Flood Risk Sequential Test

Spring Grove AD Facility, Thurlow

Acorn Bioenergy Limited

Prepared by:

SLR Consulting Limited

5th Floor, 35 Dale Street, Manchester, M1 2HF

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Acronyms and Abbreviations

AD	Anaerobic Digestion
AoS	Area of Search
AEP	Annual Exceedance Probability
BNG	Biodiversity Net Gain
CHP	Combined Heat and Power
EIA	Environmental Impact Assessment
EWSLP	Emerging West Suffolk Local Plan
FRA	Flood Risk Assessment
LPA	Local Planning Authority
NPPF	National Planning Policy Framework
PRoW	Public Rights of Way
SCC	Suffolk County Council
SCLP	South Cambridgeshire Local Plan
SECS	St Edmundsbury Core Strategy
SuDS	Sustainable Drainage Systems
SMWLP	Suffolk Minerals and Waste Local Plan
WSLP	West Suffolk Local Plan

1.0 Introduction

SLR Consulting Limited (SLR) was appointed by Acorn Bioenergy Limited (the Client) to prepare a Flood Risk Assessment (FRA) and Surface Water Drainage Strategy (SWDS) to support the proposed Anaerobic Digestion (AD) Plant on land at Spring Grove Farm, Withersfield, Northwest of Haverhill, CB9 7SW (the 'site'). The proposed development is subject to planning application reference SCC/0045/23SE which has been under determination with West Suffolk Council since 18th September 2023. A Regulation 25 request was issued by the Case Officer and within this request the requirement for the provision of a Sequential Test for the application site was requested. As such this document, also produced by SLR, provides the Sequential Test for the above application site and below proposed development.

The full description of the proposed development is as follows:

> *"The construction and operation an anaerobic digestion facility, associated infrastructure and new access road on land at Spring Grove Farm, Withersfield, Suffolk."*

The site comprises the main AD plant site, north of the A1307 at Spring Grove Farm, near Haverhill, and an off-site lagoon storage area to the north. The main AD plant site comprises two adjoining arable fields at Spring Grove Farm, approximately 9.3ha of which at Bowsey Field (to the west of the main access) and 3.2ha at Spring Grove Field (to the east of the main access).

The proposed development would accept in the region of 92,000 tonnes per annum of feedstock from local farms. The feedstock material would undergo a process of controlled decomposition (anaerobic digestion) within the proposed facility. The process produces biomethane (refined from biogas) which would be stored on site prior to be transported by tanker to a central gas injection point into the National Grid. Rainwater would be collected on site for use in the process. The AD facility would have the capacity to produce approximately 19,735,050 Nm^3 of biogas per annum. The AD process would also result in the production of a CO_2 as a natural by product. The AD plant will be fitted with the equipment required to capture the clean CO_2 to a food grade level standard; which makes is suitable for almost all industrial and commercial applications in the UK. Upgraded CO_2 will be liquefied and transported by road to end users, ideally located locally.

The proposed development layout has been considered in detail and designed sequentially so that potentially vulnerable equipment has been afforded the appropriate protection for operational purposes.

The Environment Agency's Flood Map confirms that the site is located predominantly in Flood Zone 1 (low probability of flooding). However, the central southern part of the main Site lies within Flood Zone 3a (high probability of flooding) with a limited area beyond which lies in Flood Zone 2 (medium probability of flooding). There is also a limited section of the pipeline located within Flood Zones 2 and 3a. As the pipeline will be constructed below ground, consideration of the flood risk along its alignment will be limited to the construction phase. It is recommended that the Construction and Environmental Management Plan (CEMP) be cognisant of the flood risk with associated impact and management measures conditions.

Planning Practice Guidance (PPG) on Flood Risk and Coastal Change (August 2022) confirms that, with reference to Table 2: Flood risk vulnerability and flood zone 'incompatibility' at PPG Paragraph 079 and Annex 3 Flood Risk Vulnerability classification, 'waste treatment' is classified as 'Less Vulnerable' and is appropriate in Flood Zones 1, 2 and 3. However, the latest PPG guidance it is stated that the Sequential Test should be applied in cases where the site is located in areas at risk of other types of flooding, not just at fluvial or tidal risk.

This Sequential Test identifies and Area of Search (AoS) and goes on to determine whether or not there are sites within the AoS which may be reasonably available and appropriate for the proposed development, based on a number of criteria.

