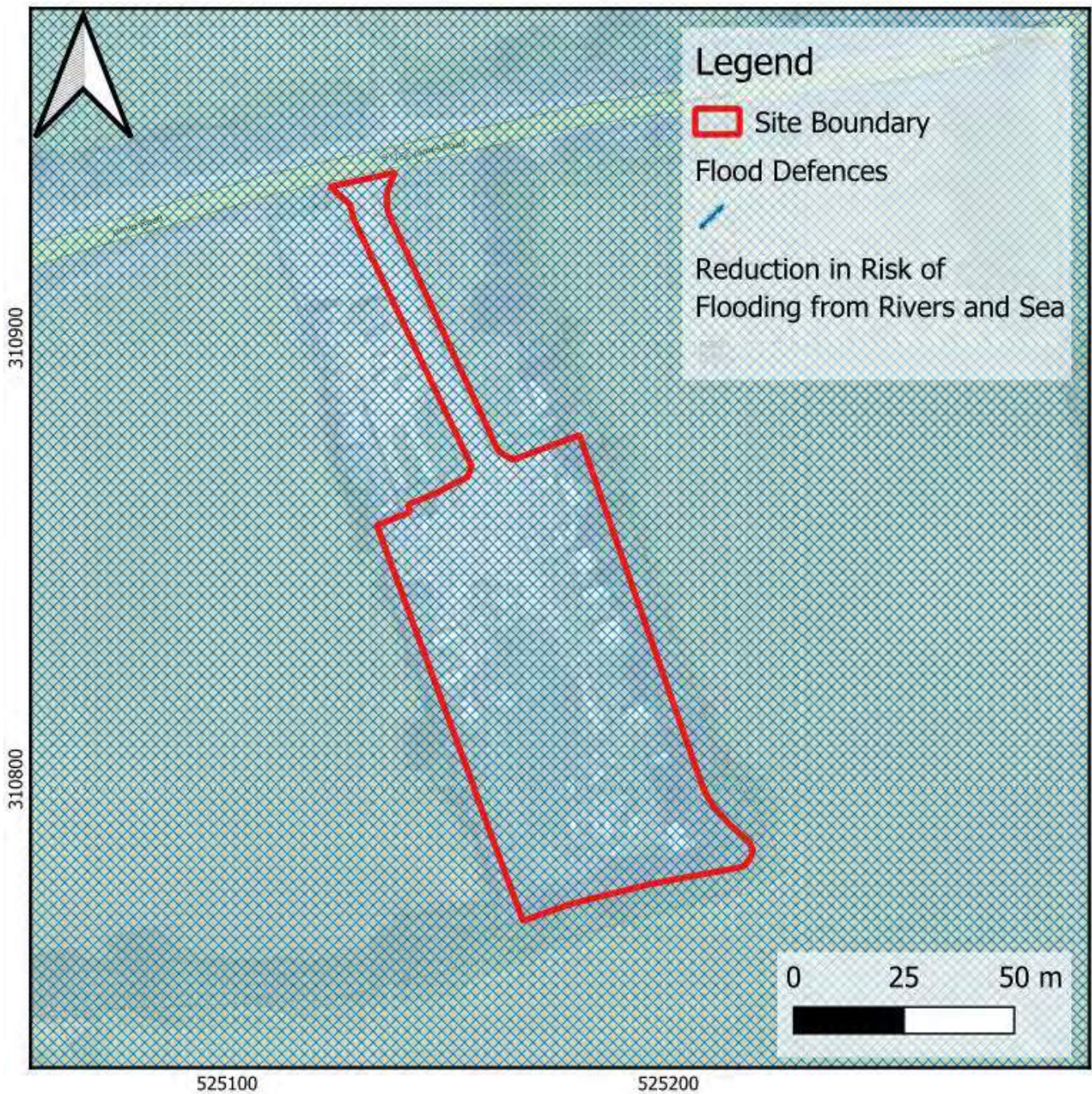


Figure 7: EA Historic Flood Map (EA, 2026)
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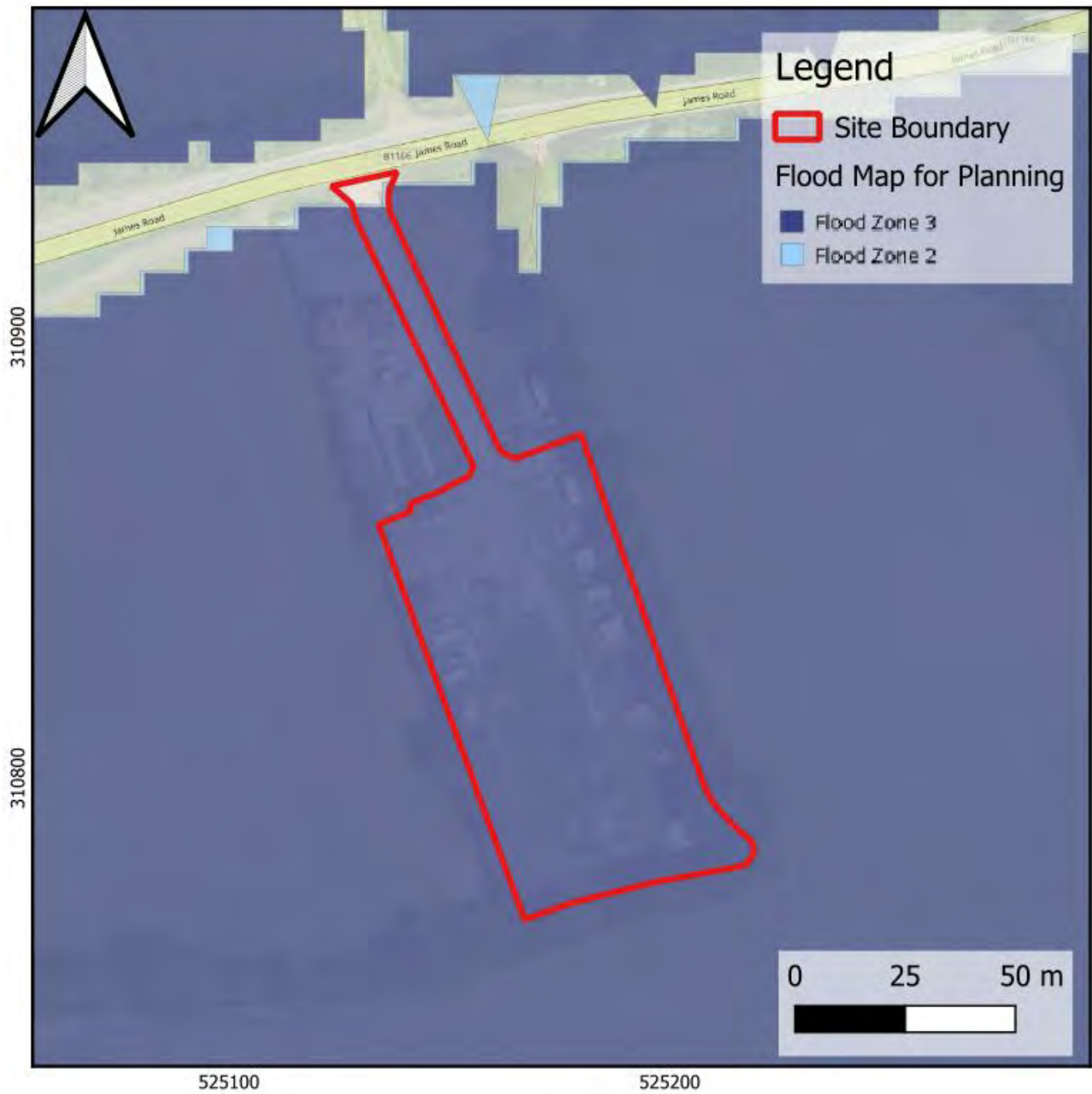


Figure 8: EA Flood Map for Planning Purposes (EA, 2024)
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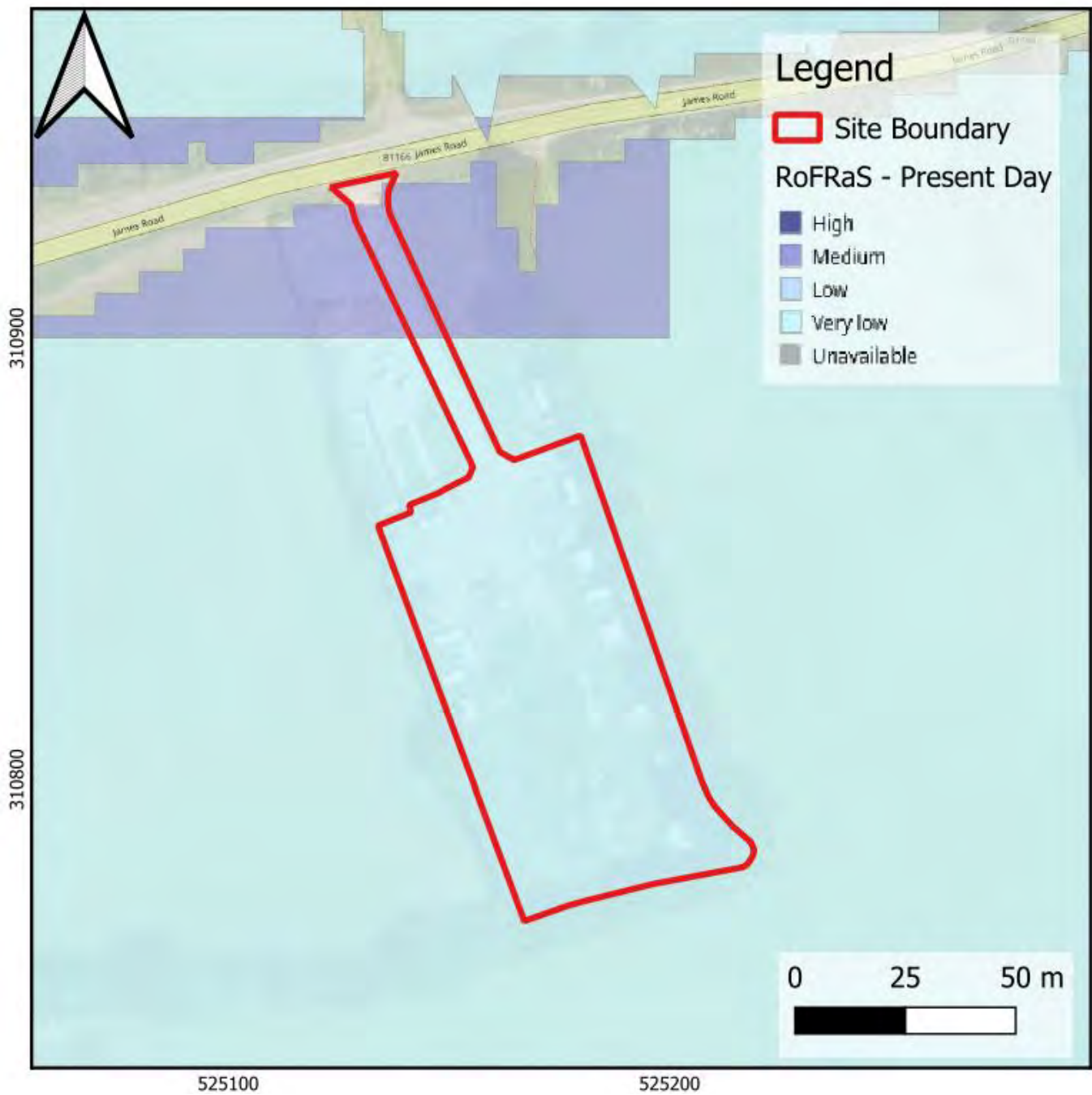


Figure 9: Risk of Flooding from Rivers and Sea map (EA, 2024)
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Figure 10: Modelled present day flooding scenarios (Mott MacDonald, 2016)
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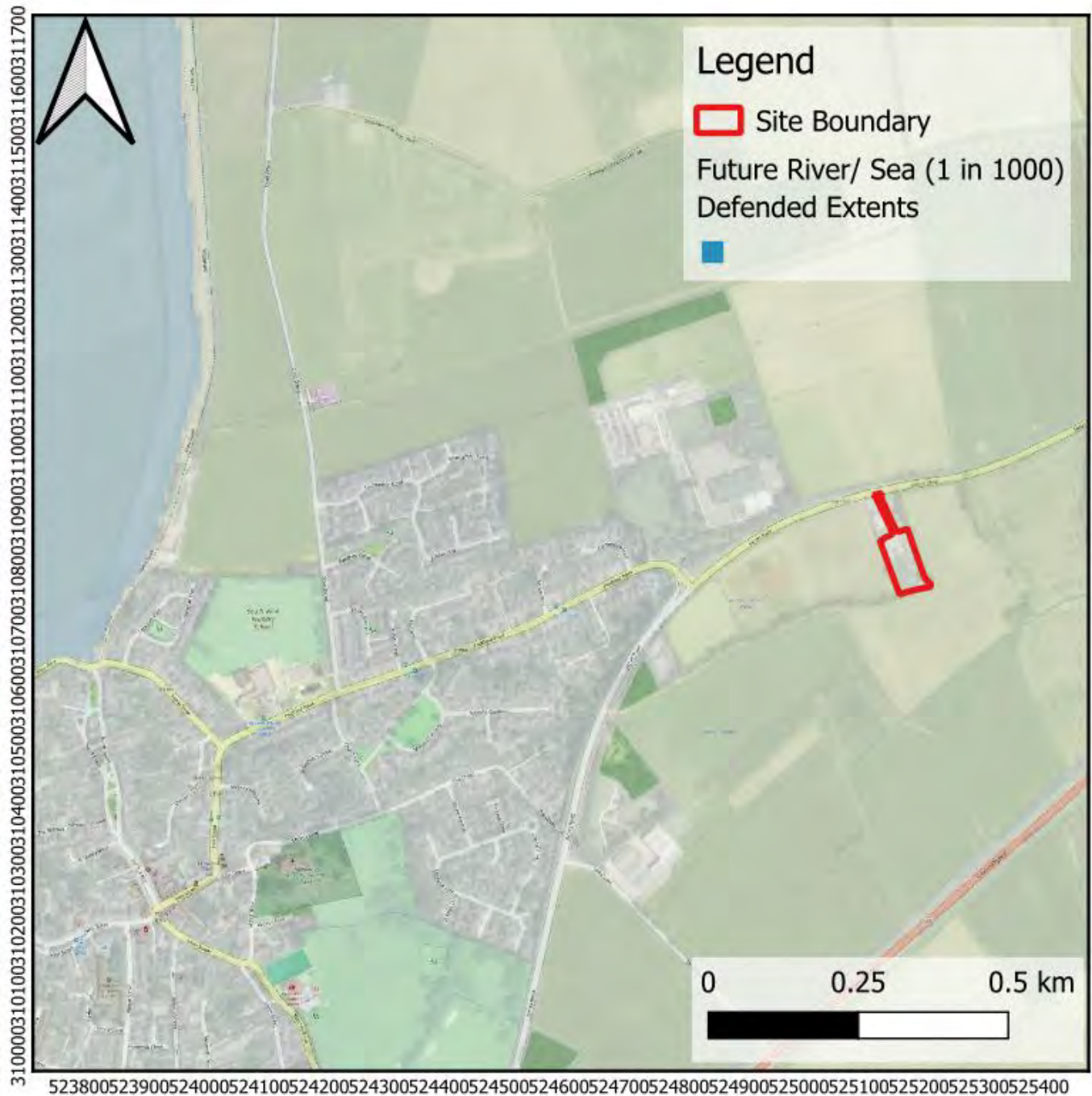


Figure 11: Future 2080s epoch Defended Flood Map for Planning 0.1% AEP (EA, 2016)
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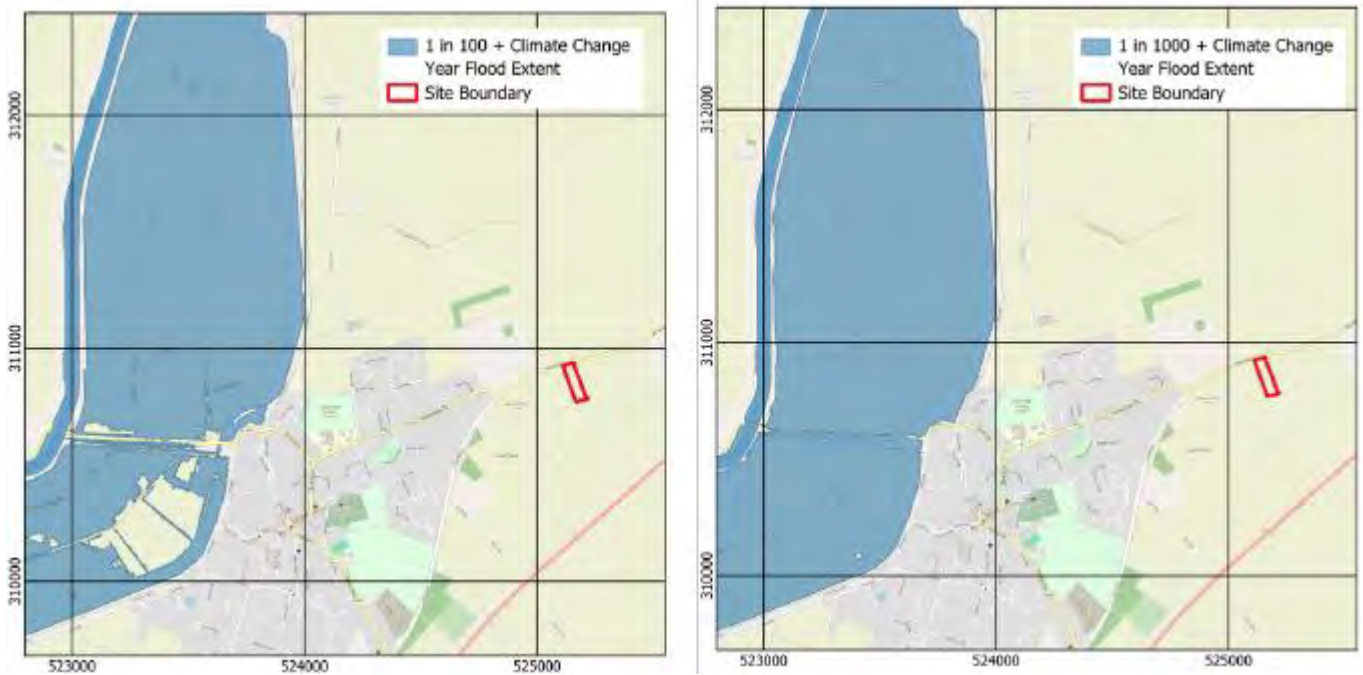


Figure 12: Modelled future flooding scenarios (Mott MacDonald, 2016)
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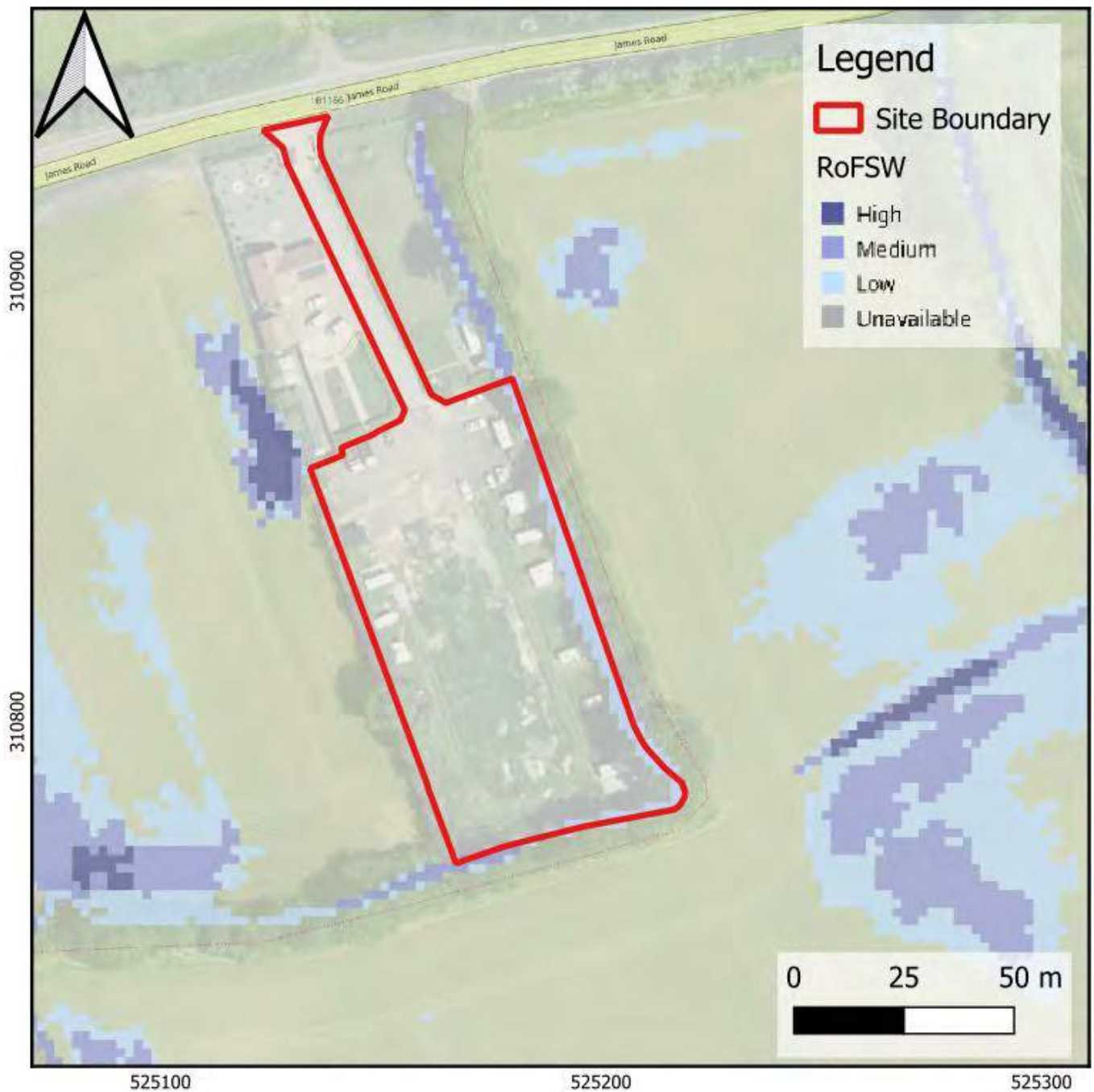


Figure 13: Present Day Modelled Surface Water Flooding Extent (EA, 2025)
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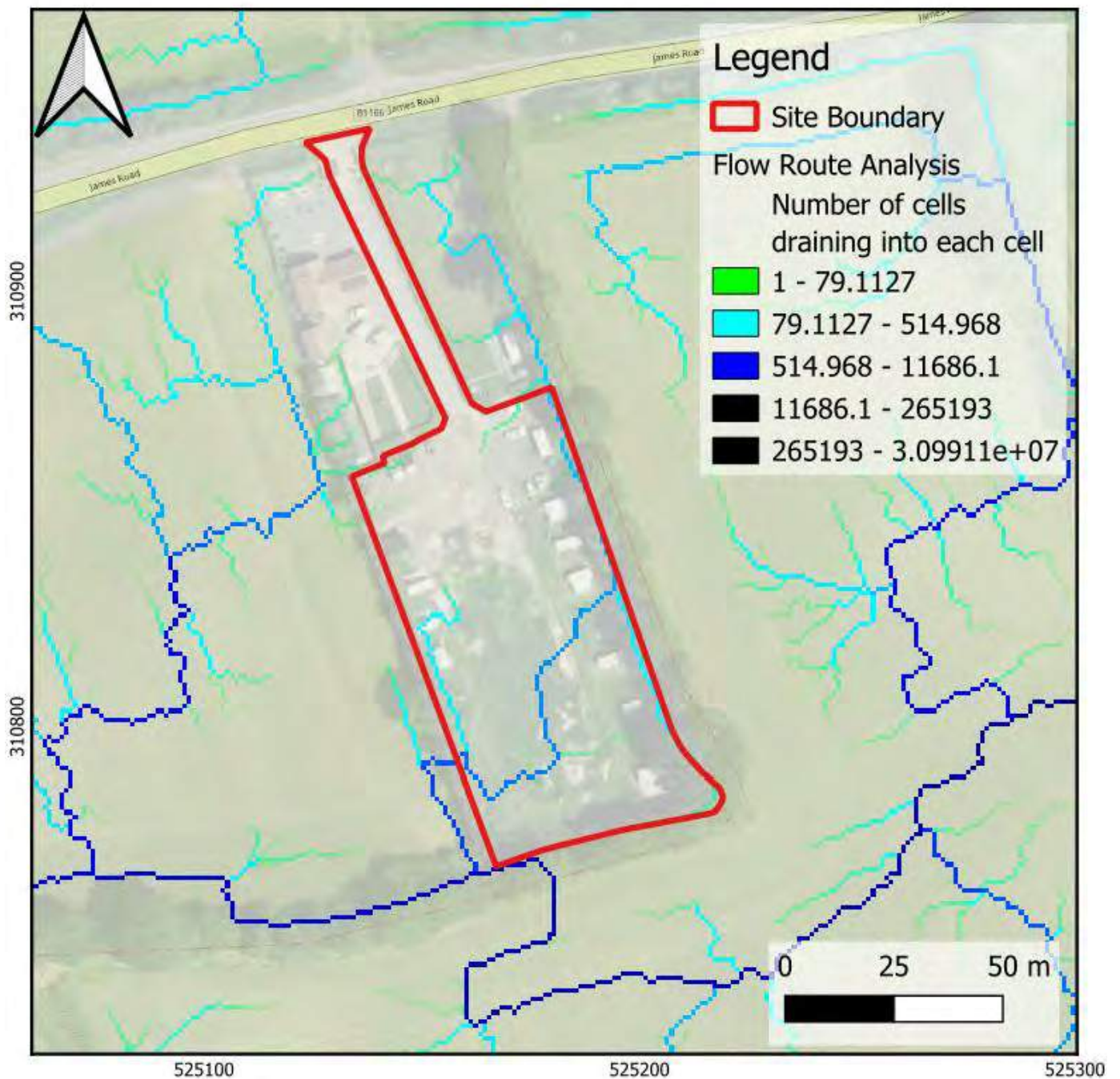


Figure 14: Colliers Flow Route Analysis (EA, 2025 LiDAR Data)

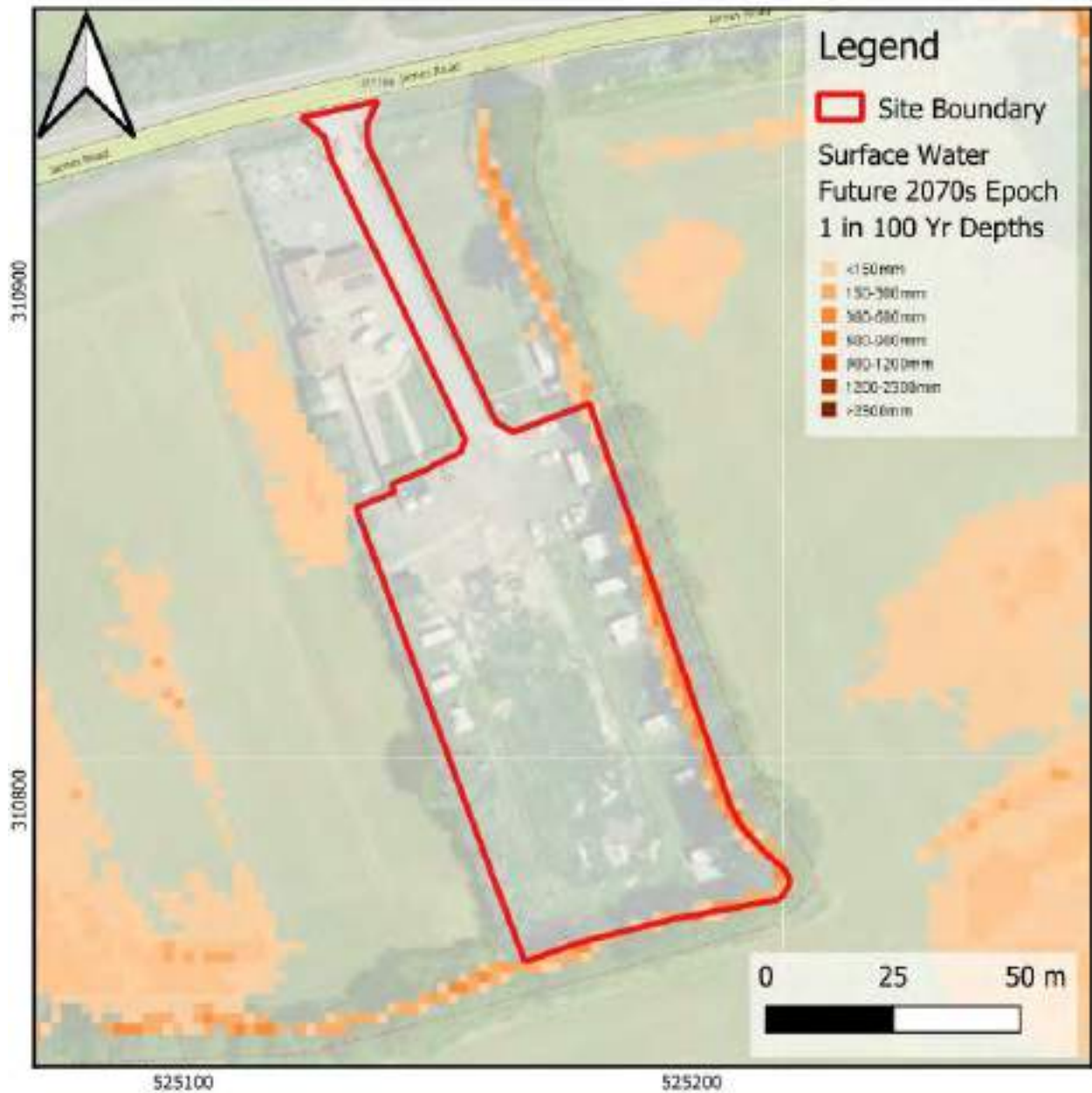


Figure 15: Future Design Surface Water Flooding Event Extent and Depth (EA, 2026)
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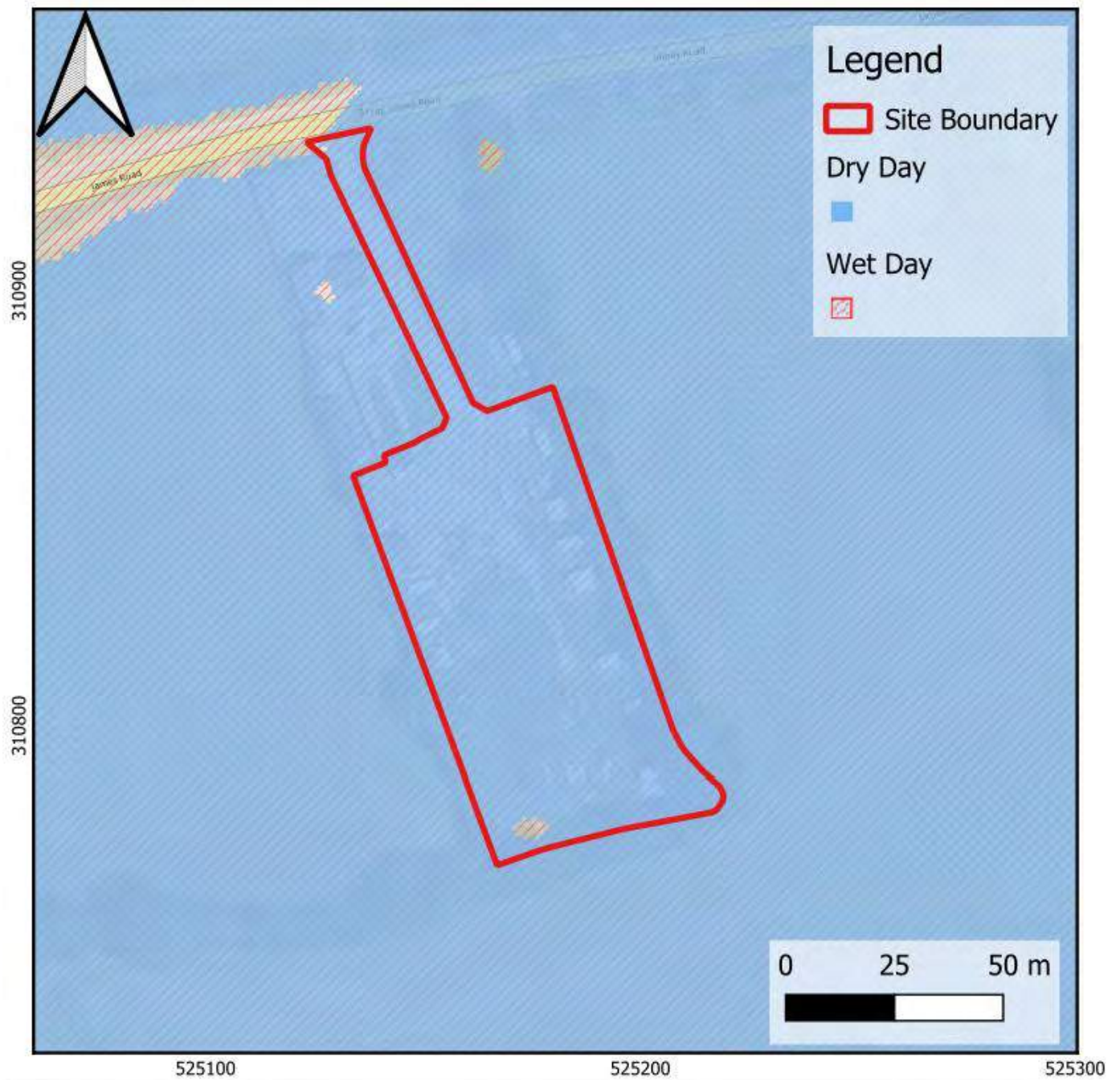


Figure 16: Reservoir Flood Extent and Depth Map (EA, 2024)
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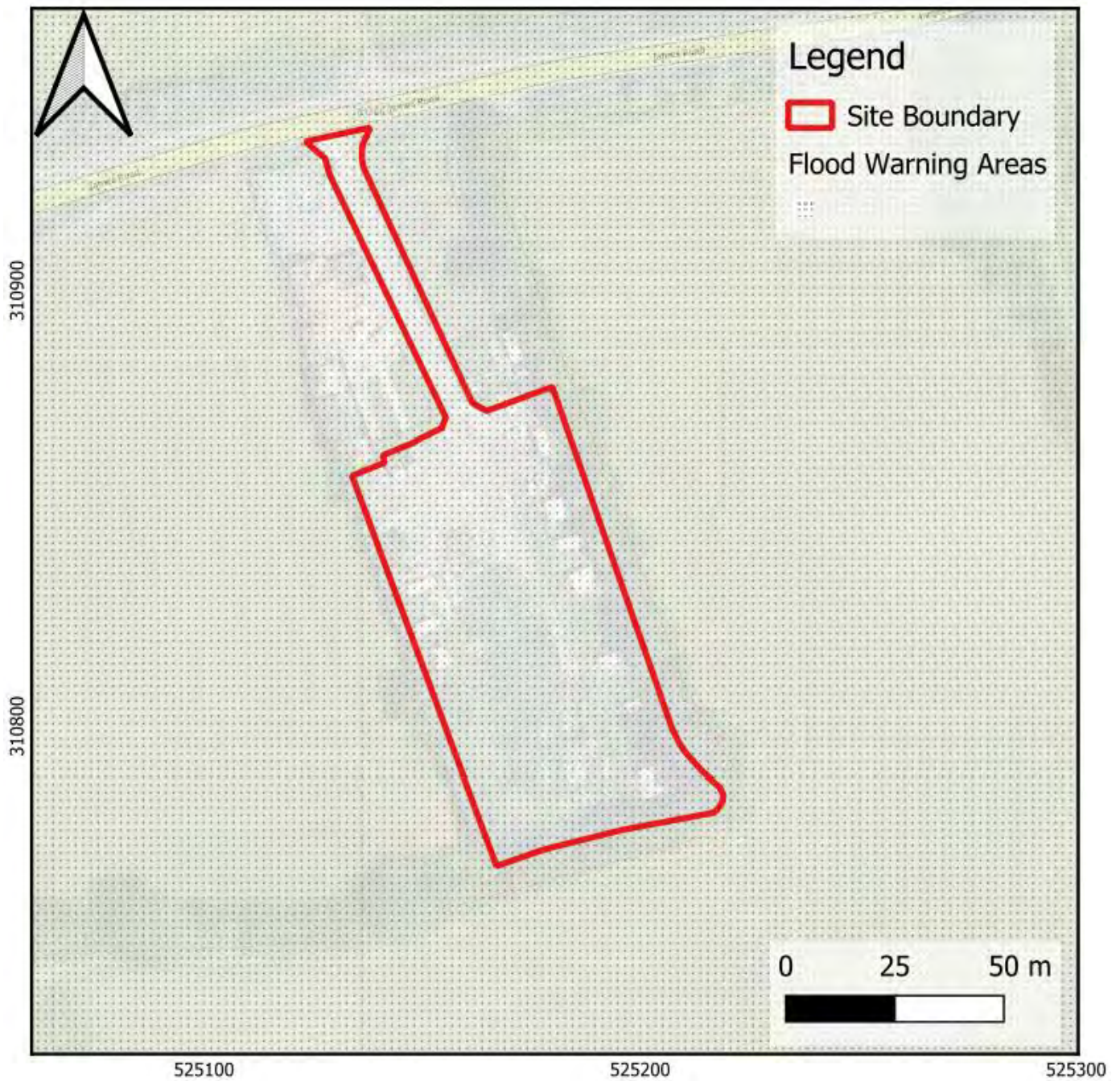


Figure 17: EA Flood Warning Coverage for the local area (EA, 2024)
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APPENDIX 2: SITE NOTES AND PHOTOGRAPHS

Site Inspection Sheet

General Information

Site Address: Wayside, James Road, Crowland, Peterborough, PE6 0JB

Attending Consultant: Jacob Banks

Date and Time of Visit: 12th May

On-Site Conditions: The Site is currently in use as a caravan site, comprising several pitches. The ground surface is predominantly gravel and hardcore, with bricks and kerbs delineating individual pitches and internal access roads. The Site benefits from a central access road which runs through the centre of the Site and provides access to James Road, located to the north.

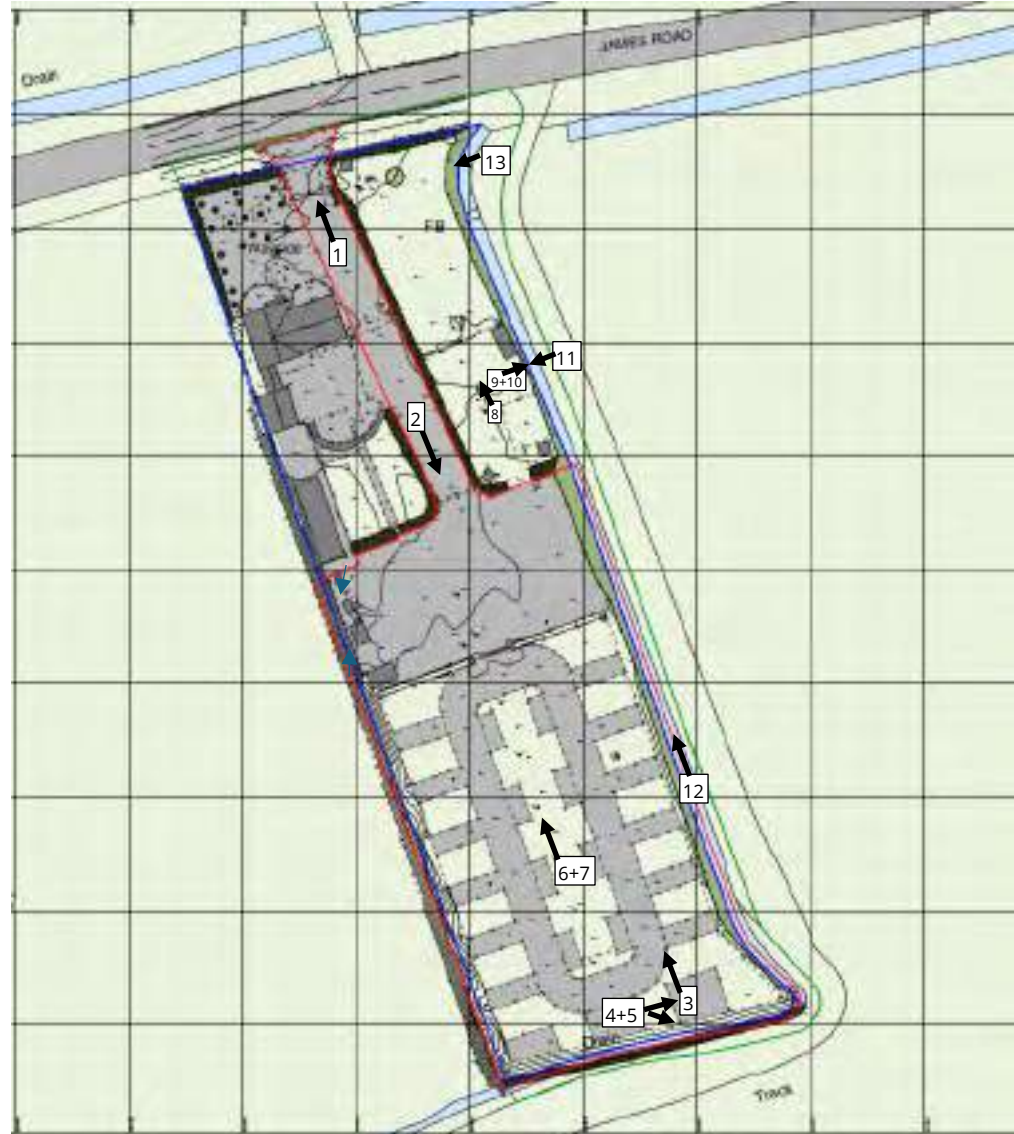
The Site is bounded to the east by a row of mature trees, while new soft landscaping (comprising young shrubs) has been established on a small embankment along the western and southern boundaries.

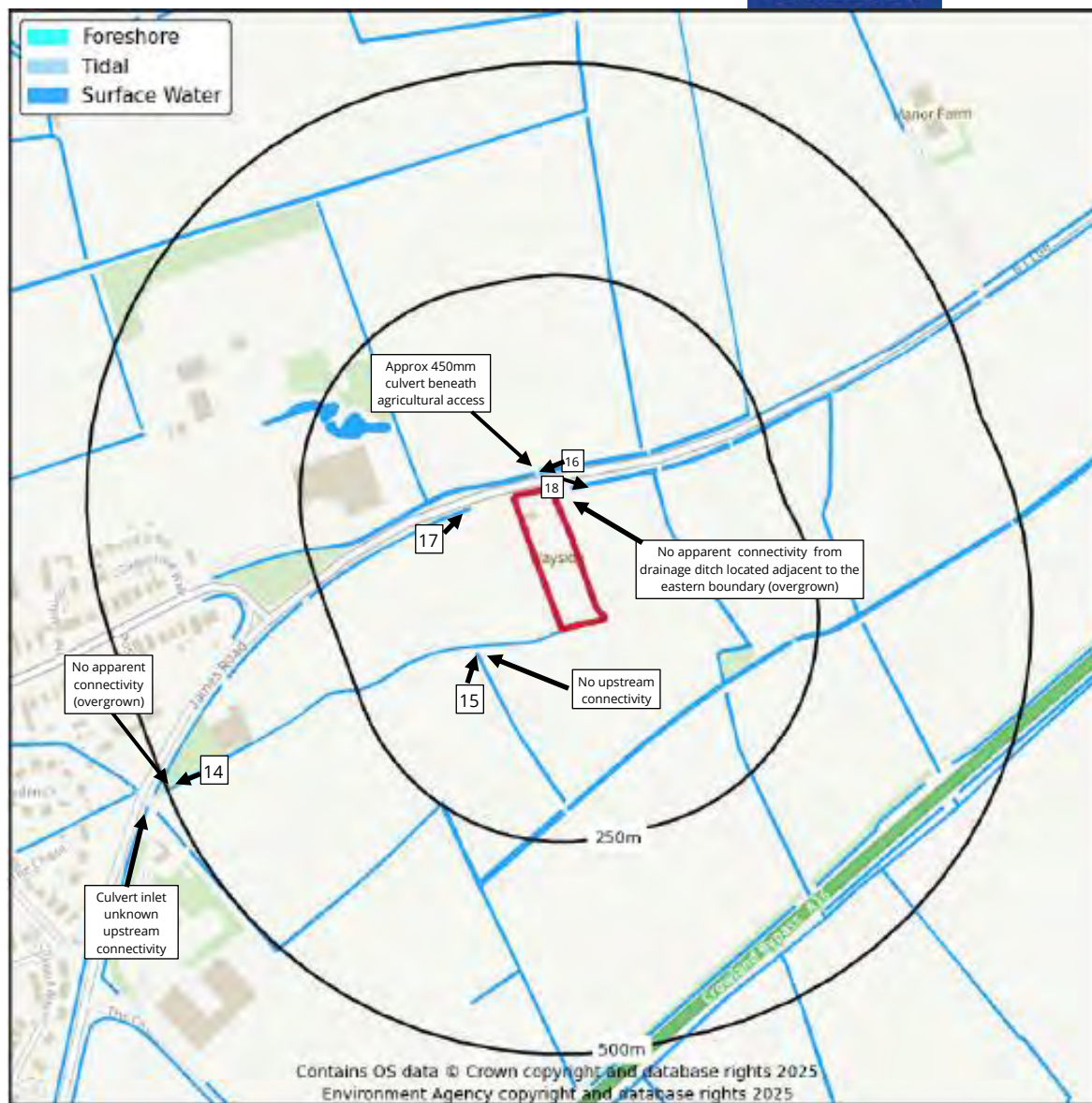
The Site is served by a foul drainage system connected to a package treatment plant (PTP), which is currently not operational as it has yet to be connected to a power supply. The PTP and associated tank are located just to the north-east of the 'Application Boundary' and discharge via an outfall into a drainage ditch along the eastern boundary. Inspection chambers associated with the foul drainage system were observed within the central area of the Site. Lateral connections have also been installed within individual pitches to facilitate future connections from static caravans.

All drainage ditches within the vicinity of the Site were dry at the time of inspection. No headwalls or culverts were observed within these ditches, although some features may have been obscured by dense vegetation. Notwithstanding this, all reasonable efforts were made during the Site inspection to identify any such structures. Notable exceptions include a culvert beneath a field access along the northern side of James Road, located opposite the Site entrance, and a culvert outfall on the southern side of James Road approximately 0.5 km to the south-west of the Site.

The River Welland, located approximately 1.2 km to 2 km to the west of the Site, is accompanied by a continuous flood defence embankment along its course.

Site Map and Approximate Photograph Locations







01: Access to James Road



02: Photo taken from the access looking south



03: The ground surface is gravel and hardcore, with bricks and kerbs delineating individual pitches and internal access roads



04: Lateral connections been installed within individual pitches to facilitate future connections from static caravans.