2.0 Planning Policy Context

This report has been prepared in line with the requirements of national policy and guidance on the preparation of Sequential Tests.

2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) (2023) requires, where appropriate, an applicant to apply the Sequential Test in order to demonstrate that there are no reasonably available sites in areas with a lower probability of flooding that would be appropriate to the type of development or land use proposed.

NPPF paragraph 168 states:

> *"The aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test. The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding."*

NPPF paragraph 169 states:

> *"If it is not possible for development to be located in areas with a lower risk of flooding (taking into account wider sustainable development objectives), the exception test may have to be applied. The need for the exception test will depend on the potential vulnerability of the site and of the development proposed, in line with the Flood Risk Vulnerability Classification set out in Annex 3."*

NPPF paragraph 170 states:

> *"The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. To pass the exception test it should be demonstrated that:*
>
> *a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and*
>
> *b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall."*

NPPF paragraph 171 states:

> *"Both elements of the exception test should be satisfied for development to be allocated or permitted."*

NPPF paragraph 173 states:

> *"When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:*
>
> *a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;*
>
> *b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;*

c) *it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*

d) *any residual risk can be safely managed; and*

e) *safe access and escape routes are included where appropriate, as part of an agreed emergency plan."*

The guidance in paragraph 173 is elaborated on in Footnote 59, which states:

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

2.2 Planning Practice Guidance - Flood Risk and Coastal Change

Planning Practice Guidance for Flood Risk and Coastal Change was updated in August 2022 and states that the aim of the Sequential Test is to ensure that areas of little or no risk of flooding from any source are developed in preference to areas of higher risk. The guidance states that:

> *"Where it is not possible to locate development in low-risk areas, the Sequential Test should go on to compare reasonably available sites:*
>
> - *Within medium risk areas; and*
> - *Then, only where there are no reasonably available sites in low and medium risk areas, within high-risk areas."*

Within each flood zone, surface water and other sources of flooding also need to be taken into account in applying the sequential approach to the location of development (Paragraph 023 Ref ID:7-023-20220825).

In summary, national policy states that even if the Sequential and Exception Tests are passed, the development will only be considered appropriate in areas at risk of flooding if within the site, the most vulnerable development is steered towards the area at lowest risk of flooding. In addition, the development must be appropriately flood resilient and resistant and include a safe access and escape route.

These elements are considered in SLR's Flood Risk Assessment (April 2023).

2.3 Environment Agency Standing Advice on application of the Sequential Test

Reference has also been made to Environment Agency (EA) National Standing Advice 2012 (subsequently updated in February 2022) to local planning authorities on the application of the Sequential Test.

The EA's advice provides a framework for presentation of the necessary evidence base to demonstrate that the Sequential Test has been applied. The advice states that a Sequential Test should include an Area of Search (AoS) and set out the following:

- The name and location of the reasonably available site options;
- The level of flood risk on the site;
- State whether reasonable available options are identified in the Local Plan;
- State the capacity of each reasonably available site; and

- Outline any constraints to the delivery of reasonably available sites.

Having followed this process, the Sequential Test should conclude whether or not there are any available sites which are sequentially preferable (i.e., at a lower risk of flooding) that would be suitable for the proposed development.

2.4 Flood Risk Mapping

The Flood Risk for planning shows whether land falls within Flood Zones 1, 2 and 3. This includes both tidal and fluvial sources of flooding. The Environment Agency's surface water flooding mapping provides the anticipated flood extents for pluvial sources of flooding.

2.5 West Suffolk Local Plan

The site lies within the administrative area of West Suffolk Council. Currently, the development plan comprises the West Suffolk Local Plan (WSLP) which consists of the former Forest Heath area and the former St Edmundsbury area Local Plan documents detailed below:

- The St Edmundsbury Core Strategy Development Plan (SECS) sets out the long-term planning and land use policies; SECS was adopted December 2010.
- The former St Edmundsbury Borough Council formally adopted Bury St Edmunds, Haverhill and Rural Area Vision 2031 (Vision 2031) site allocation documents in September 2014.
- The Forest Heath and St Edmundsbury area Local Plan - Joint Development Management Policies Document (JDMPD) was adopted in February 2015.