05: New soft landscaping (comprising young shrubs) has been established on a small embankment along the western and southern boundaries



06: Example of an inspection chamber. Main foul run is thought to flow north through the centre of the Site



07: Main foul run is thought to flow north through the centre of the Site



08: The tank associated with the foul system is located below ground level and is accessed via surface manholes. It is situated in the northeast of the site.



09: Package Treatment Plant (PTP) installed and located within the northeast of the Site



10: The PTP outfall is located beneath soft landscaping in the northeast of the site, discharging into the drainage ditch adjacent to the eastern boundary.



11: The PTP outfall discharging into the drainage ditch adjacent to the eastern boundary.



12: Typical view of drainage ditch located to the east of the Site



13: No visible culvert or headwall was identified within the drainage ditch to the east of the site, in the vicinity of James Road, to indicate connectivity.



14: No visible culvert or headwall were located within the drainage ditch located 0.5km to the southwest of the Site to suggest connectivity into James Rd drainage ditch network.



15: No visible culvert or headwall was identified within the drainage ditch located to the south of the Site to suggest connectivity to the ditch located adjacent to the east of the Site.



16: ~450 mm diameter culvert connects the drainage ditch along the northern side of James Road. It is located to the north of the site and passes beneath an agricultural access.

No visible culvert or headwall was identified within the ditch to the north of James Road. This indicates no apparent connectivity with the drainage ditch adjacent to the eastern boundary of the site.



17: No visible culvert or headwall was identified within the ditch to the south of James Road, located approximately 50m west of the Site.
This indicates no apparent connectivity to ditches surrounding the Site.

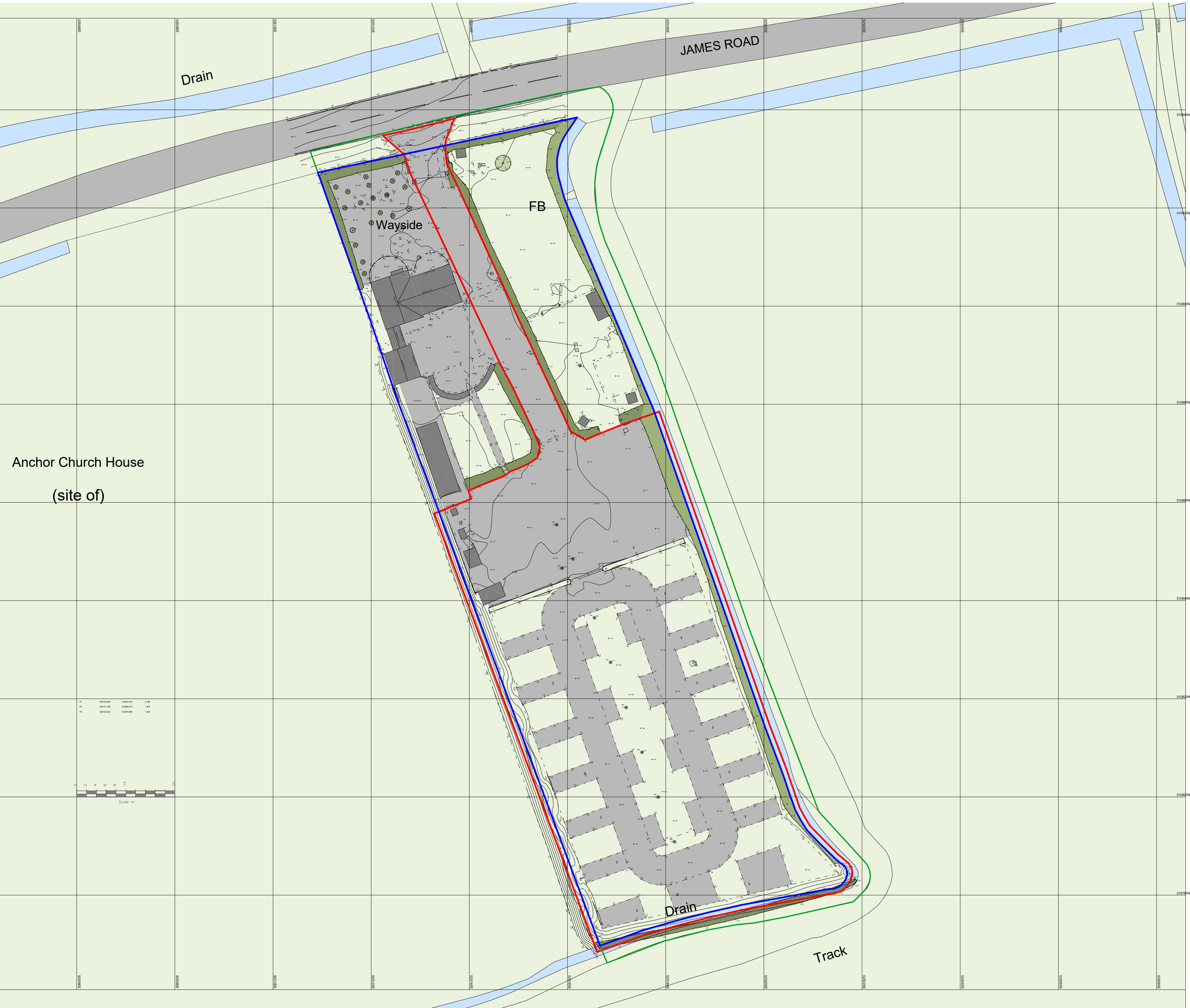


18: No visible culvert or headwall was identified within the ditch to the south of James Road, located approximately 15m east of the Site.
This indicates no apparent connectivity to the ditch located adjacent to the eastern boundary of the Site.



19: Picture taken of the River Welland embankment defence. Located approximately 2.20km to the west.

APPENDIX 3: EXISTING SITE PLANS



Anchor Church House
(site of)

Line/Hatch Key	
	Application Boundary
	Ownership Boundary
	Existing Structure
	Existing Caravan
	Existing Hardstanding
	Existing Watercourse
	2023 Site Licence App. (WK-202000720 / 20_1141A/B)
	Existing Grassland
	Indicative Tree
	Existing Vegetaion
	Existing Gate

P02	Initial Transmittal	P02	EG	17/04/2026
P01	Initial Transmittal	P01	EG	06/02/2025
Issue ID	Issue Name	Current Revision	Initials	Date

Do not scale from this drawing except for planning application purposes. The contractor is to check all site dimensions, levels and sewer inverts before works commence. This drawing must be checked and read against any structural or specialist consultant drawings. The contractor is to comply in all respects with the current Building Regulations and BS Codes of Practice whether or not specifically stated on these drawings. This drawing is not intended to show details of foundations, ground conditions or ground contaminants and confirmation and/or investigation is to be carried out by suitable experts. This drawing and the building works/designs depicted are the copyright of Green Planning Studio Ltd and are not to be reproduced in any form or by any means without the written consent of Green Planning Studio Ltd.
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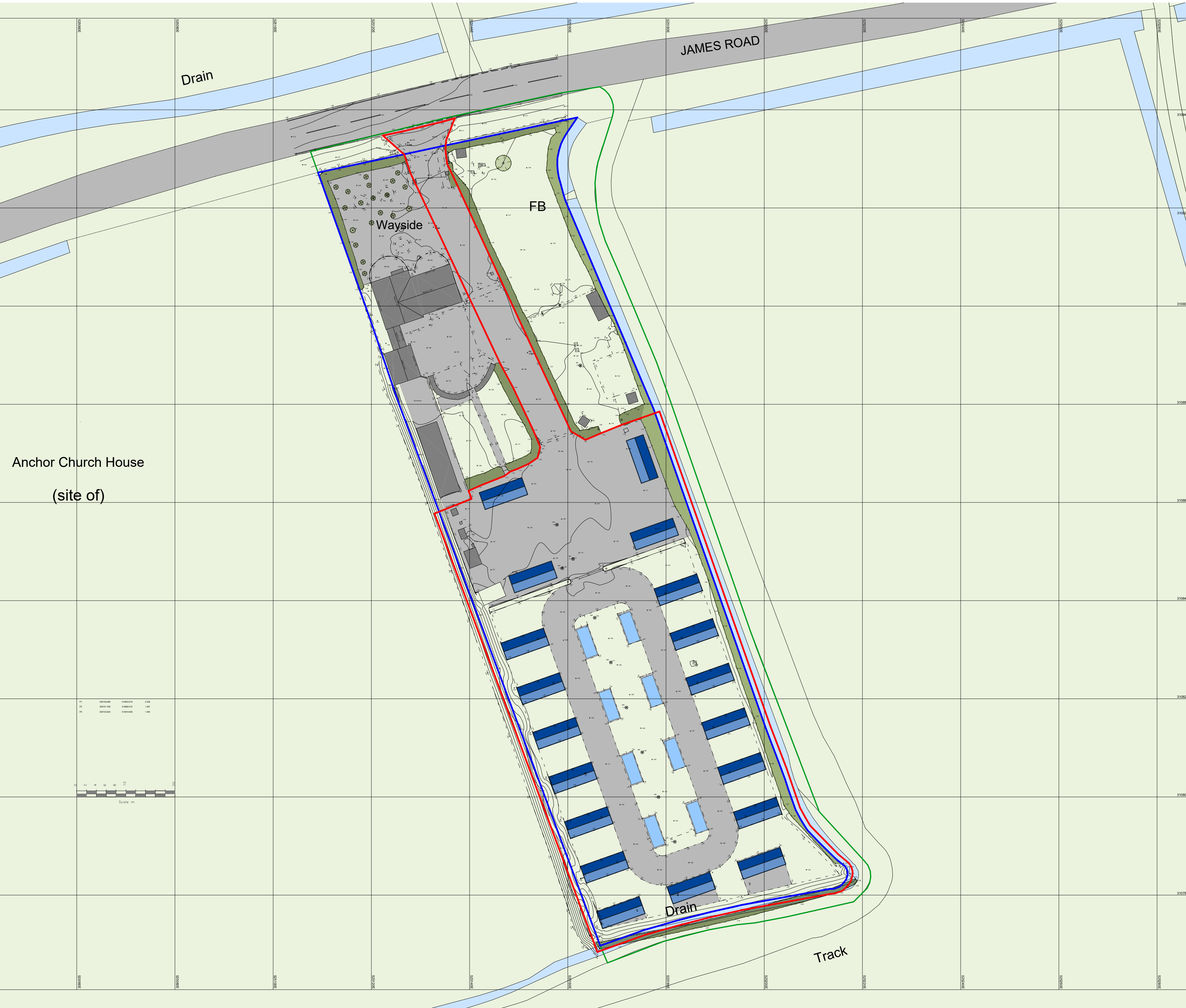


Client
Peter Foster
Project
20_1141D Wayside - Site Plan
Wayside,
James Road,
Crowland,
Peterborough,
PE6 0AA

Drawing Title		
Existing Site & Block Plan		
Scale @A2 1:500	Date 06/02/2025	Drawn EG
Case No 20_1141D	Status Initial Status	
DRAWING No 20_1141D-002	Rev P02	

ISO 19650 No:
20_1141D-GPS-ZZ-GF-DR-A-002
Green Planning Studio Ltd
Unit D Lunesdale,Upton Magna Business Park, SY4 4TT
t: +44 (0) 1743 709364
e: applications@gpsltd.co.uk
www.greenplanningstudio.co.uk

APPENDIX 4: PROPOSED SITE PLANS



Anchor Church House
(site of)

Line/Hatch Key

Application Boundary

Existing Structure

Existing Caravan

Existing Hardstanding

Existing Watercourse

Proposed Touring Caravan

Ownership Boundary

2023 Site Licence App.
(WK-202000720 / 20_1141A/B)

Existing Grassland

Indicative Tree

Existing Vegetaion

Existing Gate

Proposed Mobile Home

P02	Initial Transmittal	P02	EG	17/04/2026
P01	Initial Transmittal	P01	EG	06/02/2025
Issue ID	Issue Name	Current Revision	Initials	Date

Do not scale from this drawing except for planning application purposes. The contractor is to check all site dimensions, levels and sewer inverts before works commence. This drawing must be checked and read against any structural or specialist consultant drawings. The contractor is to comply in all respects with the current Building Regulations and BS Codes of Practice whether or not specifically stated on these drawings. This drawing is not intended to show details of foundations, ground conditions or ground contaminants and confirmation and/or investigation is to be carried out by suitable experts. This drawing and the building works/designs depicted are the copyright of Green Planning Studio Ltd and are not to be reproduced in any form or by any means without the written consent of Green Planning Studio Ltd.
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Green Planning Studio

Client

Peter Foster

Project

20_1141D Wayside - Site Plan

Wayside,
James Road,
Crowland,
Peterborough,
PE6 0AA

Drawing Title

Proposed Site Plan

Scale @A2
1:500

Date
06/02/2025

Drawn
EG

Case No
20_1141D

Status
Initial Status

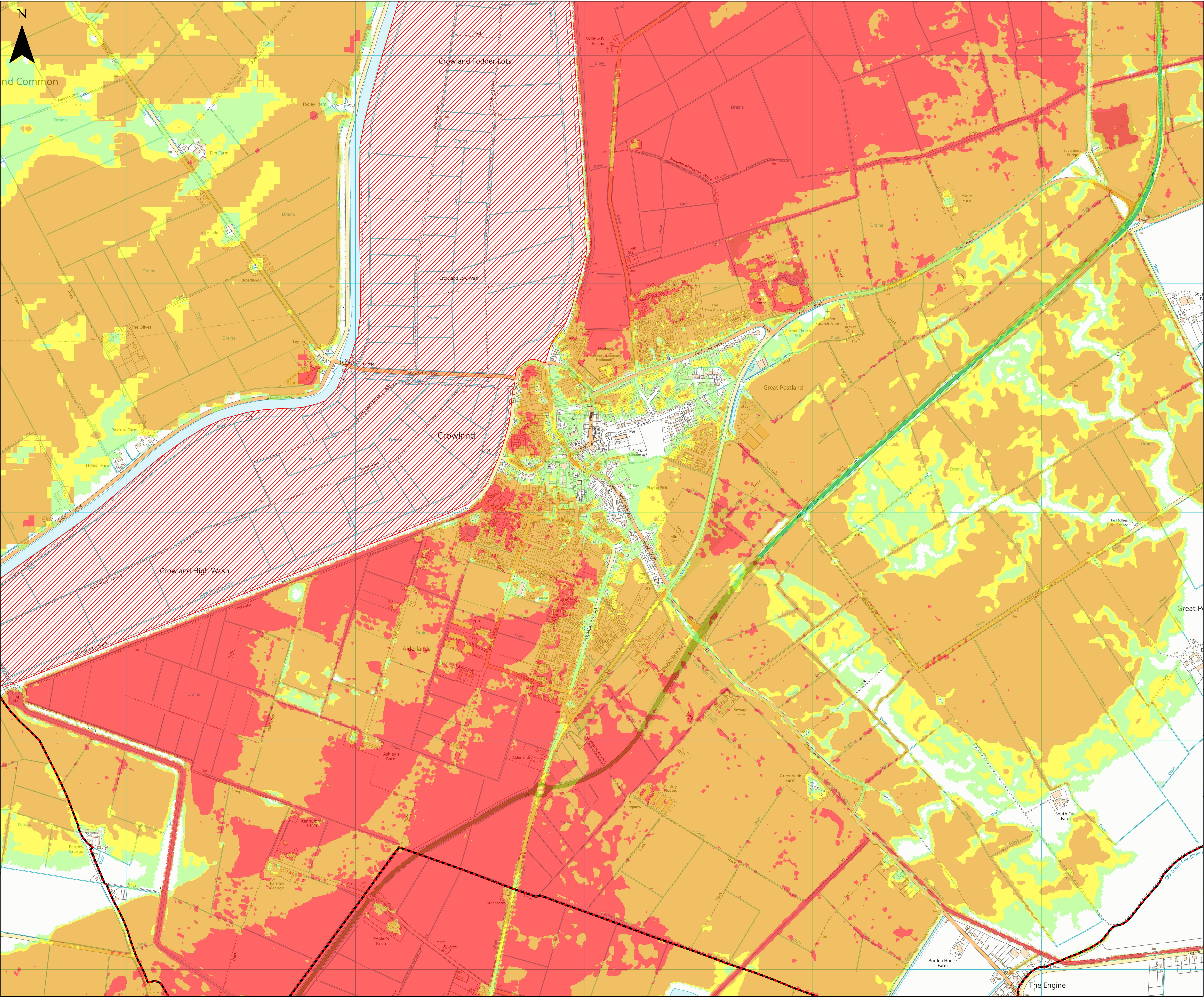
DRAWING No
20_1141D-003

Rev
P02

ISO 19650 No:
20_1141D-GPS-ZZ-GF-DR-A-003

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APPENDIX 5: SOUTH EAST LINCOLNSHIRE (2017) SFRA MAPS



NOTES

1. The potential flooding consequences shown on this map primarily relate to flooding from the sea and main rivers taking into account the presence of current flood risk management measures such as flood defences.
2. This update only included new flood risk information from River Welland (Fluvial), River Glen (Fluvial) and Tidal hazard mapping (River Welland, River Nene and the Wash sea defences). No new information from the Internal Drainage Boards and associated systems was used for this update.
3. In addition to the potential flood extents shown on this map, there may be shallow flooding in low-lying rural areas
4. The consequences designated as being a Residual Risk arise from direct overtopping of defences, where this would occur, together with breach failure which is assumed could occur at any point along the defences.
5. Functional Floodplain encompasses areas where water is intended to flow or be stored in times of flood.
6. Land outside South Holland District is not considered.
7. This map shows the extents only of the flooding probability bands relevant to the map Title

Map Legend

Max Hazard
(Flood Risk to People : FD2320)

Less than 0.75
(Low Hazard)

Between 0.75 and 1.25
(Danger for Some)

Between 1.25 and 2.0
(Danger for Most)

Greater than 2.0
(Danger for All)

Functional Floodplain

South Holland District Boundary

3	Oct 17	Modelling and Mapping Update
2	Feb 17	Modelling and Mapping Update
1	Dec 16	Modelling and Mapping Update
REV	DATE	REMARKS

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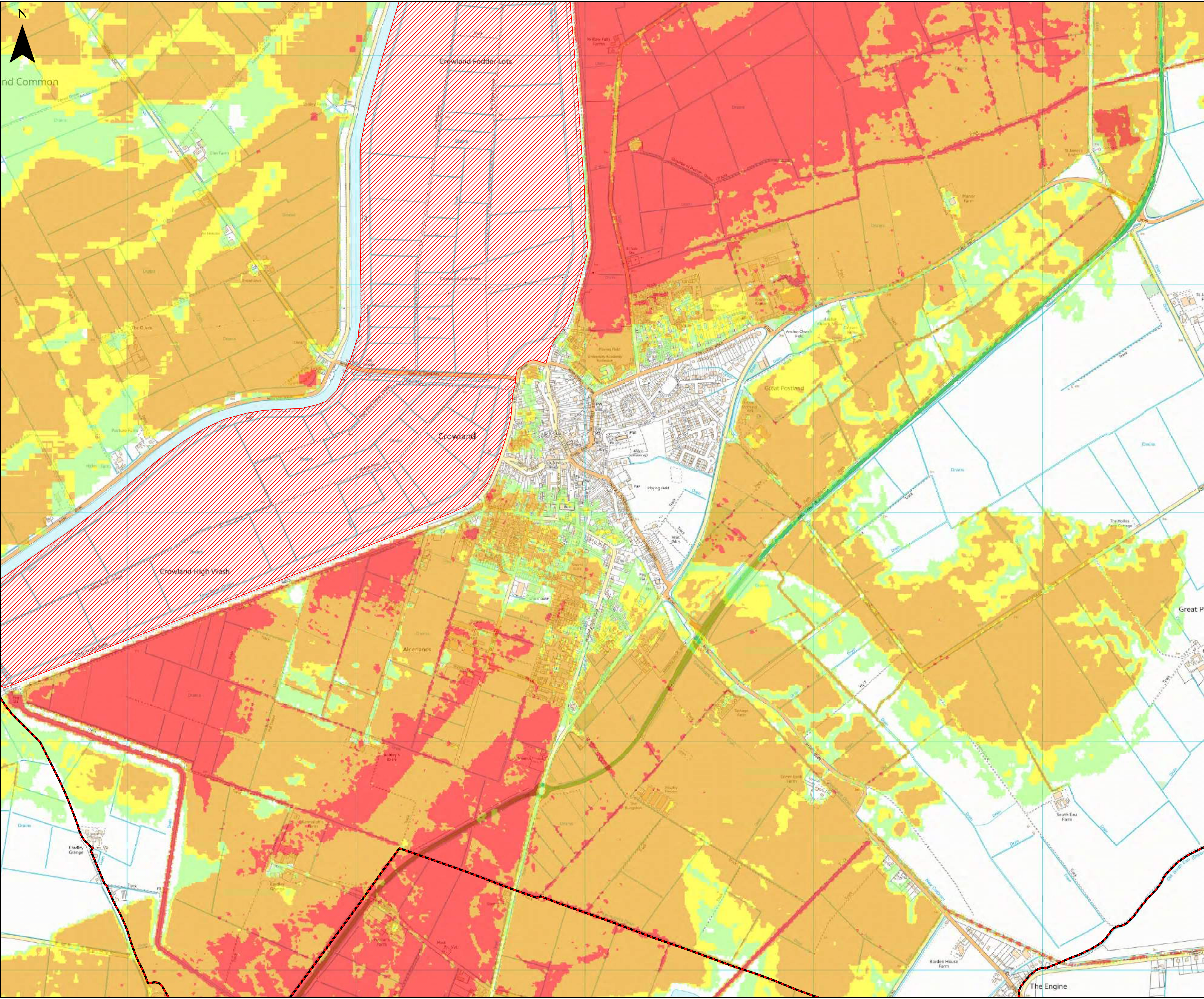


SOUTH HOLLAND DISTRICT COUNCIL
COUNCIL OFFICES
PRIORY ROAD
SPALDING
LINCOLNSHIRE
PE11 2XE

UPDATE OF STRATEGIC
FLOOD RISK ASSESSMENT

Residual Flood Hazard
Crowland - Year 2115
1% Fluvial / 0.5% Tidal Event Probability

DATE OF ISSUE: Oct 2017	REV NO: 3
SCALE: 1 : 7500 @ A1	MAP NO:



NOTES

1. The potential flooding consequences shown on this map primarily relate to flooding from the sea and main rivers taking into account the presence of current flood risk management measures such as flood defences.
2. This update only included new flood risk information from River Welland (Fluvial), River Glen (Fluvial) and Tidal hazard mapping (River Welland, River Nene and the Wash sea defences). No new information from the Internal Drainage Boards and associated systems was used for this update.
3. In addition to the potential flood extents shown on this map, there may be shallow flooding in low-lying rural areas
4. The consequences designated as being a Residual Risk arise from direct overtopping of defences, where this would occur, together with breach failure which is assumed could occur at any point along the defences.
5. Functional Floodplain encompasses areas where water is intended to flow or be stored in times of flood.
6. Land outside South Holland District is not considered.
7. This map shows the extents only of the flooding probability bands relevant to the map Title

Map Legend

Max Hazard
(Flood Risk to People : FD2320)

Less than 0.75
(Low Hazard)

Between 0.75 and 1.25
(Danger for Some)

Between 1.25 and 2.0
(Danger for Most)

Greater than 2.0
(Danger for All)






Functional Floodplain



South Holland District Boundary



	2	Feb 17	Modelling and Mapping Update
	1	Dec 16	Modelling and Mapping Update
REV	DATE	REMARKS	

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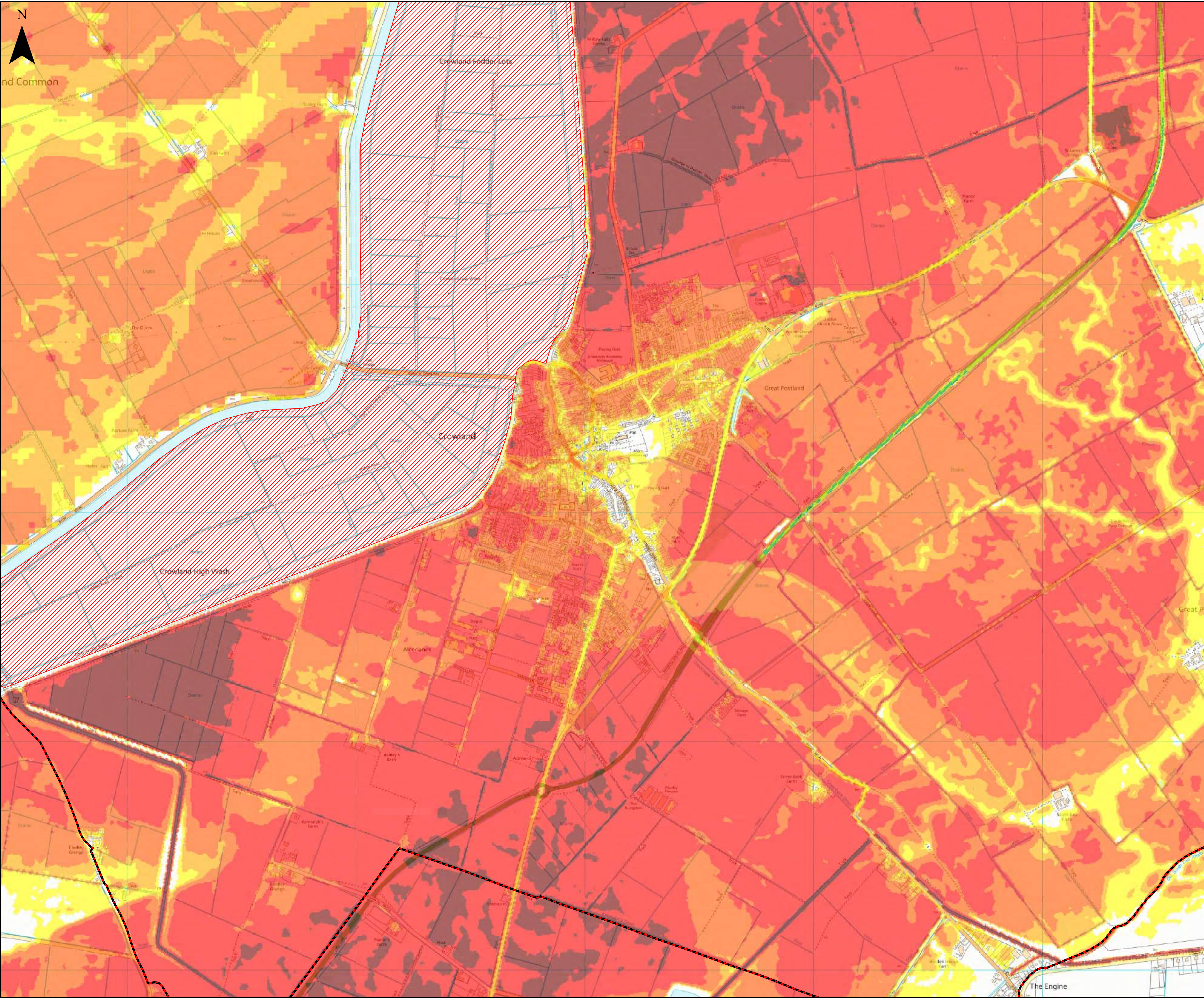


SOUTH HOLLAND DISTRICT COUNCIL
COUNCIL OFFICES
PRIORY ROAD
SPALDING
LINCOLNSHIRE
PE11 2XE

UPDATE OF STRATEGIC
FLOOD RISK ASSESSMENT

Residual Flood Hazard
Crowland - Present Day
1% Fluvial / 0.5% Tidal Event Probability

DATE OF ISSUE: Feb 2017	REV NO: 2
SCALE: 1 : 7500 @ A1	MAP NO:



NOTES

1. The potential flooding consequences shown on this map primarily relate to flooding from the sea and main rivers taking into account the presence of current flood risk management measures such as flood defences.
2. This update only included new flood risk information from River Welland (Fluvial), River Glen (Fluvial) and Tidal hazard mapping (River Welland, River Nene and the Wash sea defences). No new information from the Internal Drainage Boards and associated systems was used for this update.
3. In addition to the potential flood extents shown on this map, there may be shallow flooding in low-lying rural areas
4. The consequences designated as being a Residual Risk arise from direct overtopping of defences, where this would occur, together with breach failure which is assumed could occur at any point along the defences.
5. Functional Floodplain encompasses areas where water is intended to flow or be stored in times of flood.
6. Land outside South Holland District is not considered.
7. This map shows the extents only of the flooding probability bands relevant to the map Title

Map Legend

Peak Depth	
0m - 0.25m	
0.25m - 0.5m	
0.5m - 1m	
1m - 2m	
2m +	
Functional Floodplain	
South Holland District Boundary	

2	Feb 17	Modelling and Mapping Update
1	Dec 16	Modelling and Mapping Update
REV	DATE	REMARKS

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SOUTH HOLLAND DISTRICT COUNCIL
COUNCIL OFFICES
PRIORY ROAD
SPALDING
LINCOLNSHIRE
PE11 2XE

UPDATE OF STRATEGIC
FLOOD RISK ASSESSMENT

Residual Peak Depth
Crowland - Year 2115
0.1% Event Probability

DATE OF ISSUE: Feb 2017 REV NO: 2

SCALE: 1 : 7500 @ A1 MAP NO:

APPENDIX 6: ENVIRONMENT AGENCY CORRESPONDENCE

Mike Piotrowski
FloodingAndDrainage@colliers.com

Our ref: EIR2026/21209

Date: 28/05/2026

Dear Mike,

Flood Risk Information for James Road, Crowland

The flood risk information for the above site is set out below and attached. It is important you read any contextual notes on the maps provided.

If you are preparing a Flood Risk Assessment (FRA) for this site, please note this information may not be sufficient by itself to produce an adequate FRA to demonstrate the development is safe over its lifetime. Additional information may be required to carry out an appropriate assessment of all risks, such as the consequences of a breach in the flood defences.

We aim to review our information on a regular basis, so if you are using this data more than twelve months from the date of this letter, please contact us again to check it is still valid.

Please read the letter in full as the information covered has been updated in **August 2025**.

1. Flood Map for Planning

The attached map includes the current Flood Map for Planning for your area. The map indicates the Area at Risk of Flooding (Flood Zone 3) and the Extreme Flood Outline (Flood Zone 2) **assuming no flood defences exist**.

The Area at Risk of Flooding shows the land that could be impacted from a flood with a 0.5% or greater chance of occurring in any year for flooding from the sea, or a 1% or greater chance of occurring in any year for fluvial (river) flooding.

The Extreme Flood Outline shows the land that could be impacted from a flood which has between a 1% and 0.1% chance of occurring in any year for fluvial (river) flooding, or between a 0.5% and 0.1% annual probability of sea flooding, or the highest recorded historic extent if greater.

In some locations, such as around the fens and the large coastal floodplains, showing the area at risk of flooding assuming no defences may give a slightly misleading picture in that if there were no flood defences, water would spread out across these large floodplains. This flooding could cover large areas of land but to relatively shallow depths and could leave pockets of locally slightly higher land as isolated dry islands. It is important to understand the actual risk of the flooding to these dry islands, particularly in the event of defence failure.

The Flood Map for Planning also shows the location of formal raised flood defences and flood storage reservoirs. It represents areas at risk of flooding for present day only and does not take account of climate change.

The Flood Map for Planning only indicates the extent and likelihood of flooding from rivers or the sea. It should also be remembered flooding may occur from other sources such as surface water sewers, road drainage, etc.

2. Recorded Flood Outlines

The area was previously known to have flooded in March 1947 and April 1998.

A copy of the Recorded Flood Outlines Map showing the extent of previous recorded flooding in your area is attached. This only covers information we hold and it is possible recent flooding may have occurred which we are currently investigating, therefore this information may be subject to change. It is possible other flooding may have occurred which other organisations, such as the Lead Local Flood Authority (ie top tier council), Local Authority or Internal Drainage Board (where they exist), may have records.

3. Schemes in the area

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

4. Fluvial Flood Risk Information

This site is considered to be at risk of flooding from main rivers.

The site may also be at risk from local ordinary watercourses for which other risk management authorities, such as the Lead Local Flood Authority (i.e. top tier council) or Internal Drainage Board (where they exist) have responsibility.

4.1 Fluvial Defence Information

The existing fluvial defences reducing the risk of flooding to this site consist of Crowland-Cowbit Washes and embankment. They are in fair condition and provide protection against a flood event with a 1% chance of occurring in any year (1 in 100). We inspect these defences regularly to ensure that any potential defects are identified early.

4.2 Fluvial Modelled Levels and Flows

Available modelled fluvial flood levels and flows for the model nodes shown on the attached map are set out in the data table attached. This data is taken from the model named on the data table, which is the most up-to-date model currently available.

Please note these levels are “in-channel” levels and therefore may not represent the flood level on the floodplain, particularly where the channel is embanked or has raised defences.

Our models may not have the most up to date climate change allowances. In time we will update our models for the latest allowances. You should refer to ['Flood risk assessments: climate change allowances'](#) to check if the allowances modelled are appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.

4.3 Fluvial Modelled Flood Extents

Please find attached a map showing available modelled flood extents, taking into account flood defences, for your area. This data is taken from the model named on the map, which is the most up-to-date model currently available.

In some cases the flood extents shown may not be from main river, but may be from other sources such as IDB lowland drainage networks.

4.4 Fluvial Hazard Mapping

For certain locations we 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 a number of scenarios.

At present this information is available for fluvial flood risk in Northampton, Lincoln, Wainfleet and some isolated rural locations.

The number of locations we have this information for is expected to increase in time.

At present this site is not covered by any Environment Agency hazard mapping.

Detailed Hazard Mapping is available within the 2017 Update of South Holland Strategic Flood Risk Assessment. This can be downloaded via the following link:

<http://www.southeastlincslocalplan.org/water/>

5. Tidal Flood Risk Information

This site is not considered to be at risk from tidal flooding.

6. Development Planning

If you would like local guidance on preparing a flood risk assessment for a planning application, please contact our Sustainable Places team at LNplanning@environment-agency.gov.uk. It will help if you mention this data request and attach your site location plan.

We provide free preliminary advice; additional/detailed advice, review of draft FRAs and meetings are chargeable at a rate set to cover our costs, currently £115 (plus VAT) per hour of staff time. Further details are available on our website at <https://www.gov.uk/guidance/developers-get-environmental-advice-on-your-planning-proposals>.

General advice on flood risk assessment for planning applications can be found on GOV.UK at <https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>

We have provided information on risk of breach where it is available. If you are intending on using this information to prepare a Flood Risk Assessment you will need to check if the data meets your requirements. You may need to carry out further assessment (or modelling) for sites that are at residual risk (including from breach of defences), or additional locations or scenarios.

Climate change will increase flood risk due to overtopping of defences. Please note, unless specified otherwise, the climate change data included has an allowance for 20% increase in flow. Updated guidance on how climate change could affect flood risk to new development - 'Flood risk assessments: climate change allowances' was published on GOV.UK in **July 2021**. The appropriate updated climate change allowance should be applied in a Flood Risk Assessment.

You should also consult the Strategic Flood Risk Assessment produced by your local planning authority.

7. Permitting Information

Under the Environmental Permitting (England and Wales) Regulations 2016, permission must be obtained from the Environment Agency for any proposed activities which will take place:

- in, over, under or within 8 metres of a main river (16 metres if tidal)
- on or within 8 metres of a flood defence structure or culvert (16 metres if tidal)
- on or within 16 metres of a sea defence
- within 16 metres of any main river, flood defence (including a remote defence) or culvert for quarrying or excavation
- in a flood plain more than 8 metres from the river bank, culvert or flood defence structure (16 metres if tidal) if planning permission has not already been granted for the works

For further guidance and advice please visit our website: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits> or contact our local Partnerships and Strategic Overview team by email at psown@environment-agency.gov.uk. The team will be able to advise if an environmental permit or exemption registration is required and the fee applicable.

Please note that a permit is separate to and in addition to any planning permission granted. The applicant should not assume that such a permit will automatically be forthcoming once planning permission has been granted, and we would advise them to consult with us at the earliest opportunity.

8. Data Licence and Other Supporting Information

We respond to requests for recorded information we hold under the Freedom of Information Act 2000 (FOIA) and the associated Environmental Information Regulations 2004 (EIR).

This information is provided in accordance with the Open Government Licence which can be found here: <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Further information on flood risk can be found on the GOV.UK website at: <https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>

Rights of appeal

If you are not satisfied with our decision, you can contact us within two calendar months to ask for the decision to be reviewed. We will then conduct an internal review of our response to your request and give you our decision in writing within 40 working days.

If you are not satisfied with the outcome of the internal review, you can then make an appeal to the Information Commissioner Office, the statutory regulator for EIR and the Freedom of Information Act 2002. The address is: Information Commissioner's Office, Wycliff House, Water Lane, Wilmslow, Cheshire. SK9 5AF.

Tel: 0303 123 1113 (local rate) or 01625 545 745 (national rate) | Fax: 01625 524 510

Email: casework@ico.org.uk | Website: www.ico.org.uk

9. Other Flood Risk Management Authorities

The information provided with this letter relates to flood risk from main river or the sea. The Flood Map for Surface Water can be viewed at <https://www.gov.uk/check-long-term-flood-risk>

Additional information may be available from other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist).

I hope we have correctly interpreted your request. If you have any queries or would like to discuss the content of this letter further, please contact Christopher using the email address below and quoting our EIR reference number above.

Yours sincerely,

Christopher Hill

for John O'Neill

Welland and Nene Partnerships and Strategic Overview Team Leader

e-mail PSOWN@environment-agency.gov.uk

Enc.

Flood Map for Planning

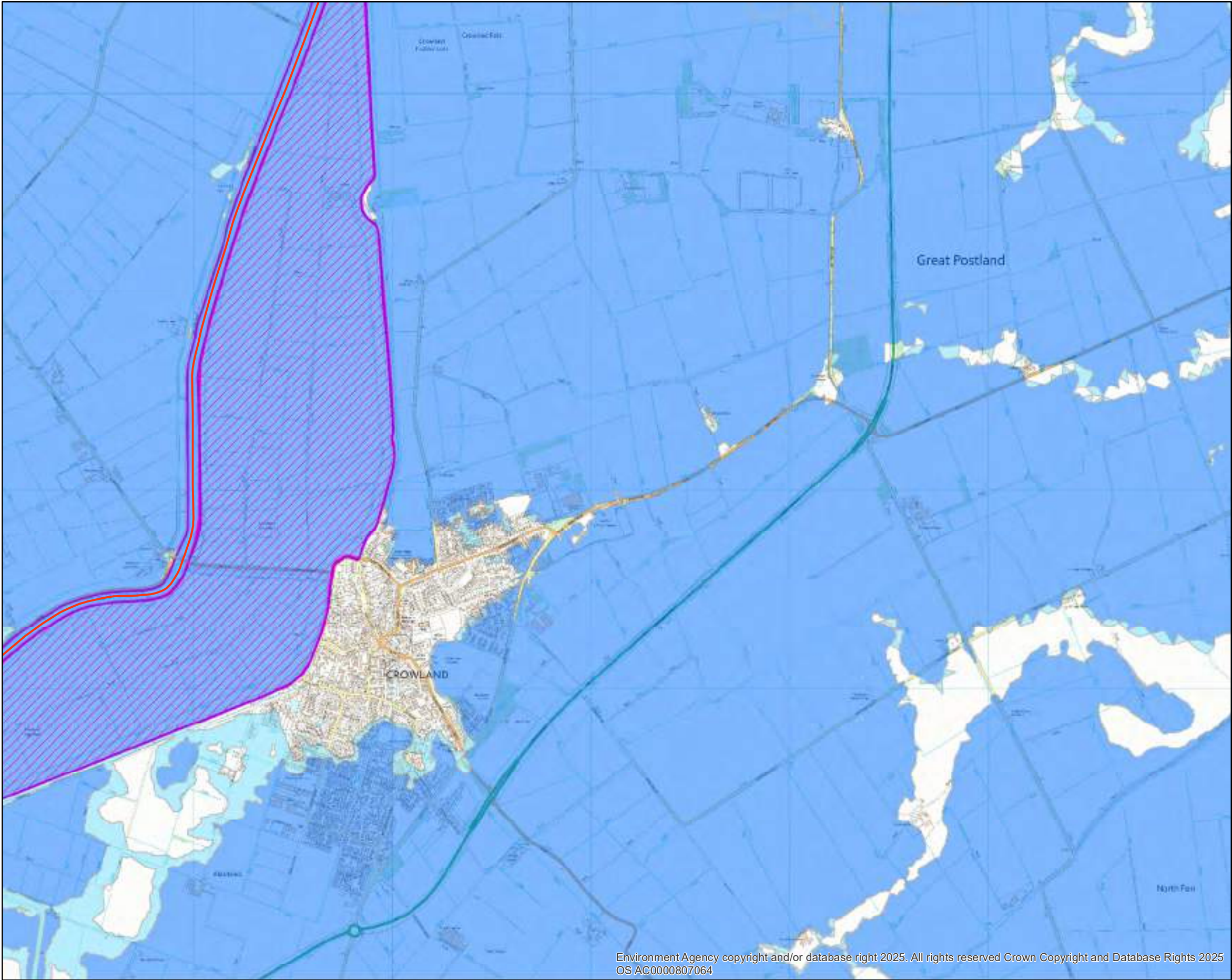
Recorded Flood Event Outlines Map

Modelled Node Points Map

Modelled Fluvial Levels and Flows Data Sheet

Modelled Flood Extent Maps

Flood Map centred on TF 25156 10871 - created May 2026 [Ref: EIR2026/21209]



Scale 1:20,000



Legend

- Main Rivers
- Raised Defences
- Flood Storage Areas

Flood Zones 2 and 3 Rivers and Sea

Flood Zone

- Flood Zone 2
- Flood Zone 3

Dark blue shows the area that could be affected by flooding, either from rivers or the sea, if there were no flood defences. This represents land that could be impacted by a flood which has a 1% (1 in 100) or greater chance of occurring in any year from rivers or 0.5% (1 in 200) or greater annual probability of flooding from the sea.

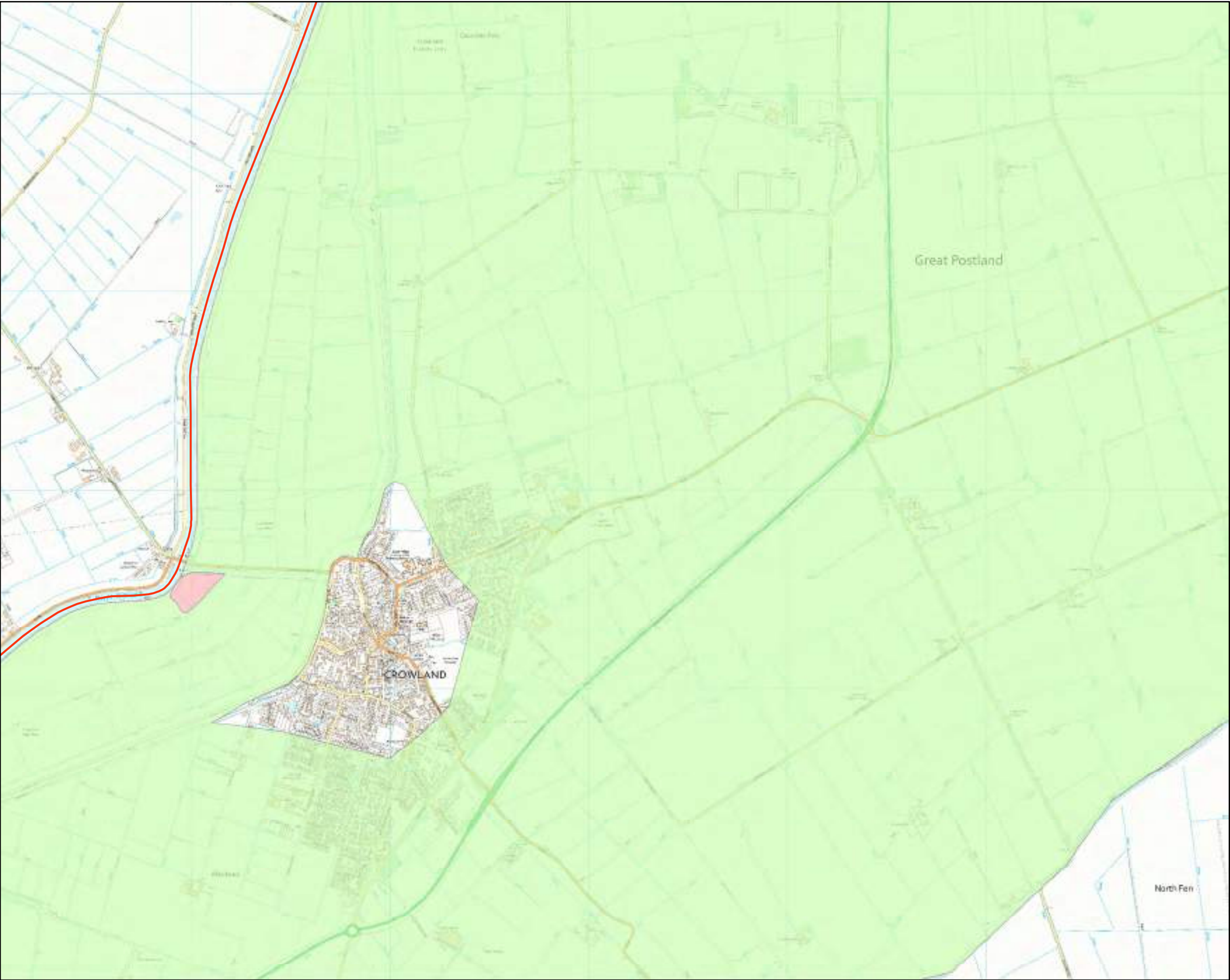
Light blue shows the extent of the Extreme Flood Outline. This represents land that could be impacted by a flood which has between a 1% and 0.1% (1 in 100 to 1 in 1000) chance of occurring in any year from rivers or between 0.5% and 0.1% (1 in 200 to 1 in 1000) annual probability of flooding from the sea, or the highest recorded historic extent if greater.

These two colours show the extent of the natural floodplain if there were no flood defences or certain other manmade structures and channel improvements. Sites outside the two extents, but behind raised defences, may be affected by flooding if the defences are overtopped or fail.