Additionally, West Suffolk Council has prepared and submitted the draft local plan (Regulation 19) which was consulted upon prior to any representations being made. Once the council are satisfied with the draft local plan, it'll then be submitted to a planning inspector who will commence examination in public (Regulation 22); this is likely to be in Spring 2024.

In terms of this Sequential Test the relevant policies within the current and emerging plans are as follows:

St Edmundsbury Core Strategy Development Plan (SECS) (2010)

Policy CS2 'Sustainable Development' states that:

> *''A high quality, sustainable environment will be achieved by designing and incorporating measures appropriate to the nature and scale of development, including:*
>
> *…*
>
> *Sustainable design of the built environment*
>
> *…*
>
> *J) incorporating the principles of sustainable design and construction in accordance with recognised appropriate national standards and codes of practice to cover the following themes:-*
>
> *…*
>
> - *Surface Water Run-off – incorporating flood prevention and risk management measures, such as sustainable urban drainage;*
>
> *…''*

Joint Development Management Policies Document (JDMPD) (2015)

Policy DM6 'Flooding and Sustainable Drainage' states that:

> *''Proposals for all new development will be required to submit schemes appropriate to the scale of the proposal detailing how on-site drainage will be managed so as not to cause or exacerbate flooding elsewhere. Examples included: rainwater harvesting and greywater recycling, and run-off and water management such as Sustainable Urban Drainage Systems (SUDS) or other natural drainage systems.''*

Emerging West Suffolk Local Plan Submission Draft (2024)

Strategic Objective SO2 'Climate Change Mitigation and Adaption' states that its focus is to ''Avoid building in areas of greatest flood risk and manage future flood risk through improving resilience any by implementing innovative planning and integrated water management techniques.''

Policy SP1 'The Climate and Environment Emergency and Sustainable Development' states that:

> *''Proposals for all types of development must take account of the climate and environment emergency through good design and inclusion of measures to build in resilience and adapt to or mitigate the impact of climate change by:*
>
> *…*
>
> - *The use of sustainable drainage systems to help avoid and reduce the risk of flooding.*
> - *Providing betterment over the existing situation in areas at risk of flooding and seeking to achieve integrated water management.*
>
> *…''*

Policy LP5 'Flood Risk and Sustainable Drainage' states that:

> *''All development proposals will be considered against national planning policy including the application of the sequential test and, if necessary, the exception test.*
>
> *Development will be directed to those areas at the lowest risk of all forms of flooding and will only be permitted where it has an acceptably low risk of being affected by flooding. This will be assessed against the most up-to-date Environment Agency flood risk maps and the West Suffolk Strategic Flood Risk Assessment maps.*
>
> *…''*

2.6 Suffolk Minerals & Waste Local Plan

The Suffolk Minerals & Waste Local Plan (SMWLP) assists in determining planning applications for minerals and waste development, as well as safeguarding the same from other forms of competing development; it was adopted in July 2020. The SWMLP takes a positive approach to minerals and waste development that reflects the presumption in favour of sustainable development.

Policy GP2 'Climate Change Mitigation and Adaption' states that:

> *''New minerals and waste management facilities should through their construction and operation minimise their potential contribution to climate change through reducing carbon and methane emissions, incorporate energy and water efficient design strategies and be adaptable to future climatic conditions.*

Proposals for new minerals and waste facilities should where appropriate:

…

d) take account of potential changes in climate including pluvial and fluvial flooding, rising sea levels and coastal erosion, and;

Policy GP4 ‘General Environmental Criteria’ also notes that:

‘’Minerals and waste development will be acceptable so long as the proposals, adequately assess (and address where applicable any potentially significant adverse impacts including cumulative impacts) on the following:

a) pluvial, fluvial, tidal and groundwater flood risk

…

Proposals should meet or exceed the appropriate national or local legislation, planning policy or guidance for each criterion, including reference to any hierarchy of importance…’’

3.0 Site Location and Description

3.1 Application Site

The application site comprises the main AD plant site, north of the A1307 at Spring Grove Farm, near Haverhill, and an off-site lagoon storage area to the north. The main plant will be connected via underground pipework to an offsite lagoon storage area, which lies approximately 3km north of the main AD plant site. A site location plan is provided in Figure 3-1. A broader site location and constraints mapping plan is attached in **Appendix A**.