Created by the Partnerships and Strategic Overview Team, Kettering

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Historic Flood Map centred on TF 25156 10871 - created May 2026 [Ref: EIR2026/21209]



Scale 1:20,000



Legend

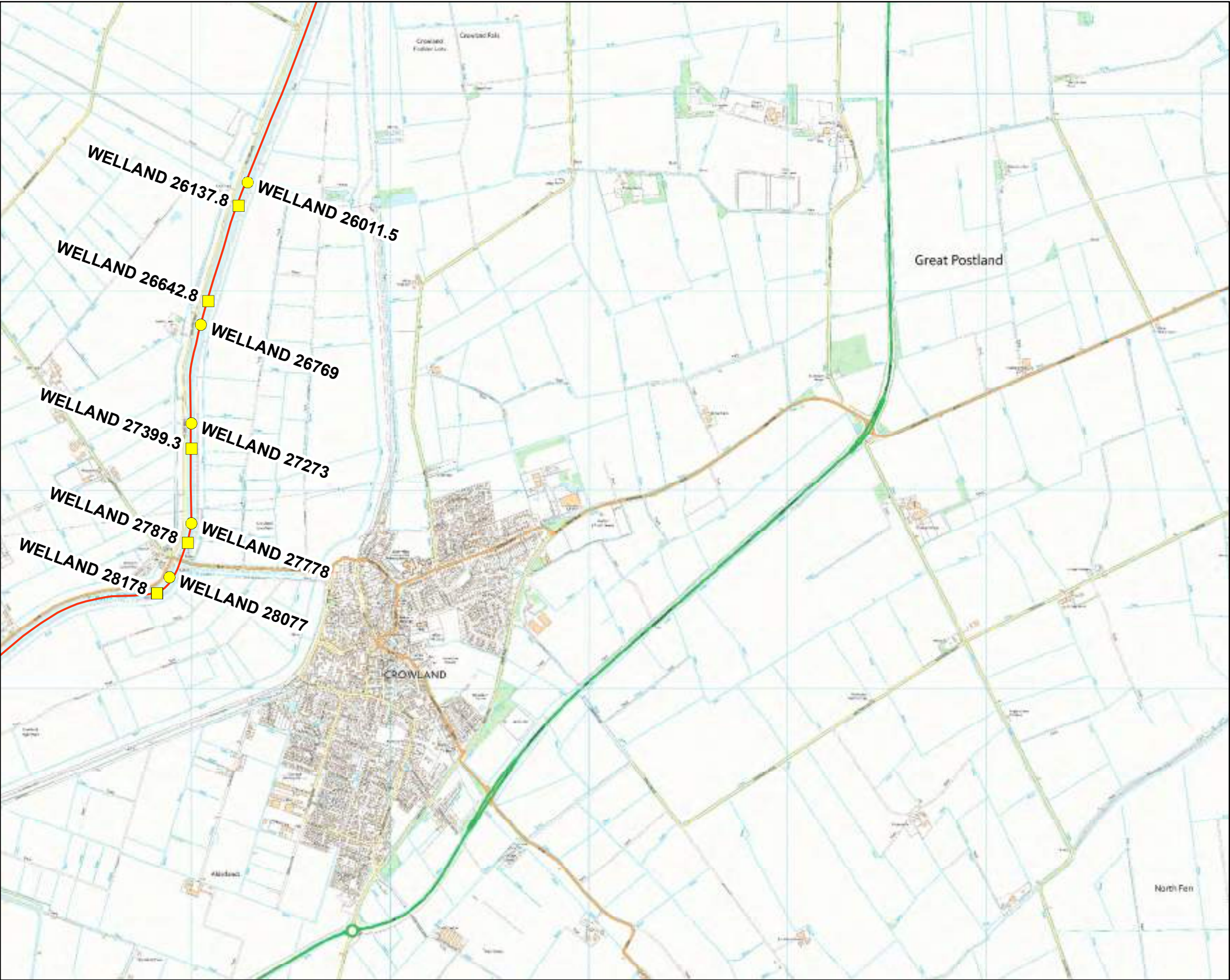
Main Rivers

Event name

- LNA_1947_March_River Welland_Crowland
- LNA_1998_April_River Welland

Created by the Partnerships and Strategic Overview Team, Kettering

Modelled Levels and Flows Model: Welland Glen (2016)
centred on TF 25156 10871 - created May 2026 [Ref: EIR2026/21209]



Scale 1:20,000



Legend

- Modelled Flows
- Modelled Levels
- Main Rivers

Created by the Partnerships and Strategic Overview Team,
Kettering

Datasheet [Ref: EIR2026-21209]
Model Name: Welland Glen
Model Date: 2016

Fluvial Flood Levels (mODN)

The fluvial flood levels for the model nodes shown on the attached map are set out in the table below. They are measured in metres above Ordnance Datum Newlyn (mODN).

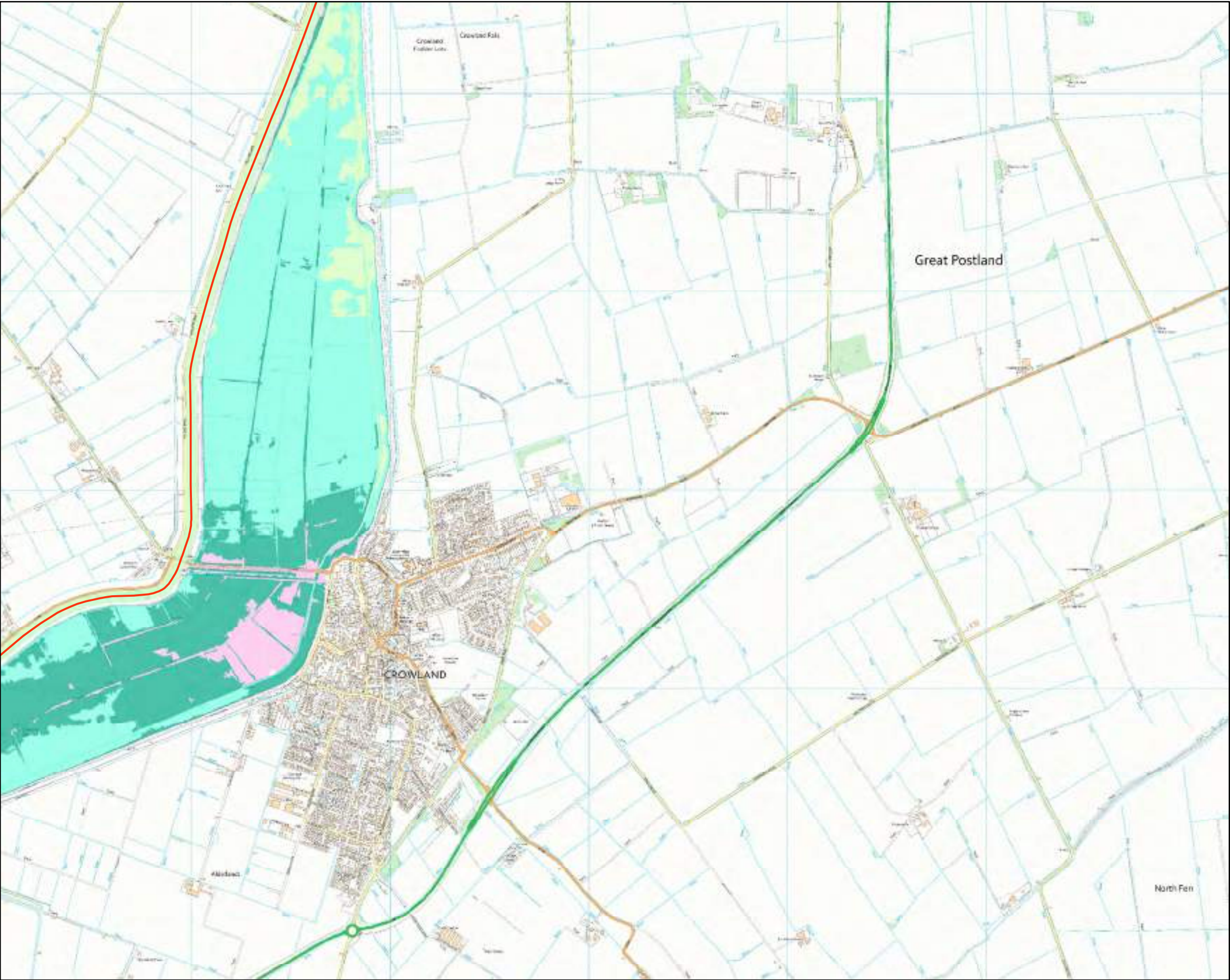
Node Label	Easting	Northing	Annual Exceedance Probability - Maximum Water Levels (mODN)											
			50% (1 in 2)	20% (1 in 5)	10% (1 in 10)	5% (1 in 20)	3.33% (1 in 30)	2% (1 in 50)	1.33% (1 in 75)	1% (1 in 100)	1% (1 in 100) inc 20% Climate Change	0.5% (1 in 200)	0.1% (1 in 1000)	0.1% (1 in 1000) inc 20% Climate Change
WELLAND 26011.5	523285	312552	3.81	4.14	4.37	4.63	4.72	4.78	4.81	4.82	4.84	4.83	4.83	4.84
WELLAND 26769	523050	311835	3.82	4.16	4.39	4.65	4.75	4.81	4.85	4.86	4.88	4.86	4.87	4.88
WELLAND 27273	523001	311339	3.83	4.17	4.40	4.67	4.77	4.83	4.88	4.89	4.90	4.89	4.89	4.90
WELLAND 27778	523002	310836	3.84	4.19	4.42	4.69	4.79	4.86	4.91	4.92	4.94	4.93	4.93	4.94
WELLAND 28077	522891	310564	3.85	4.20	4.43	4.70	4.81	4.89	4.94	4.96	4.97	4.96	4.96	4.97

Fluvial Flood Flows (m³/s)

The fluvial flood flows for the model nodes shown on the attached map are set out in the table below. They are measured in metres cubed per second (m³/s).

Node Label	Easting	Northing	Annual Exceedance Probability - Maximum Flows (m³/s)											
			50% (1 in 2)	20% (1 in 5)	10% (1 in 10)	5% (1 in 20)	3.33% (1 in 30)	2% (1 in 50)	1.33% (1 in 75)	1% (1 in 100)	1% (1 in 100) inc 20% Climate Change	0.5% (1 in 200)	0.1% (1 in 1000)	0.1% (1 in 1000) inc 20% Climate Change
WELLAND 26137.8	523239	312435	49.04	65.16	75.02	94.20	108.30	120.08	125.19	128.83	128.52	128.83	128.24	130.92
WELLAND 26642.8	523086	311956	48.66	64.79	75.02	94.25	108.46	120.64	126.01	129.66	129.48	129.76	129.19	131.94
WELLAND 27399.3	523001	311213	48.12	64.24	75.01	94.33	108.56	122.91	131.60	134.11	136.37	136.47	136.27	137.02
WELLAND 27878	522982	310739	47.77	63.90	75.00	94.39	108.63	124.90	136.19	139.29	141.80	141.85	141.80	142.84
WELLAND 28178	522829	310485	47.56	63.67	75.00	94.42	108.67	124.92	136.24	139.36	141.90	141.96	141.91	142.95

Modelled Flood Extents (with defences) Model: Welland Glen (2016)
centred on TF 25156 10871 - created May 2026 [Ref: EIR2026/21209]



Scale 1:20,000



- Legend**
- Main Rivers
 - 3.33% (1 in 30) fluvial event
 - 1% (1 in 100) fluvial event
 - 1% (1 in 100) inc 20% climate change fluvial event
 - 0.1% (1 in 1000) fluvial event
 - 0.1% (1 in 1000) inc 20% climate change fluvial event

Created by the Partnerships and Strategic Overview Team,
Kettering

Dear Mike

Reference: EIR2026-21209

Thank you for your email. We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

Please find a link below that will enable you to download the Products 5, 6 and 7 for the Welland Catchment Strategic model (2016) If you are prompted to create a free account, please use the email address that this data has been sent to, this will allow you to access the product files.

- <https://fcrm.quatrix.it/download/4fa8bd6a-9bda-4eed-8579-9dd4ab5109d0>

Please note this link will expire in 7 days.

This information is not available with the Open Government Licence but we may be able to license it to you under the [Environment Agency Conditional Licence](#).

Conditional Licence regarding: Welland Catchment Strategic model (2016)

Modelling Reports for the Welland Catchment Strategic model (2016) File format:
Adobe PDF (.pdf) format.

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Model Output Data for the Welland Catchment Strategic model (2016) File format:
Various GIS file format.

Information Warnings 1) Please be aware that model data is not raw, factual or measured but comprises of estimations or modelled results based on the data available to us.

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Calibrated and Verified Model Input Data for the Welland Catchment Strategic model (2016). File format: MIKE11 format.

Information Warnings:

1) If you propose to update the model in anyway or re-run with changed parameters with a view to presenting revised information for our approval at a later date, for example as part of a Flood Risk Assessment, you must discuss your proposed methodology with us first. Any modelling work done without prior agreement of the Environment Agency is done at your own risk.

2) If you use an existing model from the Environment Agency or another organisation, it is important to check if it:

- represents current risk

- uses the latest available datasets
- complies with current modelling standards
- is at a scale suitable for the assessment you're undertaking
- captures the detail required for a site-specific assessment
- makes use of current climate change allowances

You should be aware that:

- Environment Agency models are not designed to assess third party developments, so do not assume that they are suitable for your proposed development
- even if you use a recent model, you still need to review and possibly update it
- you should provide evidence of any modelling checks and subsequent updates you carry out and record these in the FRA model reporting
- you should refer to the Environment Agency's standard model and hydrology review templates when carrying out your model review

Please see the guidance at [Using modelling for flood risk assessments - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/using-modelling-for-flood-risk-assessments)

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The following conditions also apply to the above data:

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2. Notwithstanding the fact that the standard wording of the Environment Agency Conditional Licence indicates that it is perpetual, this Licence has a limited duration of 2 years at the end of which it will terminate automatically without notice.
3. We have restricted use of the Information as a result of legal restrictions placed upon us to protect the rights or confidentiality of others. In this instance it is because of third party data. If you contact us in writing (this includes email) we will, as far as confidentiality rules allow, provide you with details including, if available, how you might seek permission from a third party to extend your use rights.
- 4.1 The Information may contain some data that we believe is within the definition of "personal data" under the Data Protection Act 1998 but we consider that we will not be in breach of the Act if we disclose it to you with conditions set out in this condition and the conditions above. This personal data comprises names of individuals or commentary relating to property that may be owned by an individual or commentary relating to the activities of an individual.
- 4.2 Under the Act a person who holds and uses or passes to others personal data is responsible for any compliance with the Act and so we have no option but to warn you that this means you have responsibility to check that you are compliant with the Act in respect of this personal data.
5. The location of public water supply abstraction sources must not be published to a resolution more detailed than 1km². Information about the operation of flood assets should not be published.

6.1 Where we have supplied model data which may include model inputs or outputs you agree to supply to the Environment Agency copies of any assessments/studies and related outputs, modifications or derivatives created pursuant to the supply to you of the Information, all of which are hereinafter referred to as “the Data”.

6.2 You agree, in the public interest to grant to the Environment Agency a perpetual royalty free non-exclusive licence to use the Data or any part thereof for its internal purposes or to use it in any way as part of Environment Agency derivative products which it supplies free of charge to others such as incorporation into the Environment Agency's Open Data mapping products.

The above information is supplied for use, for the following project only:

- **Project title:** EIR2026-21209
- **Start date:** 28/05/2026
- **Expected end date:** 28/05/2028

However, you MUST first check the supporting information available online to determine if the conditions on use are suitable for your purposes. If they aren't, this information is not provided with a licence for use, and the data is provided for read right only.

Please get in touch with PSOWN@environment-agency.gov.uk if you have any further queries or contact us within two months if you'd like us to review the information we have sent, quoting the EIR reference number.

Rights of appeal

If you are not satisfied with our decision, you can contact us within two calendar months to ask for the decision to be reviewed. We will then conduct an internal review of our response to your request and give you our decision in writing within 40 working days.

If you are not satisfied with the outcome of the internal review, you can then make an appeal to the Information Commissioner Office, the statutory regulator for EIR and the Freedom of Information Act 2002. The address is: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire. SK9 5AF.

Tel: 0303 123 1113 (local rate) or 01625 545 745 (national rate) | Fax: 01625 524 510

Email: casework@ico.org.uk | Website: www.ico.org.uk

Kind regards,

Christopher Hill

+44 7385226602

FCRM Officer, Partnerships and Strategic Overview (Welland & Nene) | Lincolnshire and Northamptonshire

Environment Agency | Nene House, Pytchley Lodge Road, Kettering, NN15 6JQ

Christopher.hill@environment-agency.gov.uk | Team Email: PSOWN@environment-agency.gov.uk

APPENDIX 7: NORTH LEVEL IDB CORRESPONDENCE

FloodingAndDrainage

From: Paul Sharman <pds@northlevelidb.org>
Sent: 14 May 2026 09:35
To: FloodingAndDrainage
Subject: RE: FOI Flood Risk- Wayside, James Road, PE6 0JB

Dear Mr J Banks,

Further to your request for information regarding the above site.

Firstly, feel free to view the Boards website for catchment information.

If you require further information, we charge a fee of £200.00 + vat to cover officers time collating said flood risk assessment data, however, this will not include hydraulic modelling outputs.

To the best of my knowledge the Defra Flood Model Locations refer to Environment Agency Main River models, not IDB catchment models.

I look forward to hearing from you should you wish me to collate the data requested.

Kind regards,
Paul

Paul Sharman | Chief Executive

North Level District Internal Drainage Board

Drainage Office, Station Road, Thorney, Peterborough, PE6 0QE

Tel 01733 270333 | Mobile 07730 309872 | Fax 01733 270231

[website](#) | [email](#) | [twitter](#)

Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else.

We have checked this email and its attachments for viruses. But you should still check any attachment before opening it.

We may have to make this message and any reply to it public if asked to under the Freedom of information Act, Data Protection Act or for litigation.

From: Enquiries <enquiries@northlevelidb.org>
Sent: 12 May 2026 08:43
To: Paul Sharman <pds@northlevelidb.org>
Subject: FW: FOI Flood Risk- Wayside, James Road, PE6 0JB

Paul, who would be able to help with this one please?

Sharon Smith | Administrative Clerk

North Level District Internal Drainage Board

Drainage Office, Station Road, Thorney, Peterborough, PE6 0QE

Tel 01733 270333

From: FloodingAndDrainage <FloodingAndDrainage@colliers.com>
Sent: 11 May 2026 17:54

To: Enquiries <enquiries@northlevelidb.org>

Subject: FOI Flood Risk- Wayside, James Road, PE6 0JB

You don't often get email from floodinganddrainage@colliers.com. [Learn why this is important](#)

Dear North Level District IDB,

[CONFIDENTIAL]

We are undertaking a Flood Risk Assessment (FRA) at the following Site:

ADDRESS: Wayside, James Road, Crowland, Peterborough, PE6 0JB

NGR: 525171, 310844

SITE LOCATION PLAN: Below



Please could we obtain the following datasets from you:

1. Historic records and photographs of any flooding at the Site or within 100m;
2. The latest modelled flood data available for watercourses in the vicinity of the Site;
 - a. We would like to obtain your modelled flood output data for all modelled return period events, so that we can assess when the site begins to flood and also the maximum flood level in the largest flood affecting the Site. Should the site not be within the maximum extent of flooding of any models, we still require the model outputs.
 - b. Specifically, we understand from reviewing DEFRA's 'Flood Model Locations' dataset that the following models are likely to be the most up-to-date relevant models for the area:
 - i. North Level District IDB watercourses
 - c. Please can you confirm if the above models are the in the process of, or slated for updates which would supersede the presently available models
3. The details of any flood defence schemes which may be protecting the Site now;
4. The condition grade and maintenance comments for the nearest river channel and flood defences which are applicable to the Site;
5. The details of any proposed flood defence schemes which may serve to protect the Site in the future;

6. Contact details of any other organisations such as the LLFA, who may also be able to provide us with additional information, with regards to flooding and drainage.

Best Regards,

Jacob Banks

| United Kingdom
[Instagram](#) | [LinkedIn](#) | [X](#) | [YouTube](#)



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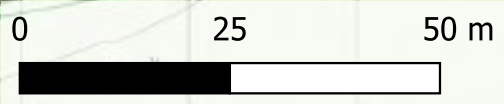
APPENDIX 8: PTP AND FOUL DRAINAGE

310900

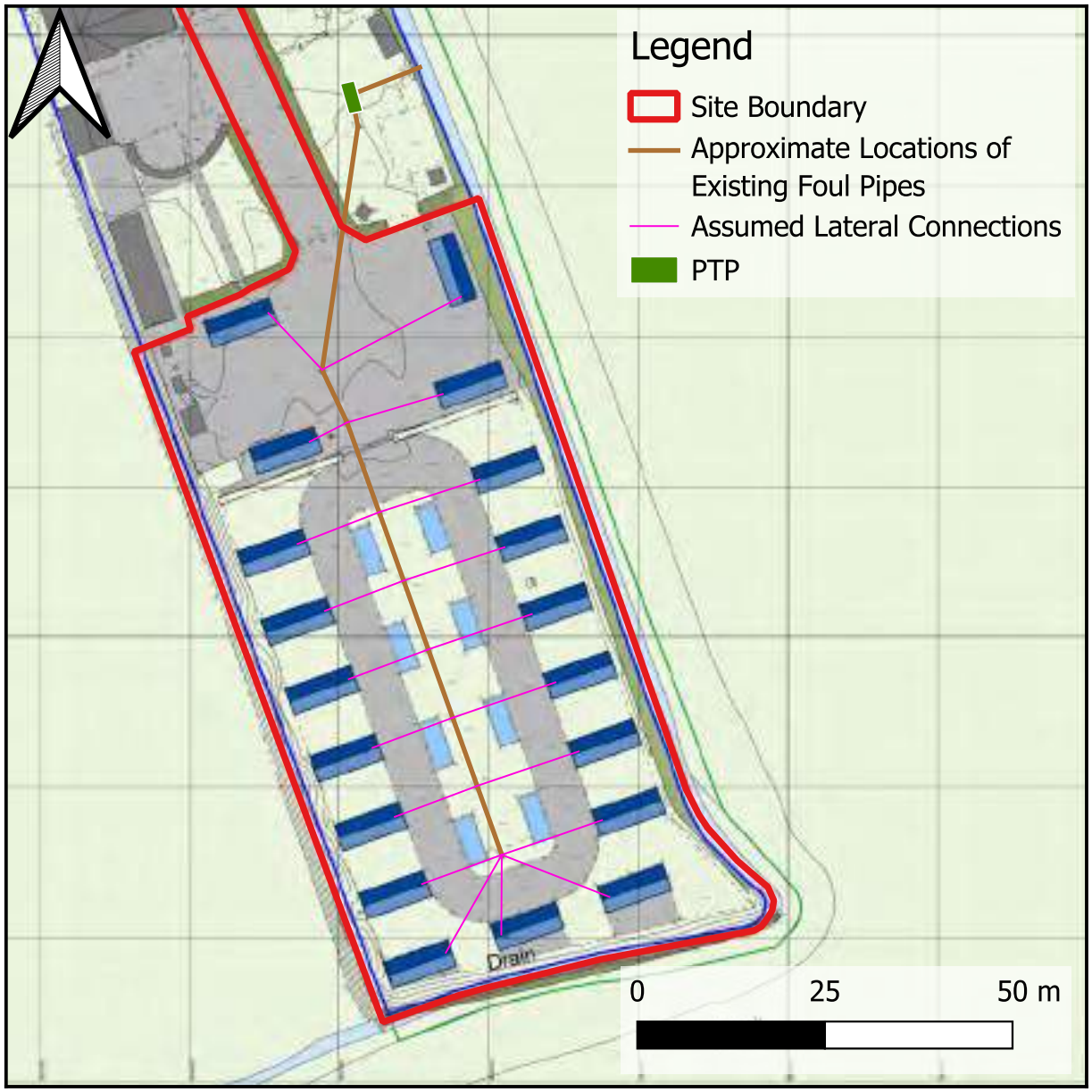
310800

Legend

- Site Boundary
- Approximate Locations of Existing Foul Pipes
- Assumed Lateral Connections
- PTP



525200



Banks, Jacob

From: Lee Marbury <lee.marbury@gpsltd.co.uk>
Sent: 29 May 2026 10:04
To: Banks, Jacob
Cc: Piotrowski, Mike
Subject: Re: Wayside, James Road, Peterborough
Attachments: Marsh-Ensign-STP-brochure.pdf

Hi Jacob,

Unfortunately, there are no plans for the foul drainage network; the application is retrospective. We can draw up an indicative plan based on his description of what has been installed, if you wish.

The PTP is a Marsh Ensign 25 - I have attached the brochure for your reference.

Kind regards,

Lee Marbury
Senior Planner
Green Planning Services Ltd
Tel: 01743 709364
www: <http://greenplanning.co.uk/>



www.linkedin.com/in/leemarbury



On Thu, 14 May 2026 at 17:11, Banks, Jacob <Jacob.Banks@colliers.com> wrote:

Hello Lee,

I hope you are well.

I visited the Wayside site in Peterborough on Tuesday 12th May. Please find attached my site notes and photographs, along with a link below providing access to the full set of photos taken during the visit.

 [Wayside, James Road, Peterborough](#)

During the inspection, I noted that the site is served by a foul drainage system connected to a package treatment plant (PTP). The PTP is currently not operational, as it has yet to be connected to a power supply. The plant and its associated tank are located to the north-east of the Application Boundary and discharge via an outfall into a drainage ditch along the eastern boundary. Inspection chambers associated with the foul drainage system were also observed within the central area of the site.

Please could you liaise with the client to obtain:

- Plans of the foul drainage network; and
- Detailed design information for the PTP,

so that we can confirm the system has sufficient capacity to serve the proposed development.

Apologies if you are already familiar with the site, but I wanted to highlight that the PTP appears to extend beyond the Application Boundary, as shown on drawing *20_1141D_002 Existing Site and Block Plan P02* (attached). I am not sure whether the red line boundary will need to be adjusted to account for this?

Please let me know if you would like to discuss any of the above.

Kind regards,

Jacob Banks

Floods and SuDS Consultant | [View My Profile](#)
Project & Building Consultancy | Environmental
Direct: +44 1212657509 | Mobile: +44 7350 440170
103 Colmore Row | Birmingham, B3 3AG | United Kingdom
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From: Piotrowski, Mike
Sent: 07 May 2026 09:56
To: Lee Marbury <lee.marbury@gpsltd.co.uk>
Cc: Banks, Jacob <Jacob.Banks@colliers.com>
Subject: Wayside Peterborough RE: Fwd: Colliers fee proposal: Potential New Instruction - PETERBOROUGH, Wayside, James Road

Hi Lee,

Hope all is well, I just wanted to double check that we're fine contacting the Client directly to arrange our site visit?

It starting to ramp up on our side, so ideally we would like to attend either tomorrow, Saturday morning or later next week.

All the best,

Mike

Mike Piotrowski

Technical Director of Flood Risk and Drainage | [View My Profile](#)
Project & Building Consultancy | Environmental
Direct: +44 121 265 7676 | Mobile: 0781 855 1008
103 Colmore Row | Birmingham, B3 3AG | United Kingdom
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From: Lee Marbury <lee.marbury@gpsltd.co.uk>
Sent: 01 May 2026 09:30
To: Emma Foster <fosteremma36@yahoo.co.uk>
Cc: Piotrowski, Mike <Mike.Piotrowski@colliers.com>

Subject: Re: Fwd: Colliers fee proposal: Potential New Instruction - PETERBOROUGH, Wayside, James Road

Hi,

you need to pay for the Stage 1 survey - £5,295.

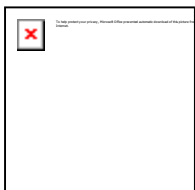
The others may be recommended depending on the outcome. I will send a copy of the quote by Docusign; once this is done, you should contact Mike Piotrowski at Mike.Piotrowski@colliers.com to arrange payment details.

Kind regards,

Lee Marbury
Senior Planner
Green Planning Services Ltd
Tel: 01743 709364
www: <http://greenplanning.co.uk/>



www.linkedin.com/in/leemarbury



On Wed, 29 Apr 2026 at 19:08, Emma Foster <fosteremma36@yahoo.co.uk> wrote:

How much is the one we need doing please

[Sent from Yahoo Mail for iPhone](#)

On Wednesday, April 29, 2026, 9:59 am, Lee Marbury <lee.marbury@gpsltd.co.uk> wrote:

Hi,

Please see the fee quote attached.

Kind regards,

Lee Marbury
Senior Planner
Green Planning Services Ltd
Tel: 01743 709364
www: <http://greenplanning.co.uk/>



www.linkedin.com/in/leemarbury



----- Forwarded message -----

From: **Piotrowski, Mike** <Mike.Piotrowski@colliers.com>
Date: Thu, 23 Apr 2026 at 10:54
Subject: Colliers fee proposal: Potential New Instruction - PETERBOROUGH,
Wayside, James Road
To: Lee Marbury <lee.marbury@gpsltd.co.uk>
Cc: gps applications <applications@gpsltd.co.uk>, Howlett, Daniel
<Daniel.Howlett@colliers.com>, Keevil, Caroline <Caroline.Keevil@colliers.com>

Morning Lee,

Hope all is well on your side?

Please see our fee proposal attached to support in preparing a flood risk and drainage assessment report, with consideration of the changes the developer have already made to the site and to reflect the most recently revised development proposals.

I will also request the EA's most recent modelled data F.O.C. today, in case this has changed since the previous FRA was compiled in 2025, as you may know it can take the EA up to 20 working days to respond.

If you have any questions and/or would like to instruct on the basis of the attached fee proposal do let me know.

All the best,

Mike

Mike Piotrowski

Technical Director of Flood Risk and Drainage | [View My Profile](#)

Project & Building Consultancy | Environmental

Direct: +44 121 265 7676 | Mobile: 0781 855 1008

103 Colmore Row | Birmingham, B3 3AG | United Kingdom

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From: Lee Marbury <lee.marbury@gpsltd.co.uk>
Sent: 17 April 2026 17:27
To: Piotrowski, Mike <Mike.Piotrowski@colliers.com>
Subject: Potential New Instruction

Hi Mike,

Would you be able to provide a quote for an FRA for an application I'm preparing?

We have already had one done, but since then the client has very helpfully done a fair amount of work on the site (which obviously doesn't match the proposed plans we'd drawn), meaning it is basically useless to us! I've attached it for reference.

We are proposing 19 residential static caravans and 8 tourers. The site currently has permission for 33 tourers, so we would like to use that as the baseline for the assessment, with a view to demonstrating that there will be less risk to life under the new proposal, because there would be fewer caravans on Site than can be lawfully stationed.

I've also attached the location, existing and proposed plans.

Client Details:

Name: Peter Foster

Site: Wayside, James Road, Crowland, Peterborough, PE6 0JB

email: fosteremma36@yahoo.co.uk

Tel: 07717 371150

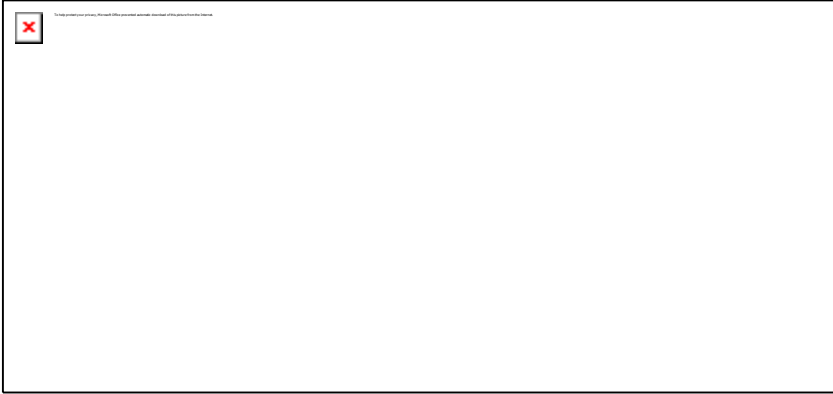
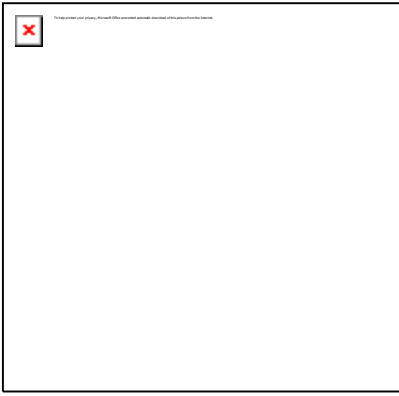
Hope all is well,

Kind regards,

Lee Marbury

Senior Planner
Green Planning Services Ltd
Unit D Lunesdale
Upton Magna Business Park
Upton Magna
Shrewsbury
SY4 4TT

Tel: 01743 709364
www: <http://greenplanning.co.uk/>



ENSIGN[®]

Package sewage treatment plants



Intensive biological processing for off-mains wastewater

Overview

The Marsh Ensign is widely regarded as one of the most efficient, reliable and economical sewage treatment plants on the market.

The standard Ensign has been adapted to improve reliability and the Ensign:Ultra now brings unique enhancements to further improve noise level, treatment efficiency and final effluent quality.

Class leading performance

Tested and approved to BSEN12566-3/A1:2009 all Ensign units provide treatment well within national consent requirements. Published test results of 11.5:19.2:8.4mg/ltr (BOD:suspended solids:ammonia), with influent concentrations on test higher than those chosen by most competitor plants, effectively equates to 97% pollutant removal.

Unrivalled choice

Ranging in size from 4 to 50 PE in Ultra, Standard and Shallow versions of each, and with a wide range of ancillaries, almost all site, consent and budget requirements can be met by units from the range.

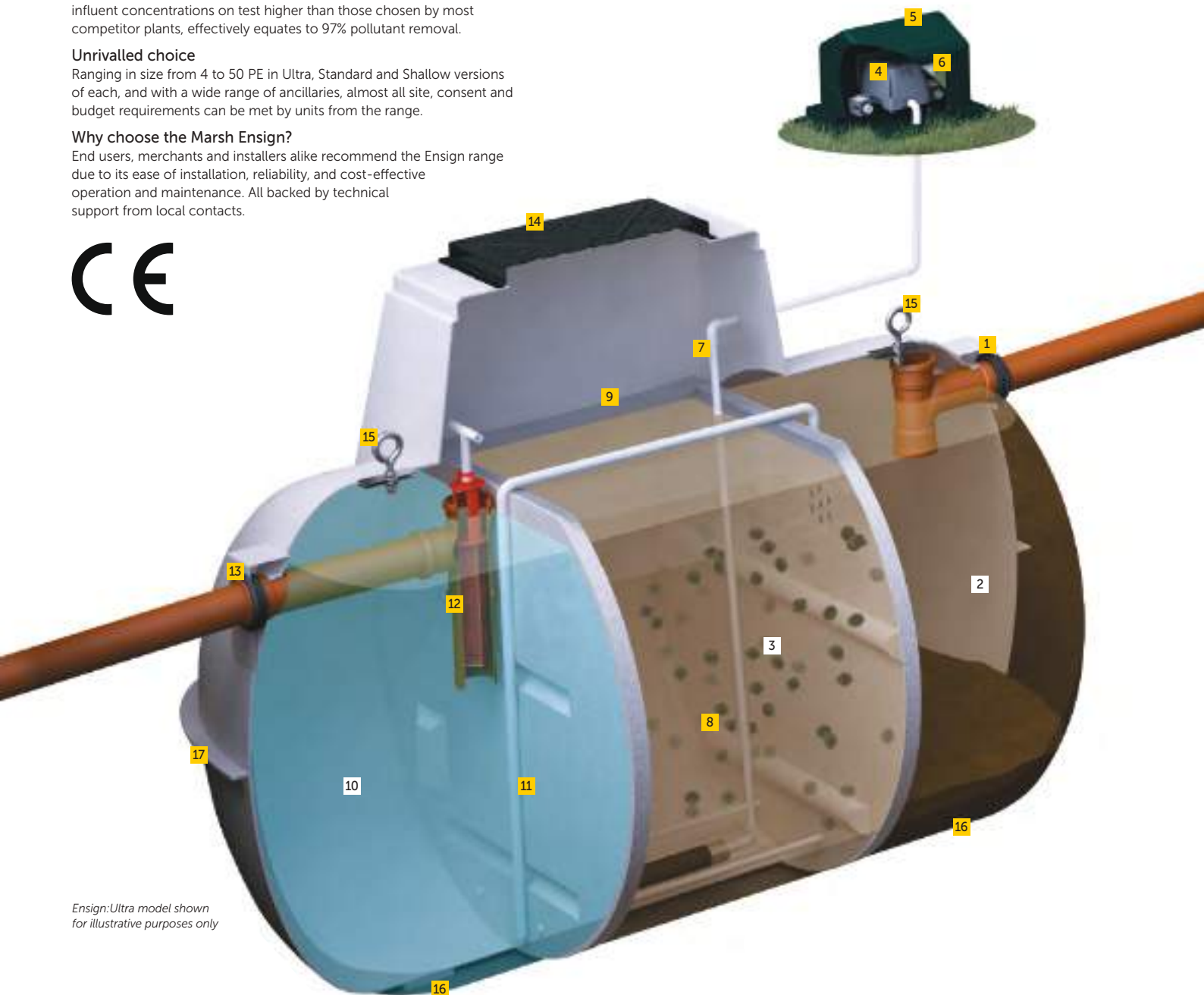
Why choose the Marsh Ensign?

End users, merchants and installers alike recommend the Ensign range due to its ease of installation, reliability, and cost-effective operation and maintenance. All backed by technical support from local contacts.



Operating principle

In addition to anaerobic digestion taking place in the primary settlement chamber [2] the Ensign:Ultra unit allows the clarified water to pass into a second 'aeration' chamber [3] where it is treated to remove the dissolved constituents. Here aerobic bacteria, supported by diffused air and mobile media, ensures full treatment is achieved before the treated effluent and 'sloughed off' bacteria flows to a final settlement chamber [10]. The final effluent is then discharged to the drainage field or watercourse via a Polylok filter.



Ensign:Ultra model shown for illustrative purposes only



The Marsh Ensign is widely regarded as one of the most efficient, reliable and economical sewage treatment plants on the market

Benefits

- 1 Inlet with 'Forsheda seal'**
Forsheda seal provides flexibility in the joint for easier installation.
Optional risers to increase invert depth are available.
- 2 Primary settlement chamber**
- 3 Aeration chamber**
- 4 Advanced compressor with alarm (Ensign:Ultra units only)**
Near silent compressor ensures minimal running, maintenance and servicing costs. Integral alarm detects low pressure in air line. (Regular Low-energy compressor on Ensign:Standard models).
- 5 Compressor housing - internal or external options available**
The compressor can be housed internally or externally with no difference in cost.
External recommended to increase compressor life, and supplied as standard on 4PE, shallow and pumped outlet versions.
- 6 RCD/Electrical connection (Ensign:Ultra units only)**
The RCD box provides easier installation and provides a higher degree of safety. (Regular plug/socket connection on Ensign:Standard models).
- 7 PVC pressure pipe/diffuser(s)**
Provides a protective conduit for the air diffuser line. Can be easily removed for maintenance and cleaning.
- 8 Bio-media**
High specification bio-media (310m³ per m²) and membrane diffusers ensure even circulation to eliminate 'dead spots'. The bio-media is contained by a stainless steel securing mesh to ensure no migration during handling or potential flooding.
- 9 Stainless steel mesh (Ensign:Ultra units only)**
Retains media in aeration chamber during transportation and handling, and in the event of flooding.
- 10 Final settlement chamber**
- 11 32mm sludge return**
Larger diameter sludge return prevents the possibility of blockages and improves system circulation. Provides higher effluent quality whilst balancing flow over a 24 hour period or periods of intermittent use.
- 12 Unique Polylok tertiary filter (Ensign:Ultra units only)**
The Polylok tertiary filter reduces suspended solids and BOD by a further 40% helping to extend drainage field life.
- 13 Outlet with 'Forsheda seal'**
Forsheda seal provides flexibility in the joint for easier installation.
Optional pumped outlets are available.
- 14 Impermeable lid (Ensign:Ultra units only)**
Heavy duty lid/frame improves strength and durability whilst blending into the surrounding environment. (Regular lid on Ensign:Standard models).
- 15 Integral lifting eyes**
For safe and secure on-site handling.
- 16 Stabilising feet**
Stabilising feet prevents the tank from rolling and allows safe and steady transportation and installation.
- 17 Unique 'keying-in' lip**
Assists anchoring into granular or concrete surrounds.

Guidance notes

Package Sewage Treatment Plant's (or PSTP's) are often a suitable option where groundwater in the surrounding environment is vulnerable, drainage field percolation values are restrictive, or direct discharge to a water course or surface water sewer is the preferred discharge method.

- PSTP's should be sized using the latest version of British Water Flows & Loads which provides detailed information on sewage production figures and sizing calculations
- Regulatory authorities for the control of pollution in the UK normally require treatment plants conforming to BSEN12566:3 to be demonstrated as capable of producing a minimum effluent discharge quality of 20:30:20 (Biochemical Oxygen Demand;Suspended Solids: Ammoniacal Nitrogen in mg/ltr), although in certain areas more stringent site-specific qualities may be required
- No surface water should enter the system as this can reduce the system's capacity and cause solids to be flushed out which may prematurely block drainage field or cause pollution
- As with septic tanks sludge should be removed annually or in line with manufacturers instructions

Many domestic sewage treatment plants offered by "internet resellers" claim to hold EN12566-3 compliance. This does not necessarily mean compliance with the UK National Forward, May 2007.

These plants may have been tested in their country of origin but not tested to the same criteria as Marsh Industries, where we strictly adhere to the UK National Forward. Contact contracts@marshindustries.co.uk for more information.

Shallow units

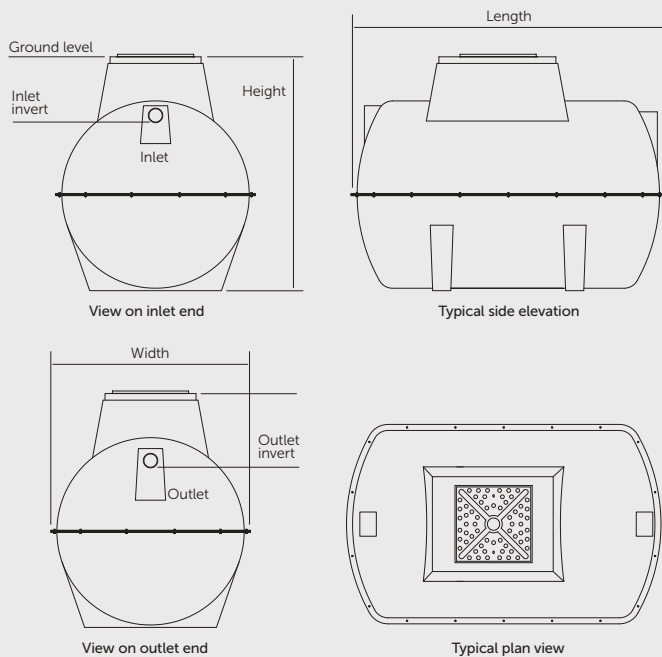
Common sewage treatment plants on the market often exceed 2.3m high. Marsh Industries offer a range of shallow plants from 4-35PE that are only 1.6m in height, meaning installation is not only possible*, but easier and safer too.

**Shallow Ensign's are often favoured when hard rock site conditions mean deeper alternatives, involving costly and time-consuming excavation.*

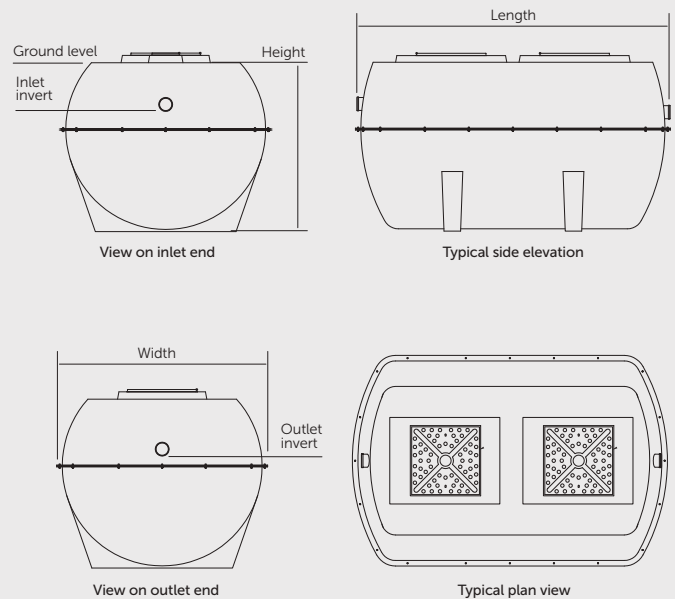


Specifications

Ensign:Ultra and Ensign:Standard



Shallow Ensign:Ultra and Shallow Ensign:Standard



Ensign:Ultra and Ensign:Standard

Model (Pop)	Length +/-50mm	Width +/-50mm	Height +/-50mm	Inlet		Outlet	
				Invert	Ø	Invert	Ø
4	1600	1332	1575	540	110	600	110
6	2602	1650	1935	550	110	625	110
8	2602	1650	1935	550	110	625	110
10	2602	1650	1935	550	110	625	110
12	2860	1912	2139	550	110	625	110
16	2860	1912	2284	720	110	800	110
20	3650	1912	2284	720	160	800	160
25	3650	1912	2284	770	160	850	160
30	4200	1912	2284	770	160	850	160
35	4200	1912	2284	770	160	850	160
40	5200	1912	2284	770	160	850	160
45	5200	1912	2284	770	160	850	160
50	5200	1912	2284	770	160	850	160

Shallow Ensign:Ultra and Shallow Ensign:Standard

Model (Pop)	Length +/-50mm	Width +/-50mm	Height +/-50mm	Inlet		Outlet	
				Invert	Ø	Invert	Ø
6	2860	1912	1600	500	110	575	110
8	2860	1912	1600	500	110	575	110
10	2860	1912	1600	500	110	575	110
12	2860	1912	1600	500	110	575	110
16	3400	1912	1600	500	110	575	110
20	4200	1912	1600	500	160	575	160
25	4200	1912	1600	500	160	575	160
30	5200	1912	1600	500	160	575	160
35	5200	1912	1600	500	160	575	160

Notes:

- > Larger population sewage treatment plants may be supplied as multiple tank configurations.
- > For precise tank sizes and configurations, please contact Marsh Industries
- > All dimensions in mm



APPENDIX 9: GREENFIELD RUNOFF CALCULATIONS

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	09/06/2026
Calculated by	Jacob Banks
Reference	0336023 PETERBOROUGH, Wayside,
Model version	2.2.3

Location

Site name	Wayside
Site location	



Site easting (British National Grid)	525170
Site northing (British National Grid)	310837

Site details

Total site area (ha)	0.553	ha
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MORE INFO

Greenfield runoff

Method

Method	IH124
--------	-------

IH124

	<u>My value</u>	<u>Map value</u>
SAAR (mm)	576 mm	554
How should SPR be derived?	Estimate using BFI	
BFIHOST	0.681	
SPR	0.267	
QBar (IH124) (l/s)	0.6 l/s	

Growth curve factors

	<u>My value</u>	<u>Map value</u>
Hydrological region	5	5
1 year growth factor	0.87	
2 year growth factor	0.89	
10 year growth factor	1.65	
30 year growth factor	2.45	
100 year growth factor	3.56	
200 year growth factor	4.21	

Results

Method	IH124
Flow rate 1 year (l/s)	0.5 l/s
Flow rate 2 year (l/s)	0.6 l/s
Flow rate 10 years (l/s)	1.0 l/s
Flow rate 30 years (l/s)	1.5 l/s
Flow rate 100 years (l/s)	2.2 l/s
Flow rate 200 years (l/s)	2.6 l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent ‘zero’ figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at [uksuds.com](https://www.uksuds.com) (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at [uksuds.com/terms-conditions](https://www.uksuds.com/terms-conditions) (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

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APPENDIX 10: SURFACE WATER RUNOFF CALCULATIONS

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1991	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	
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The calculations in the following sheets should relate either to the footprint of the proposed development and or the entire site area. In either case, be consistent.