Figure 3-1: Site Location Plan

The main AD plant site comprises two adjoining arable fields at Spring Grove Farm, approximately 9.3ha of which at Bowsey Field (to the west of the main access) and 3.2ha at Spring Grove Field (to the east of the main access). Bowsey Field would be the primary area assigned to the proposed development with a marginal overlap into Spring Grove Field to accommodate some of the lower-level infrastructure.

The fields are bounded by established trees and hedgerow of varying density to the north and west, and a tree belt of substantial depth extends along southern boundary (approximate depths of between 75m-122m). The Stour Brook runs west to east to the south of the site within the tree belt which eventually feeds into the River Stour and is crossed by an existing bridge which enables access to the fields. The site lies on gently sloping land, which falls to the south west.

The pipeline will run in a northwards direction, and will carry liquid digestate to two offsite lagoons for easy offtake. The pipe extends to 3,055m and zig-zags across fields, following field boundaries where possible but avoiding hedgerow and tree root protection areas. The pipeline crosses Silver Street and Skippers Lane, running north alongside Stour Brook before crossing existing tracks to meet the offsite lagoons.

The lagoon site extends to approximately 1.5 ha and will be accessed via farm tracks from the east and west, which easily connect to the wider Thurlow estate. It is currently agricultural land, near the former Wratting Common airfield which was located to the northeast. A woodland, Cadge's Wood, is located to the southwest. The main site access will be achieved from the existing Spring Grove Farm access off the A1307 Cambridge Road, which connects Haverhill and Linton, with farm tracks used to access the offsite lagoons.

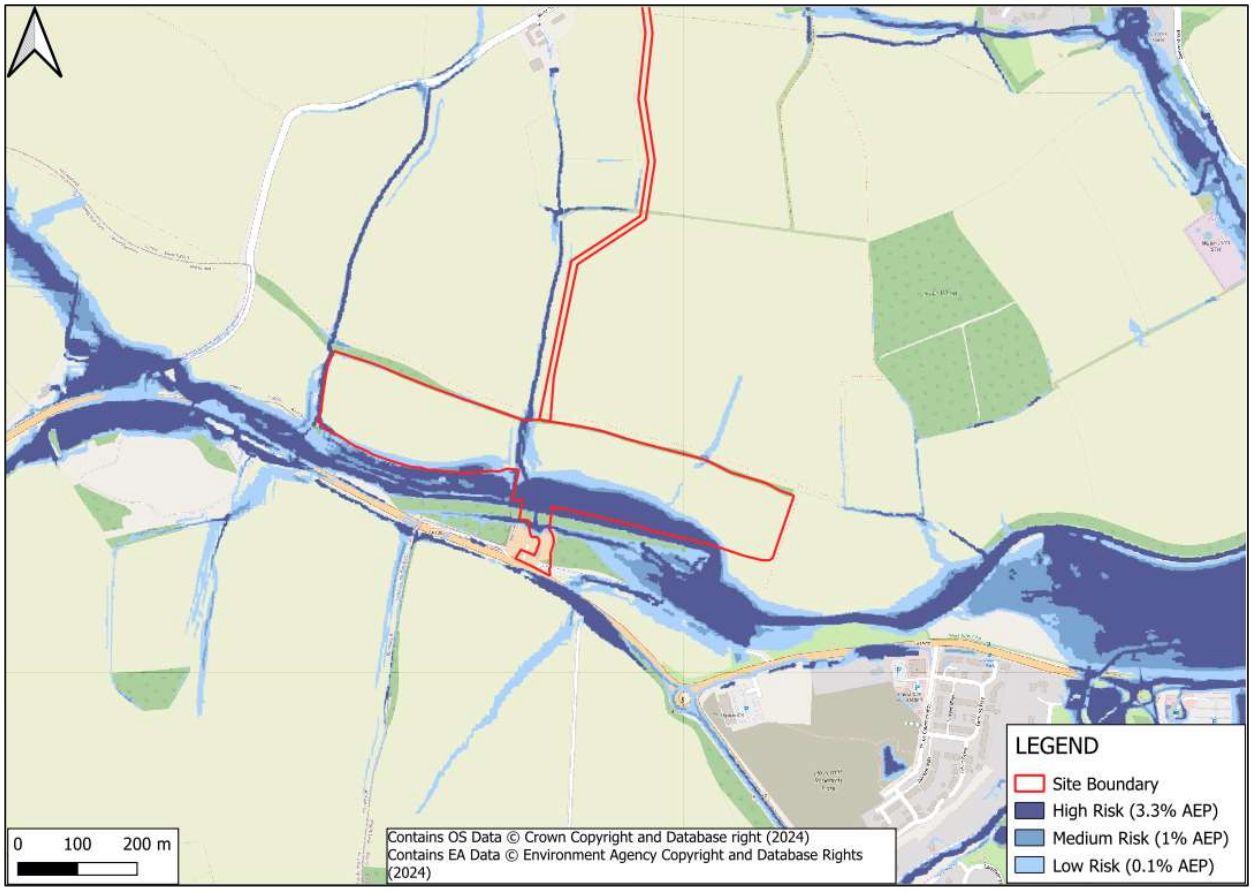
The site has been assessed as being predominantly located within Flood Zone 1 (Low probability of flooding). The central southern part of the main site lies within Flood Zone 3a (High probability of flooding) with a limited area beyond which lies in Flood Zones 2 (Medium probability of flooding). The flood zones are shown in the EA Flood Risk Map for planning Figure 3-2 below.