The following colour conventions have been used throughout this sheet:

inputs

calculations

cell values reference another cell

Input parameters for run-off calculations		
Country	England	
Total site area	5526	m ²
Area proposed for development	5526	m ²
Current permeable ground cover	5,526	m ²
Current impermeable ground cover	0	m ²
Proposed permeable ground cover	4,916	m ²
Proposed impermeable ground cover	611	m ²
Urban Creep Allowance	10%	
Final impermeable ground cover	672	m ²
SPR	0.27	
SAAR	576	mm
Region	5	
30yr Climate change factor	35%	
100yr Climate change factor	40%	
Discharge Rate	0.50	l/s
Run-off coefficient	100%	

Current impermeable area %	0.0%
Proposed impermeable area %	12.2%
Change in permeable area	611
Change in impermeable area	672
Change in impermeable area %	12.2%

Rainfall event (6hr duration)	Greenfield run-off rates (l/s)	Existing run-off rates(l/s)	Potential run-off rates without attenuation (l/s)	Potential minus existing (l/s)
1 in 1 year	0.53	0.53	2.25	1.72
1 in 2.3 year (QBAR)	0.62	0.62	2.42	1.80
1 in 10 year	1.01	1.01	3.99	2.98
1 in 30 year	1.43	1.43	5.23	3.80
1 in 30 year + 35% CC	1.93	1.93	7.07	5.13
1 in 100 year	1.99	1.99	6.80	4.81
1 in 100 year + 40% CC	2.78	2.78	9.52	6.74

Rainfall event	Greenfield run-off volume (m³)	Existing run-off volume (m³)	Potential run-off volume without attenuation (m³)	Potential minus existing (m³)
1 in 1 year	36.13	36.13	48.59	12.45
1 in 2.3 year (QBAR)	38.94	38.94	52.36	13.42
1 in 10 year	64.73	64.73	86.20	21.48
1 in 30 year	84.09	84.09	113.07	28.98
1 in 30 year + 35% CC	113.52	113.52	152.64	39.13
1 in 100 year	109.24	109.24	146.89	37.65
1 in 100 year + 40% CC	152.94	152.94	205.65	52.71

Return Period	Runoff rate restriction (l/s)	Critical Storm Duration (hr)	Attenuation Volume Required (m³)	Volume required above previous return period
1 in 30 year	0.50	4	27.95	N/A
1 in 30 year + 35% CC	0.50	6	40.87	12.92
1 in 100 year	0.50	6	38.92	10.97
1 in 100 year + 40% CC	0.50	8	59.78	20.86

SuDS Feature	Treatment Stage	Land Use Class	Discharge Method	Mitigation Indices				
				Total Suspended Solids (TSS)	Metals	Hydrocarbons		
Filter Strip	Primary	A	Groundwater	0.40	0.40	0.50		
Filter Drain	Secondary			0.20	0.20	0.20		
Swale	Primary			0.50	0.60	0.60		
Bioretention System	Tertiary			0.40	0.40	0.40		
Permeable Pavement	Secondary			0.35	0.30	0.35		
Detention Basin	Secondary			0.25	0.25	0.30		
Pond	Tertiary			0.35	0.35	0.25		
Wetland	Tertiary			0.40	0.40	0.40		
Cumulative Mitigation Indices				2.85	2.90	3.00		
Required Mitigation Indices				0.60	0.50	0.60		
Cumulative – Required Indices				2.25	2.40	2.40		

The calculations in the following sheets should relate either to the footprint of the proposed development and or the entire site area. In either case, be consistent.

The following colour conventions have been used throughout this sheet:

inputs

calculations

cell values reference another cell

Input parameters for run-off calculations		
Country	England	
Total site area	5526	m ²
Area proposed for development	5526	m ²
Current permeable ground cover	5,526	m ²
Current impermeable ground cover	0	m ²
Proposed permeable ground cover	4,599	m ²
Proposed impermeable ground cover	927	m ²
Urban Creep Allowance	10%	
Final impermeable ground cover	1,020	m ²
SPR	0.27	
SAAR	576	mm
Region	5	
30yr Climate change factor	35%	
100yr Climate change factor	40%	
Discharge Rate	0.50	l/s
Run-off coefficient	100%	

Current impermeable area %	0.0%
Proposed impermeable area %	18.5%
Change in permeable area	927
Change in impermeable area	1,020
Change in impermeable area %	18.5%

Rainfall event (6hr duration)	Greenfield run-off rates (l/s)	Existing run-off rates(l/s)	Potential run-off rates without attenuation (l/s)	Potential minus existing (l/s)
1 in 1 year	0.53	0.53	2.55	2.02
1 in 2.3 year (QBAR)	0.62	0.62	2.75	2.12
1 in 10 year	1.01	1.01	4.51	3.50
1 in 30 year	1.43	1.43	5.93	4.50
1 in 30 year + 35% CC	1.93	1.93	8.01	6.07
1 in 100 year	1.99	1.99	7.70	5.72
1 in 100 year + 40% CC	2.78	2.78	10.79	8.01

Rainfall event	Greenfield run-off volume (m³)	Existing run-off volume (m³)	Potential run-off volume without attenuation (m³)	Potential minus existing (m³)
1 in 1 year	36.13	36.13	55.04	18.91
1 in 2.3 year (QBAR)	38.94	38.94	59.32	20.38
1 in 10 year	64.73	64.73	97.34	32.61
1 in 30 year	84.09	84.09	128.09	44.01
1 in 30 year + 35% CC	113.52	113.52	172.93	59.41
1 in 100 year	109.24	109.24	166.41	57.17
1 in 100 year + 40% CC	152.94	152.94	232.98	80.04

Return Period	Runoff rate restriction (l/s)	Critical Storm Duration (hr)	Attenuation Volume Required (m³)	Volume required above previous return period
1 in 30 year	0.50	6	47.31	N/A
1 in 30 year + 35% CC	0.50	8	68.43	21.12
1 in 100 year	0.50	10	66.30	18.99
1 in 100 year + 40% CC	0.50	12	100.77	34.47

SuDS Feature	Treatment Stage	Land Use Class	Discharge Method	Mitigation Indices				
				Total Suspended Solids (TSS)	Metals	Hydrocarbons		
Filter Strip	Primary	A	Groundwater	0.40	0.40	0.50		
Filter Drain	Secondary			0.20	0.20	0.20		
Swale	Primary			0.50	0.60	0.60		
Bioretention System	Tertiary			0.40	0.40	0.40		
Permeable Pavement	Secondary			0.35	0.30	0.35		
Detention Basin	Secondary			0.25	0.25	0.30		
Pond	Tertiary			0.35	0.35	0.25		
Wetland	Tertiary			0.40	0.40	0.40		
Cumulative Mitigation Indices				2.85	2.90	3.00		
Required Mitigation Indices				0.60	0.50	0.60		
Cumulative – Required Indices				2.25	2.40	2.40		

20540
22925
43465

APPENDIX 11: EXTENT OF SURVEY AND LIMITATIONS

Extent of Survey and Limitations

Section 1 shall apply to all our appointments. The relevant sections 2 to 10 will only apply where the terms of our appointment state we are providing the corresponding service. For example, where we are appointed to provide a pre-acquisition survey, sections 1 and 2 below will apply to that appointment.

1.	STANDARD LIMITATIONS	1
2.	ENVIRONMENTAL.....	3
3.	FLOOD RISK ASSESSMENT, FLOOD RISK TECHNICAL NOTE AND COASTAL EROSION TECHNICAL NOTE	4
4.	DILAPIDATIONS	5
5.	ENERGY PERFORMANCE CERTIFICATES.....	6
6.	BANK OR FUND MONITORING.....	6
7.	RIGHTS OF LIGHT AND DAYLIGHT	6
8.	PARTY WALL TERMS – BUILDING OWNER AND ADJOINING OWNER...7	
9.	ENERGY & SUSTAINABILITY SURVEYS AND STATEMENTS	8
10.	ENERGY AUDITS (INCLUDING ESOS, SECR AND NET ZERO CARBON ASSESSMENTS).....	8

1. Standard Limitations

Inspection and Concealed Parts: Our report will cover all parts of the site made available to us during our visual inspection of the property, which is normally and safely accessible without the use of ladders, and therefore exclude all ceiling, wall and floor voids unless stated within the report. Where inspection of roof areas by use of access hoists or a drone is required this will be agreed with you prior to inspection. The structure and fabric will not be opened up for further investigation. Those parts of the building and engineering services that are concealed, inaccessible or covered will not be inspected and confirmation that such parts are free from defects cannot be provided. Where we feel further investigation is merited, reference will be made in our report. Our services survey is based on a visual inspection and comment on the condition and the quality of the installation relating to normal good standards. We will specifically exclude tests relating to the performance of any heating, air conditioning or ventilation systems, pipe pressure tests, electrical or drainage tests. The omission of such tests means that certain problems could exist which are not reflected in our report. No inspection or comment is made on the below ground drainage installations or service conduits unless instructed otherwise.

Occupied Buildings: Where buildings are occupied at the time of our inspection access to some areas may be restricted or denied although these areas will be noted in our report. Regardless of occupation, we will not lift fitted carpets, nor disturb any part of the fabric or fittings which are fixed or where lifting may cause damage.

Budget Costs: Where budget costs are included in our report, these costs are for guidance purposes only and will not be calculated from measured quantities but will be based on knowledge and experience of similar repair or replacement situations. Costs are inclusive of contractor's preliminaries but exclusive of all contingencies, professional fees and VAT. They will be based on current prices and no allowances will be made for inflation. Access costs for high level works will be included. There will be no allowances for loss or damage as a result of force majeure, terrorism, discovery or removal of any deleterious materials or out of hours working.

Estimates are not to be thought of as a substitute for obtaining competitive quotations from reputable contractors. We will not investigate whether the cost of carrying out all necessary works immediately will be different in cost to carrying them out individually, as and when required.

Information: In preparing our report we will carry out a study of information from a variety of publicly available sources, as well as the materials to be supplied by or on behalf of our client ("Information"). We will use our professional judgement and experience to evaluate and interrogate the Information, however we are not auditing the Information and we cannot guarantee that it is accurate and complete in all respects. Colliers shall not be liable for any errors or omissions in the Information, or for losses arising as a result of such errors or omissions.

Where previous reports have been provided by the client for our review, a peer review may be required, and we will advise the client accordingly. Due to the uncertainty inherent in the estimation of all parameters in Information contained in reports prepared by others, we cannot and do not guarantee the accuracy or correctness of any interpretation. The opinions and interpretations presented in our reports represent our technical interpretation of the Information provided to us, using reasonable skill and care.

Specialist Consultants / Contractors: Where specialist consultants or contractors are engaged we may make reference to their findings in our report, but this should not be considered as a substitute for reading their report in its entirety.

Compliance with Legislation: In respect of planning permissions and building regulations consents we will review relevant documentation made available to us and liaise with your lawyers in this regard. If documentation is missing we will record this as a risk in our report, as should your lawyer. Our inspection will involve a review of the state of compliance with Statutory Requirements such as Workplace Regulations, Fire Regulations, Equality Act and other relevant matters. We will provide general comments on these matters in our report. Please note that compliance with these Regulations often requires a more detailed specialist study and / or the preparation of a risk assessment. Such studies and risk assessments are beyond the scope of our report. Where appropriate we will make recommendations for further specialist surveys.

Changes to legislation, guidance and site conditions: our reports are given as at a specific date, and we are not able to future proof our reports. After a report is issued, any number of changes, including legislative and regulatory changes, as well as industry best practice guidelines, may occur, and clients may wish to instruct a review of reports where there have been significant guidance / legislation changes. Further, in certain disciplines such as flood risk analysis, ground conditions can change so rapidly, that a report may be effectively out of date a few months after it written. Colliers cannot accept liability for losses arising as a result of post-report changes whatever the cause or nature of that change.

Weather conditions: Our inspection may be restricted by the prevailing weather conditions at the time of our inspection.

Communicable Disease – we shall not be liable in respect of any losses arising directly or indirectly from;

- a) A *Communicable Disease* or the fear or threat (whether actual or perceived) of a *Communicable Disease* regardless of any other cause or event contributing concurrently or in any other sequence thereto;

- b) any action taken to control, prevent, isolate, quarantine, suppress, mitigate or in any way relating to any actual or suspected outbreak of any *Communicable Disease* or the fear or threat (whether actual or perceived) of a *Communicable Disease*;
- c) instructions, orders, requests, restrictions or limitations given by any national or local government, regulatory or statutory body, health authority or organisation relating to any *Communicable Disease*.

A *Communicable Disease* means any disease which can be transmitted by means of any substance, medium or agent from any organism to another organism where:

- i. the substance, medium or agent includes, but is not limited to, a virus, bacterium, parasite or other organism or any variation thereof, whether deemed living or not, and
- ii. the method of transmission, whether direct or indirect, includes but is not limited to, airborne transmission, bodily fluid transmission, transmission from or to any surface or object, solid, liquid or gas or between organisms, and
- iii. the disease, substance or agent can cause or threaten damage to human health or human welfare or can cause or threaten damage to, deterioration of, loss of value of, marketability of or loss of use of property.

Reliance: The issued findings or reports following our inspection are for the benefit of our named client only and no liability will be accepted to any third party except by way of separate instrument.

Deleterious and Hazardous Materials

Generally: Our report and survey excludes any investigation into the unsuitable use of deleterious or hazardous materials except in so far as such matters may come to our knowledge in the normal course of inspecting the property and state of repair. We will advise you if we consider there is a significant possibility that deleterious or hazardous materials exist at the property, although we will not undertake or commission specific inspections, laboratory testing or reports unless this possibility has been raised by us as a concern and further instructions received which in any event will be confined to the following: admixtures / aggregates in concrete, asbestos, brick slips, calcium silicate brickwork, high alumina cement, lead, urea formaldehyde foam, woodwool cement slab (used as permanent shuttering), aluminium composite panels, thin stone panels.

Many factors including location, use, design and quantity determine whether a material is deleterious or not and, therefore, the inclusion in the material in the above list does not, of itself, imply that it is deleterious.

As a result of the Grenfell tower fire in 2017, external cladding systems including the materials used in them remain under intense scrutiny. There continues to be wide-ranging discussions in the Construction Industry over the use of combustible cladding materials, particularly (but not limited to) to buildings in excess of 18m in height or over 6 storeys. In our report, we will report on the suspected use of any combustible materials where this can be ascertained from a review of as-built information, or if it is suspected from our inspection. However, it may not be possible to ascertain purely from a visual inspection the presence or not of combustible materials and we cannot be held liable for not identifying their presence in such circumstances.

Where composite cladding panels may be identified in our report no intrusive testing will be undertaken to determine the type of insulation, classification of the insulating core or whether this is approved by the Loss Prevention Certification Board (LPCB) unless instructed otherwise.

Concrete: Where instructed to undertake a concrete investigation, our specialist report will be based on a visual examination of the concrete structure in sample test locations only. Whilst such test locations are chosen to be representative of the structure as a whole, we are not able to confirm that the structure is free from structural defects other than deleterious effect of HAC, chlorides and reinforcement corrosion durability.

Asbestos: Where instructed to undertake a specialist asbestos survey, we cannot guarantee that all asbestos containing materials will be identified, despite the best endeavours of our asbestos sub-consultant. Where instructed, every effort will be made to remove representative samples however it is possible that indiscriminate uses of asbestos may be present between sample locations of otherwise visually similar materials. An asbestos management survey is non-destructive and includes an inspection within accessible ceiling voids, above loose laid removable tiles, inside openable risers and cupboards, within accessible risers and behind removable casings.

Similarly access within lift shafts, live electrical equipment and mechanical plant may be restricted. A Refurbishment and Demolition asbestos survey is destructive and includes an inspection within accessible ceiling voids, above loose laid removable tiles, inside openable risers and cupboards, within accessible risers and behind removable casings. Representative areas of each element of building fabric will be intrusively opened up to inspect for the presence of ACM's behind built-in ducts, voids or similar enclosed or concealed areas within the building fabric. No intrusive work will be undertaken within the structural framework, concrete floors and masonry walls.

Environmental issues: Save where we are commissioned to provide environmental services (in which case the relevant section of this document shall apply), the following applies. We will not carry out nor commission formal enquiries or tests relating to potential soil or ground contamination, or the ground bearing conditions of the site or neighbouring land. We will not carry out any searches with statutory bodies to establish any mining or landfill issues, and associated potential subsidence risk as a result of historic site operations. Whilst we will comment on any potential contamination issues apparent from our survey, our report will not constitute an environmental report. You are advised to procure your own environmental reporting, but we will be happy to arrange audits, reports or tests on your behalf by specialist consultants, who are to be directly appointed by you, if required. You should ensure that your solicitors obtain as much information as possible about the prior use of the land. Such information should be revealed to us as soon as possible as it may materially affect our/or the consultant's advice to you. Such advice may include recommendations for testing or obtaining a warranty.

We have no liability in relation to the presence of low frequency electronic fields, radiation, toxic mould, and the presence of Japanese Knotweed or other invasive plant species as defined in the Wildlife and Countryside Act 1981 or the Environmental Protection Act 1990. We may however note their apparent presence for investigation by others as appropriate.

Mechanical and Electrical Surveys

Generally: Our survey and report is compiled under the brief to visually inspect and comment on the condition and the quality of the installation relating to normal good standards in the building services industry as dictated by CIBSE and IEE's current recommendations and standards without testing or dismantling of the plant. Where appropriate, we have provided an overview of the lift installations, which was carried out by the attending building services consultant. This overview provides a description of the lift services and general condition other than inspection of the lift shafts and associated equipment.

Budget Costs: Any costs indicated within this report are based on our best assessment of the situation and the work involved at current prices and should not be taken as firm costs for the items of work detailed. To provide more accurate costs an investigation will be required in greater detail for individual items of the plant and systems, and may involve the employment of specialists where appropriate.

There are occasions when the building services will be inspected by a building surveyor rather than a mechanical and electrical consultant and we will advise within the fee quotation. In this case, if you require a survey by a mechanical and electrical consultant, you should confirm this prior to our inspection.

Concealed Parts: We have not inspected parts of the Engineering Services which are encased, covered up, or otherwise made inaccessible in a normal course of construction, alteration, or fitting out. We will not carry out any internal inspection of the plant/systems.

Design Analysis: No definitive calculations have been undertaken to determine the capacity or performance of the plant items, nor have performance tests been carried out on any of the systems or plant items. Design analysis of the systems has been undertaken using generally accepted design criteria both past and present, primarily to establish the principles of design. We have specifically excluded tests relating to the performance or efficiency of any heating, air conditioning, or ventilation systems, pipe pressure tests, electrical or drainage tests. The omission of such tests might mean that certain problems could exist which are not reflected in this report. During the course of our building services survey we will not carry out an inspection of the below ground services.

Deleterious & Hazardous Materials: Our report and survey excludes any investigation into structural engineering design, compliance with legislation relating to buildings, or the unsuitable use of high alumina cement or calcium chloride, calcium silicate brickwork, alkali-silicate reaction in concrete, cavity wall tie failure, radon gas seepage, woodwool slab permanent shuttering, asbestos or PCB's or other materials considered as deleterious in construction, except insofar as such matters may come to knowledge in the normal course of inspecting the materials and state of repair.

White Goods & Data: This report does not include an inspection of the white goods, catering and vending equipment, telecommunication, data or wireless systems installed within the property. We are unable to comment, advise or identify items that are reliant on day/date dependent embedded chips.

Rights of Way / Support / Light

Where necessary we will comment on apparent rights of way / support or light which may be visible or suspected albeit our comments will be outline in nature and without any detailed investigations.

2. Environmental

Preliminary / Desk Based Risk Assessment: This section relates specifically to Peer Reviews, Development Appraisals, Technical Notes, and Desk Based or Phase 1 Audits/Assessments. The reports are prepared to identify potential source, pathway and receptor pollutant linkages by assessing the following:

- Current, former and proposed land uses on site including an inspection of the site and the immediate environs, information provided by the client on the current use of the site and a review of historical data;
- Environmental sensitivity of the site location as determined by factors including geology, hydrogeology, surface watercourses and neighbouring land uses; and
- Pertinent information provided by environmental regulators.

The preliminary risk assessments are completed based on the information reviewed and made available. This may include a visual inspection of the site (if required), a review of available historical and environmental setting records, consultations with site representatives, pertinent information provided from the client and regulatory consultations. No intrusive ground investigation works or samples are taken as part of preliminary (desk based/Phase 1) risk assessments. As such, actual risks have not been established. Actual risks can only be assessed following an intrusive investigation of the site.

The aims of the Peer Reviews, Development Appraisals, and Technical Notes will be specific to the project and will be listed within the report.

Compliance with Legislation: The environmental risk assessment will be undertaken with due regard to Contaminated Land legislation and guidance documents (available and relevant at the time of issuing our report) such as the Environmental Protection Act 1990 and others, issued by (but not limited to) the Department for Environment, Food and Rural Affairs (DEFRA) and its predecessors, the Environment Agency (EA) (and its devolved equivalents), (e.g. the Scottish Environment Protection Agency (SEPA) and Natural Resources Wales (NRW)), Contaminated Land: Applications in Real Environments (CL:AIRE), British Standards Institute (BSI), the Royal Institution of Chartered Surveyors (RICS) and the American Society for Testing and Materials (ASTM) Standard E 1527-00. No liability can be accepted for the effects of any future changes to such guidelines and legislation, and clients may wish to instruct a review of reports where there have been significant guidance / legislation changes.

Specific comment is made in the Desk Study/Phase 1 report regarding the site's status under Part 2A of the Environmental Protection Act (EPA) 1990, which Act applies in England, Scotland and Wales. The Act provides a statutory definition of Contaminated Land and as revised under The Contaminated Land (England) (Amendment) Regulations 2012. Unless specifically stated as relating to this definition, references to 'contamination' and 'contaminants' relate in general terms to the presence of potentially hazardous substances in, on or under the site.

With sites in Scotland, specific comment is made in the Desk Study/Phase 1 report regarding the site's status under Part 2A of the Environmental Protection Act (EPA) 1990, which provides a statutory definition of Contaminated Land and as revised under the Contaminated Land (Scotland) Regulations 2000 (SSI 2000/178), as amended, and the Scottish Government's Statutory Guidance: Edition 2. Unless specifically stated as relating to this definition, references to 'contamination' and 'contaminants' relate in general terms to the presence of potentially hazardous substances in, on or under the site.

With sites in Wales, specific comment is made in the Desk Study/Phase 1 report regarding the site's status under Part 2A of the Environmental Protection Act (EPA) 1990, The Contaminated Land Regulations (2001, 2006) and Contaminated Land Statutory Guidance issued by the Welsh Government (2012).

Content of Report: Our Phase I Environmental Audit will be based on a visual inspection of the site, a review of available historical and environmental setting records, consultations with site representatives, pertinent information provided from the client and regulatory consultations. No samples will be taken as part of this study. No visual inspection is typically completed by an environmental consultant as part of a desk-based assessment.

Generic Risk Assessment: The risk assessment is dictated by the finite data on which it is based and is relevant only for the purpose of which the report is commissioned. If additional information or data becomes available which may affect the opinions expressed in our report, we reserve the right to review such information and, if warranted, to modify the risk assessment accordingly. We reserve the right to charge an additional fee for un-anticipated second opinion reviewing of previous reports.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed. The risk assessment is completed in line with the relevant land use agreed for the site and the time of completing the works. Changes to site conditions or land use may require a reassessment.