Figure 3-2: Extract of the EA Flood Risk Map for Planning

The EA's surface water mapping covering the main site is included in Figure 3-3 below and shows this area to predominantly at *very low* risk of flooding from surface water with the exception of:

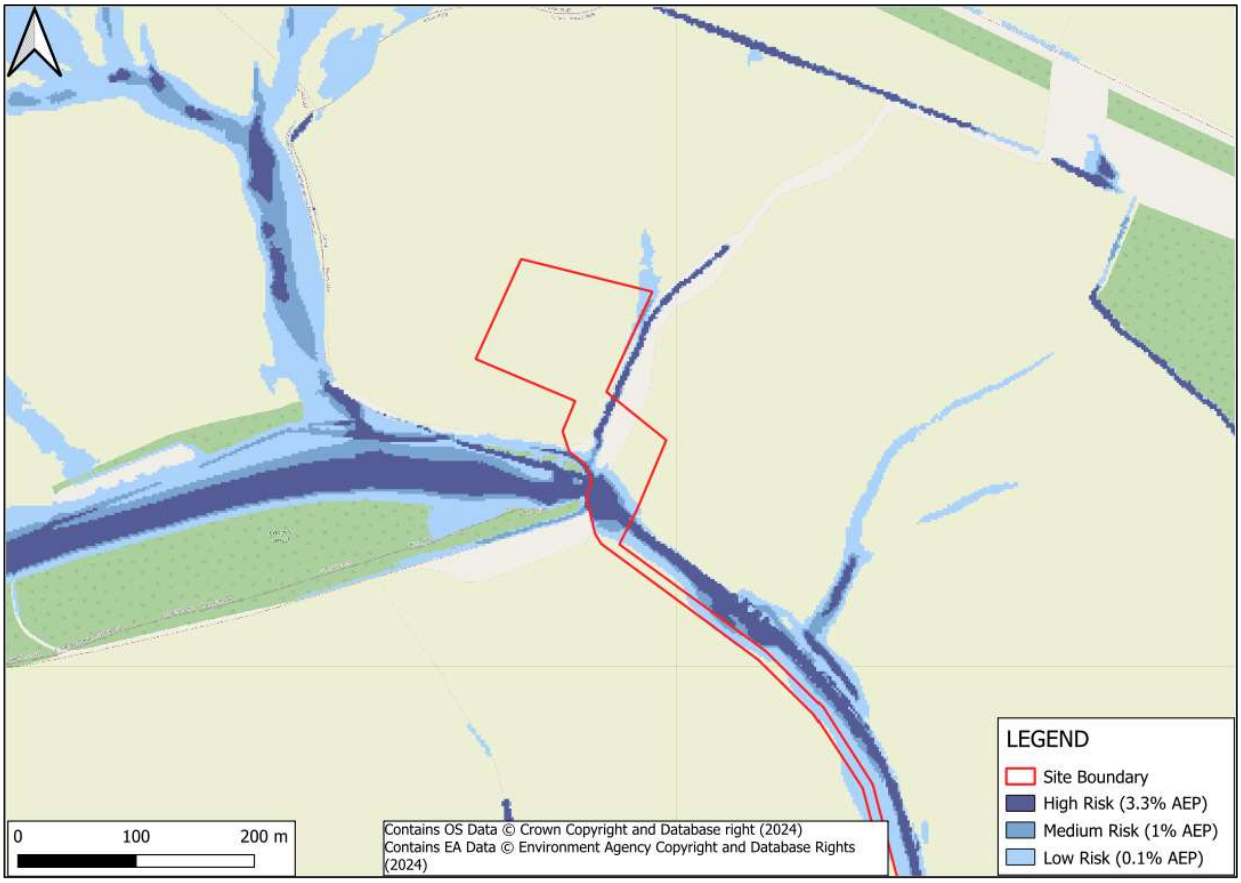
- Southern part of the main site;
- Corridor of the two watercourses discharging to the Stour Brook; and
- A flow path crossing the Spring Grove Field part of the main site.