The survey excludes intrusive opening up of the building fabric and inspection behind built-in ducts, voids or similar enclosed or concealed areas within the structure and fabric (unless specifically stated in the report). Where necessary we will comment on apparent rights of way / support or light which may be visible or suspected albeit our comments will be outline in nature and without any detailed investigations.

Furthermore, whilst observations will be made for other environmental factors such as but not limited to: invasive species (i.e. Japanese Knotweed), Unexploded Ordnance, and asbestos, it is recommended that the client appoints a specialist to carry out a detailed inspection if its presence is suspected. Furthermore, whilst the report comments on the geological setting, an assessment of the structure and site setting is not included. If suspected subsidence / slope failure etc is identified, it will be noted and a recommendation for a specialist to assess the site will be made.

Phase 2 Geo-Environmental Investigation

The Phase 2 Geo-Environmental Investigation (also known as a Ground Investigation) involves the preliminary risk assessment (set out above) and an intrusive assessment of the site to quantify the risk. Phases of ground investigation may be required in certain cases such as where a generic assessment is followed by a detailed assessment.

In the instances where a ground investigation has been completed, this would be designed to address potential source, pathway and receptor pollutant linkages associated with the site. The content and findings of our ground investigation reports are based on data obtained by employing site-based assessments and techniques, considered appropriate to the site as far as can be interpreted from desk-based materials and a visual walkover of the site. Such techniques and methods are subject to limitations and constraints set out in the report. The findings and opinions are relevant at the time of writing, and should not be relied upon at a substantially later date as site conditions can change, for example, seasonal groundwater levels, natural degradation of contaminants etc.

Content of report: Where Colliers is responsible for directing the number and location of exploratory holes, it shall exercise all the reasonable skill, care and diligence to be expected of a properly qualified and competent member of the Consultant's profession experienced in performing such services, taking into account site conditions, and available knowledge, as well as access, budgetary and scheduling constraints. Subject to having complied with the foregoing: (1) no liability can be accepted for the conditions that have not been revealed by the exploratory hole locations, or those which occur between each location and (2) whilst every effort will be made to interpolate the conditions between exploratory locations, such information is only indicative and liability cannot be accepted for its accuracy. By their nature, it is generally the case that exploratory holes provide a relatively small and localised snapshot of the ground conditions relative to the size of the site.

The extent of chemical testing carried out on samples obtained at the site has been determined in accordance with the latest guidance issued by the regulatory bodies, to provide general levels of contamination present on site that could pose a risk to human health or Controlled Waters. The extent of testing and limitations of the methodology are set out within this report. Although testing has been completed, this is a localised snapshot of the chemical composition of the soils and groundwater present onsite. Furthermore, the laboratory testing is to be undertaken at accredited laboratories and using accredited methods (UKAS, MCERTS etc.). However, Colliers cannot be held responsible for third-party delays or inaccurate results provided by the third party.

The ground investigation reports are strictly limited to the nature of contamination contained within the ground and groundwater at the site. These reports do not cover other environmental aspects for example, but not limited to: ecology, noise or air.

The reports prepared by the Colliers technical services team may include data prepared by third party / sub-consultants, e.g. CCTV Surveys, Topographical Surveys, Utility Surveys, Noise Impact Assessments, Air Quality Assessments, Ecology and/or Arboricultural Assessments. Where this occurs, it will be clearly stated in the report. Where Colliers have reviewed and commented on such information, we have done so in good faith and in reliance on the accuracy and completeness of that information, and we do not accept any liability for losses arising from errors or omissions in it.

Risk Assessment: The opinions and findings conveyed via the report will be based on information obtained from a variety of sources as detailed by the report. The information should not be treated as exhaustive but is, in good faith, considered as representative as possible of the site conditions when considering constraints set out by the report. The risk assessment will be completed in line with current industry practices but is not a guarantee that the site is free of hazardous conditions. The risk assessment is completed in line with the relevant land use agreed for the site and the time of completing the works. Changes to site conditions or land use may require a reassessment.

Additional Information:

Waste: A preliminary waste assessment may be included within the ground investigation. Ultimately the responsibility for the correct classification and description of wastes rests with the waste producer. Colliers will not be present during the generation of wastes and is not responsible for their final disposal. We have access to HazWaste Online which is software that classifies waste by comparing lab results with WM3 guidance. It allows us to classify waste based on samples and testing criteria within the software, which we set.

Buried Services: Whilst reasonable efforts will be taken to avoid buried services, we accept no liability for damage to services which have not been accurately identified in advance of site works. In addition, Colliers take no responsibility for damage caused by sub-contractors/drilling teams.

Unexploded Ordnance: With regard to Unexploded Ordnance (UXO), Colliers will undertake a preliminary assessment using freely available online resources. However, Colliers will commission a detailed report from a third party specialist as required, on behalf of the client. Colliers will take precautions in accordance with CIRIA C681 to avoid service strikes, UXO strikes and damage to third party structures during the investigation. Colliers take no responsibility for damage caused by sub-contractors/drilling teams.

Coal Mining: With regard to Coal Mining, Colliers will perform a desk-top review of available data sources to provide a preliminary assessment/Coal Mining Risk Assessment. Where required, Colliers will commission a report by the Coal Authority or a third party specialist on behalf of the client. Our recommendations may include ground investigations to check for mine shafts or mines.

3. Flood Risk Assessment, Flood Risk Technical Note and Coastal Erosion Technical Note

A Flood Risk Assessment (FRA), Flood Risk Technical Note (FRTN), Coastal Erosion Technical Note (CETN) or Sustainable Drainage Systems assessment may be required, where it has been identified within the Preliminary / Desk Based Assessment or Phase 2 Geo-Environmental Investigation as a potential risk or requirement of planning (without consideration of climate change).

The reports provide detailed analysis of flooding, erosion and drainage risks (where applicable, as per the report scope) in both present day and including climate change to reflect the lifespan of investment or development and where applicable, requirements and recommendations for mitigation are provided. Such techniques and methods are subject to limitations and constraints set out in the report.

For a preliminary desk-based enviro assessment, our commentary is based on the publicly available mapping only, which is available at the time of writing via the EA, NRW, SEPA and / or the BGS. The assessment provided in the preliminary assessment therefore extends to an evaluation of the risk noted from third party sources only, which data provides the risk profile in the present day, but does not include any allowances for climate change. We cannot accept any liability where the information is updated following the issue of our report. No inspection or comment is made on the below ground drainage installations or service conduits unless instructed otherwise. Should an additional assessment be required, Colliers can perform a formal Flood Risk Assessment, Flood Risk Technical Note, Coastal Erosion Technical Note or Sustainable Urban Drainage System assessment on behalf of the client.

A topographic ground level survey or Close Circuit TV (CCTV) drainage survey may be required to fulfil the risk assessment, and a third-party would be commissioned separately by Colliers to undertake these works.

The reports and content do not constitute detailed design under the CDM regulations, but a design may be required separately to fulfil the recommendations of the reports, a third-party would be commissioned separately by Colliers to undertake these works.

Content of report: The content and findings of the report will be based on the best available data obtained by employing site assessment methods and techniques, considered appropriate to the site as far as can be interpreted from desk based materials and data and a visual walkover of the site (if required). Such techniques and methods are subject to limitations and constraints set out in the report. The findings and opinions are relevant at the time of writing, and should not be relied upon at a substantially later date (i.e. 3 months from the date of writing the report or where there is a known change to the environmental data used within the report or the available guidance on risk assessment) as site and hydrological conditions, hydrological and hydraulic estimation methods, risk assessment and climate change guidance can change.

Risk Assessment: The risk assessment will be completed in line with current industry practices but is not a guarantee that the site is free of hazardous conditions. The risk assessment is completed in line with the relevant land use agreed for the site and the time of completing the works. Changes to site conditions, land use, best available environmental datasets or guidance may require a reassessment.

Planning Conditions: Subject to receipt of payment of our fees, our reports may be submitted to the Local Authority to support the redevelopment of a site. Should the report be submitted prior to payment being made, Colliers may request the report to be surrendered until payment is made.

4. Dilapidations

Generally: We will assume unless otherwise requested that we are engaged as an advisor to prepare or comment on a schedule, claim or potential liability which is distinct from an instruction to act as an expert witness. However, in discharging the advisory role it is always necessary for us to take account of considerations relating to expert witnesses as set out in the current Practice Statement and Guidance Note for Surveyors Acting as Expert Witnesses by the Royal Institute of Chartered Surveyors, a copy of which can be provided on request. This states that the primary function, and duty, of an expert witness is to assist the court on matters within their expertise.

Ongoing Advice: Our dilapidations advice aims to provide you with an informed opinion as to the anticipated level of liability/claim. Changes in case law, statute and the passage of time may affect the accuracy of our advice; it is therefore important that our advice is reviewed at regular intervals and, in particular, prior to the expiry of the lease.

Documentation Provided: Our assessments can only be as accurate as the information provided to us; it is therefore important that the most complete set of documentation possible is provided in order for the best advice to be given. We cannot take any responsibility for distorted findings resulting from deficient, incorrect or incomplete information.

Estimated Settlement: When an estimate of settlement is provided at any time prior to concluding the claim, this is for guidance only and should never be taken as a definitive evaluation of the likely damages which may fall due.

Final Settlement: Our recommendations on final settlement will take into account a number of commercial and risk factors and may not be purely based on potential/actual losses. Settlements can be limited by S.18(1) of the Landlord & Tenant Act 1927 and the common law principles to the diminution in the value of the Landlord's reversion, regardless of the cost of works and other heads of claim. We will advise you if we consider that a formal valuation (commonly known as a Section 18 valuation) is necessary.

A claim based on the cost of the works may also be capped or even extinguished if it can be shown that the premises are to be altered or demolished after the expiry of the lease. Landlords should advise us if this is the case. Again, we will advise you if we consider that a Section 18 valuation is necessary. Where no formal release is provided by a Landlord we reserve the right to charge on a time expended basis.

Abort fees: Where negotiations are protracted, where there is little or no engagement between the parties, or where there is no reasonable prospect of a negotiated outcome, we reserve the right to charge on a time basis.

Solicitors: We recommend that you instruct a solicitor in relation to agreeing the wording of any forms of release used to record agreement on a financial settlement, as we cannot accept any liability for the drafting of such documents.

Be aware that all your communications with us may not be privileged. Your solicitor will be able to advise you on matters relating to legal and litigation privilege.

Your solicitor should advise you on compliance with break notices as we only look at dilapidation liabilities under a lease and there may be other liabilities which impact on the break such as vacant possession, payment of rent, etc. Your solicitor will be responsible for the service of any schedules / notices. We shall not bear any liability to you in relation to such matters, which should be properly be advised by your solicitor.

Heads of Claim

Loss of Rent, Rates, Service Charge, etc.: For the purposes of the calculation of a loss of rent (and where applicable, service charge) claim we will provide an assessment of the period that it is likely to take to procure and complete works identified in the Schedule of Dilapidations. However, the applicability of such a claim will depend on market conditions prevailing at the end of the term and require initial input from your appointed letting agents shortly before lease expiry. Unless specifically agreed or stated within the lease, we will not include finance charges, loss of rates and other similar items in our assessments/claims.

Fees: We will include an allowance for legal fees only for the service of Schedules of Dilapidations in our assessments and claims. Surveyors' fees for the preparation and service of schedules will be included but other specialist professionals' fees (such as structural engineers or cladding investigations) will not be included unless otherwise stated. What is included within the recoverable fees will depend on the contents of the lease and the nature and extent of the claim. All professional fees included will be estimates (save for the fees to prepare the schedule which will be in line with our fee quotation).

VAT: VAT may form part of a claim and is subject to the VAT status of the property and parties to the lease. The total claim (of which VAT may form part) is a damages payment that (in our experience) HMRC do not deem a taxable supply. Invoices are not usually issued by landlords to tenants for this reason. For all tax and HMRC related queries an accountant should be consulted. We shall not be liable for tax losses or claims of any sort.

Contamination: We will include in our assessment any obvious contamination issues but we will not undertake any tests or investigation of current or previous uses of the site or adjoining land. We will advise you where we consider a need for specialist advice.

5. Energy Performance Certificates

Generally: This work is usually undertaken in three stages being:

1. Site inspection and research;
2. Data inputting and Calculating the Certificate; and
3. Lodging the certificate and reporting to the client.

We will initially determine the level of complexity of the building from the information provided by the client. Should it be determined during the site inspection that the complexity of the building and/or its services makes the standard assessment methodology inappropriate, this will be drawn to the attention of the client and a revised proposal will be submitted for sub-consulting the assessment to enable Dynamic Simulation Modelling (DSM) to be carried out.

Fees: Our fee quote is based on the assumption that the building can be inspected in one visit with unrestricted access to all areas. If we find that access is restricted to some parts of the building and that a return visit is required we will invoice all additional time on a time charge basis.

Where keys are held remotely from the property we will charge an additional fee on a time charge basis to cover our time in collecting and returning the keys. Where an instruction is made on the basis that plans are available the following applies:

- Plans must be to scale.
- Plans must accurately show the current layout of the premises.
- Plans must be provided at the time of appointment or before inspection.

Where plans are not immediately available and we are expected to recover them from other parties an additional charge may be made to cover our time in this regard.

Site Inspection: The nature of a building's construction will not always be obvious from a visual inspection alone. Where sectional details are not available we will use the inference values provided in iSBEM. Where these are poor and possibly have an effect on the banding/rating of the property we may advise the client to consider opening up elements of the property so that more accurate construction details can be obtained. Opening up works will fall outside the initial fee agreement and we reserve the right to invoice our time for this separately.

G-iSBEM / IES / TAS / Design Builder: We will generate the EPCs using appropriate specific software to suit the building type (Level 3/4/5). All software tools operate on assumptions and predetermined variables which can affect the outcomes produced. We will use reasonable endeavours to use appropriate software available for the context, however the client should be aware that software in general is not entirely error-free and all such tools have limitations.

Reporting and Advice: The EPC generates a Recommendations Report within which advice is given for the building owner to upgrade the building's efficiency performance. The advice is generic and in some cases is not considered to be relevant. Where we consider the advice to be poor, we will tailor the report to more accurately reflect the requirements of the building. The recommendations given in the report are not mandatory, so where a building owner implements improvement works based on the recommendations we would expect them to discuss the proposals in more detail before any expense is incurred.

Documentation Provided: We cannot take responsibility for the accuracy of any information provided by others for the purpose of carrying out the assessments. Similarly we cannot take responsibility where information to be provided is missing or its provision is delayed and that information conflicts with our assessment. Where such documents become available we recommend that copies are forwarded to us immediately in order that any advice provided can be refined.

6. Bank or Fund Monitoring

Our report is based upon discussions with the borrower (being the person to whom our client, a funder, is lending money), as well as reports, records and data provided by the borrower or on their behalf ("Information"). We will use our professional judgement and experience to evaluate and interrogate the Information, however we are not auditing the Information and we cannot guarantee that it is accurate and complete in all respects. It is the borrower's duty to ensure that the Information is accurate and complete, and we shall not be liable for any errors or omissions in the Information, or for losses arising as a result of such errors or omissions.

7. Rights of Light and Daylight

Where necessary we will comment on apparent rights of way / support or light which may be visible or suspected albeit our comments will be outline in nature and without any detailed investigations.

Generally

This work is usually undertaken in three stages being:

1. Site inspection and research;
2. Modelling and testing; and
3. Reporting and provision of advice.

Analyses are often reliant on third party advice and particularly in relation to initial RoL and DSO studies based on a number of assumptions relating to the surrounding buildings. The RoL work also involves legal and valuation matters on which we may offer opinions but should be verified by reference to appropriate specialist consultants.

Site Inspection

Whilst we will endeavour to undertake a thorough review of the buildings surrounding the site, where certain parts are not readily visible from vantage points available to us, we cannot guarantee that all relevant receptors will be included. Assumptions may be made as to the presence and position of windows situated on elevations of existing buildings, which cannot be readily seen. To prevent alarm and respect privacy of neighbouring occupiers, close inspection of windows in neighbouring buildings may not be possible and this may affect the quality and accuracy of information taken on site.

Assumptions will be made as to room size, use and layout where necessary. No topographical survey of site levels or elevation detailing will be undertaken. Should precise dimensions and window locations be required, we would recommend that separate topographical land, building and elevation surveys are instructed and provided in AutoCAD format.

Research

Limited research will be undertaken where necessary to determine:

1. Age of buildings;
2. Historic site development;
3. Legal constraints; and
4. Planning policies.

Where necessary to assist research, historic maps, aerial photographs and Land Registry title documents may be purchased and charged as disbursements.

Modelling & Testing

3D Modelling is usually undertaken using AutoCAD software. Unless provided with accurate topographical survey information relating to levels and elevation detailing, approximate dimensions will be used from limited measurements taken on site, available OS data and 'brick counting' from photographs. Where necessary we may buy third party photogrammetry models as a starting point for creating our models. The cost of same will be charged as a disbursement. Tests are usually undertaken using software licensed to us by Waterslade/MBS Survey Software. Although some tests have been undertaken to establish the accuracy of this software we take no responsibility for the software's accuracy.

Reporting and Advice

Reports and advice will usually be based on a number of assumptions and with reliance on third party information. Where assumptions have been made, these will usually be stated and recommendations will be given for further work required. Where specialist legal, planning and/or valuation advice is required, recommendations for same will be highlighted within our report or separately.

Third Party Advice and Products

Our processes include the use of third party advice and products such as:

1. Ordinance Survey data;
2. Title documents;
3. Baseline models;
4. Topographic surveys;
5. Aerial photography;
6. Architects' drawings; and
7. Local authority archive information.

Whilst we will review this information for accuracy insofar as required for our assessments, we do not accept any liability for inaccuracies in third party information or loss or damage arising from same.

Valuation of Damages

Where appropriate we will provide book value damages estimates for right to light infringements.

Valuations Will Be

- Based on assumed rents and yields;
- Formulated in accordance with standard industry practice;
- Given at current prices; no adjustments will be made for future inflation;
- Quoted as budget estimates only and are not to be thought of as a substitute for obtaining specialist valuation advice;
- Exclusive of both parties' professional fees;
- Exclusive of any taxes that may be applicable i.e. VAT/SDLT.

We Will Not

- Provide valuations based on development gain or profit share method.

8. Party Wall Terms – Building Owner and Adjoining Owner

Surveyors Appointment

References to 'Appointing Owner' and 'Building Owner' are references to you. References to 'Adjoining Owner' relate to the owner/s of the neighbouring property adjacent to your work that is or may be subject to the Party Wall etc. Act 1996 (referred to as 'the Act' under this section 7).

To administer the requirements of the Act surveyors need a written appointment. The appointment must be an individual and cannot be a company. Liability for work undertaken remains solely with us and not the appointed individual under the Act. We will provide a draft letter of appointment which must be completed and returned to confirm the appointment at or before the point at which there is either a deemed or actual dispute.

The letter of appointment must be signed by the Appointing Owner, or an agent with specific authorisation to sign on your behalf.

Once the appointment is confirmed it cannot be retracted or determined except if the surveyor appointed declares themselves incapable of acting in certain circumstances as prescribed by the Act. You should be aware that appointments follow a statutory procedure which requires the appointed surveyor(s) to work within the jurisdiction of the Act by administering its provisions fairly and impartially.

Fees

You are contractually responsible for payment of your surveyor's fee and those of the Adjoining Owner where we advise it is reasonable to do so.

An Award will generally determine that the Building Owner is responsible to pay the fee of both appointed surveyors. However, specific circumstances may mean this is not always the case. For example, fees may be apportioned between Owners if they both benefit from the works.

We reserve the right to charge additional fees in relation to changes in the design or scope of the works that requires addendum Award(s) or new Notice(s).

We reserve the right to charge additional fees in relation to assessing claims for damage and awarding any necessary compensation or making good.

When we are appointed under the Act as an Adjoining Owner (including under section 10(4) of the Act), we reserve the right to issue our fee invoice once the final draft of an Award (or schedule of condition) is agreed and we will issue the final signed copy within 48 hours of receipt of cleared funds.

Fees – Specialist Consultants

In some circumstances appointed Surveyors may suggest that specialists such as engineers or solicitors are appointed to assist in matters directly related to the administration of the Act or determination of the dispute.

The contract and responsibility for fees in relation to this appointment will be between the specialist and you. You are also likely to be responsible for the reasonable fees of the Adjoining Owner's Specialist Consultants' fees.

Boundary Determination

Whether a wall is built up to, or astride the boundary is not always easy to determine. Sometimes this can only be established by reviewing title deeds and with the assistance of a solicitor. Our advice without the benefit of title information is very much outline and will be based on certain assumptions.

Timescales

Whilst we will liaise with the design team and contractor to procure information required for Notices and Awards, it is outside our control if information from the design team and/or contractor is either incorrect in terms of design or level of detail, or is not provided to us in good time.

Information for the Award

The design team and appointed contractor are responsible to provide the information requested to be included within the Award. Where possible we will give an indication of the likely information that will be required. We are not responsible for any delay to action requests for information that may impact the development programme.

Right of Access

In certain circumstances the Act allows the Building Owner to access the Adjoining Owner's land for the purpose of executing work in pursuance of the Act. Our fee does not include for discussing access to works that are not in pursuance of the Act and if that is required, a separate agreement and fee will be given.

Security for Expenses

We will not hold monies for Security for Expenses. It is usual practice that any sum agreed will be held in a solicitor's client account sometimes managed as an escrow account and only released on signature of two of the three surveyors.

Where relevant, the terms and conditions in relation to Security for Expenses will be set out in the Award.

Third Surveyor Referrals

The appointed surveyors are required to appoint a Third Surveyor to determine any disputed matters. If referral of a disputed matter to the third surveyor is necessary, the procedure will be set out to you, along with any cost Implications.

We may charge an additional fee for time relating to matters Incidental to third surveyor referrals.

General

We will make all reasonable efforts to identify the Adjoining Owner(s) of a property by making checks with the Land Registry (with the cost charged as a disbursement). We cannot accept any liability it after making reasonable enquiries, we do not manage to ascertain all Adjoining Owners with an interest in the property.

The ability to agree an Award is very much linked to the quality and level of detail that is provided from the design team and/or contractor. We cannot accept responsibility if the Information provided is insufficient to enable completion of an Award.

We do not accept any liability arising from the loss or delay in delivery of Notices by the Royal Mail or other carriers.

Where the depth of foundations is unknown and in the absence of any information such as trial pit Information, we will make a reasonable estimate on the foundation depth.

Our schedules of condition in relation to the Act only extend to the area of the property in close proximity to the notifiable work and will not unless considered necessary, extend to a full record of the condition of the entire Adjoining Owner's property.

10. Energy Audits (including ESOS, SECR and Net Zero Carbon assessments)

The nature of a building's construction will not always be obvious from a visual inspection alone. Where sectional details are not available we will use the inference values, based upon historic data and those held within SBEM.

11. Measured Surveys

In performing measured surveys we will use sophisticated equipment such as laser scanners and software provided by third parties. Colliers will use reasonable endeavours to calibrate such equipment and use such software correctly, however there remains the possibility of intrinsic limitations or defects in the equipment or software, and Colliers shall not be liable for any losses arising from such intrinsic limitations or defects.

9. Energy & Sustainability Surveys and Statements

The opinions and interpretations presented in our statements represent our technical interpretation of the data made available to us, using reasonable skill and care. However, due to the uncertainty inherent in the estimation of all parameters, we cannot and do not guarantee the accuracy or correctness of any interpretation and we shall not be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

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