Figure 3-3: Extract of the EA Long Term Flood Risk Map (Main Site)



The EA's surface water mapping for covering the northern lagoons area is shown as Figure 3-4 below and shows this area is predominantly at *very low* risk of flooding from surface water except for the corridor of a drain through the eastern part of this area which is at *low* to *high* risk of pluvial flooding.

Figure 3-4: Extract of the EA Long Term Flood Risk Map (Northern Lagoon)



3.2 Flood Risk Compatibility and the Exception Test

Table 3 of the Planning Practice Guidance for Flood Risk and Coastal Change presents the flood risk vulnerability and flood zone 'incompatibility' of various land uses and confirms that the proposed 'Less Vulnerable' use is appropriate in Flood Zones 1, 2 and 3, without the need for application of the Exception Test. Table 3 is recreated below in Table 3-1.

Table 3-1: Flood Risk Vulnerability and Flood Zone 'Incompatibility'

Flood Risk Vulnerability Classification (PPG Table 2)		Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Flood Zone (PPG Table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	Exception Test Required	✓	✓	✓
	Zone 3a	Exception Test Required	x	Exception Test Required	✓	✓
	Zone 3b (functional floodplain)	Exception Test Required	x	x	x	✓

Key: ✓ Development is appropriate x Development should not be permitted

NOTE: Whilst an Exception Test does not have to be applied, the site-specific Flood Risk Assessment has been undertaken to ensure the safety of the site users and the impact of others.

4.0 Proposed Development Scheme Site Selection

The proposed development would consist of approximately ha of impermeable hardstanding and a lagoon located 3km north of the site (connected via a pipeline).

The proposed development would accept in the region of 92,000 tonnes per annum of feedstock from local farms. The site was identified as the preferred site as feedstock would primarily come from the Thurlow Estate and the site is located in a preferred location in terms of transport links which avoids routing through nearby villages.

The feedstock material comprises a mix of agricultural wastes, including farmyard manure, and dairy slurry, and feedstock crops, which would be sourced from surrounding local farms.

Whilst no formal contracts have signed (which are pending receipt of planning permission), it is clear that sufficient feedstocks will be generated within a 5km radius of the proposed site, which lies centrally within the agricultural feedstock catchment, with a good local road access that avoids village centres. An indicative feedstock catchment area is provided within **Appendix B** of this report.

The proposed development layout has been considered in detail and designed sequentially so that potential vulnerable equipment has been afford the appropriate protection for the operational purposes.

5.0 Sequential Test Methodology and Approach

A Sequential Test was formally requested by Suffolk County Council (SCC) within a Regulation 25 request on the 21st November 2023.

This Sequential Test reviews sites within a defined Area of Search (AoS) to determine whether or not there are sequentially preferable sites which are reasonably available for the proposed development. If no sites can be found, then the site will pass the Sequential Test.

The methodology used in this Sequential Test has been developed based on guidance set out in the NPPF, the PPG on Flood Risk and Coastal Change and the EA Standing Advice (2012) updated in February 2022.

All mapping relating to the sites discussed below is attached in the appendices to this report.

5.1 Definition of Reasonably Available and Appropriate Sites

Paragraph 167 of the NPPF states:

> *"All plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property. They should do this, and manage any residual risk, by:*
>
> *a) applying the sequential test and then, if necessary, the exception test as set out below;*
>
> *b) safeguarding land from development that is required, or likely to be required, for current or future flood management;*
>
> *c) using opportunities provided by new development and improvements in green and other infrastructure to reduce the causes and impacts of flooding, (making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management); and*
>
> *d) where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development, including housing, to more sustainable locations."*

Paragraph 168 of NPPF states that the purpose of the sequential test is to steer development to areas with the lowest risk of flooding from any source. It states that to be considered sequentially preferable, sites must be 'reasonably available and appropriate for the proposed development in areas with lower risk of flooding'. It goes on to say that 'development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding'.

Planning Policy Guidance (PPG) on flood risk and coastal change includes further guidance. In particular, guidance from PPG states that 'reasonably available sites' are 'those in a suitable location for the type of development with a reasonable prospect that the site is available to be developed at the point in time envisaged for the development. These could include a series of smaller sites and/or part of a larger site if these would be capable of accommodating the proposed development. Such lower-risk sites do not need to be owned by the applicant to be considered 'reasonably available'.

The Suffolk Local Flood Risk Management Strategy is a protocol for Local Planning Authorities and Developers on SuDs, Surface Water Drainage and Local Flood Risk in Suffolk which was adopted May 2018. The guidance encourages councils to apply the sequential test where there is a possible flood risk to people and property.

5.1.1 Stage 1 Identify the Area of Search

In terms of identifying the Area of Search (AoS), the NPPF states that '*a pragmatic approach on the availability to alternatives should be take'* which is also consistent with the advice given in the EA standing advice on the preparation of Sequential Tests. The AoS has been determined by imposition of the following constraints:

1) **Proximity to Feedstocks:** The site would need to be located within a 5km radius from the hub site to avoid unnecessarily increasing the transport of feedstock to remote locations. It is the applicant's intention to introduce a pipeline to transport the feedstock (slurry) and liquid digestate, which is potentially feasible up to a distance of 5km;
2) **Environmental Constraints:** Any sites subject of, or in close proximity to, the following designations were excluded: Green Belt, AONB, SSSI, Sites of Interest for Nature Conservation (SINCS) or Local Nature Reserves (LNRs) and designated Ancient Woodlands as these would have constraints to achieving planning permission;
3) **Flood Zones 2 and 3:** As the purpose of the Sequential Test is to identify sites which are at a lower risk of flooding, any sites wholly or partially within Flood Zones 2 and 3 are excluded as they are not sequentially preferable to the application site.

5.1.2 Stage 2 Identify Reasonably Available and Appropriate Sites in the Area of Search

Once the AoS had been established, a review of the following information sources was undertaken to identify reasonably available sites within a 5km buffer and within Flood Zone 1, that would be appropriate for the proposed development:

- Allocations within the:
    - Suffolk Minerals and Waste Local Plan;
    - St Edmundsbury Core Strategy Development Plan;
    - Emerging West Suffolk Local Plan;
    - South Cambridgeshire Local Plan.
- Brownfield Registers:
    - West Suffolk Brownfield Register;
    - South Cambridgeshire Brownfield Register.
- Sites considered by the applicant.

5.1.2.1 Suffolk Minerals and Waste Local Plan

A review of the SMWLP concluded that there are no sites allocated that would be suitable for the proposed development within the 5km buffer.

5.1.2.2 St Edmundsbury Core Strategy Development Plan

A review of the SECS concluded that there are no sites allocated that would be suitable for the proposed development within the 5km buffer.

5.1.2.3 Emerging West Suffolk Local Plan (EWSLP)

Policy SP12 'Strategic employment' seeks to deliver employment land to meet the needs identified in the emerging local plan. Point e of the policy identifies general employment areas which include offices, research and development, light industrial, general industrial and storage and distribution.

There were four sites identified within Haverhill industrial estate to the south of Haverhill. The sites are all within the 5km buffer which were proposed for allocation for general employment areas. It should be noted that these sites have been assessed in terms of suitability for development and allocation in the emerging local plan by the Local Planning Authority (LPA). These are discussed in turn below.

Table 5-1: Site allocations within EWSLP

Ref.	Address	Settlement	Site Area
SP12s	Bumpstead Road	Haverhill	No information
SP12t	Falconer Road, Haverhill	Haverhill	1.77
SP12v	Haverhill Industrial Estate	Haverhill	No information
SP12w	Homefield Road	Haverhill	No information

The proposed allocated sites for industrial use are considered unsuitable for the type of proposed development as it would provide a direct conflict with existing users at the wider industrial site due to the activities not being complementary to the existing established users.

5.1.2.4 South Cambridgeshire Local Plan

A review of the South Cambridgeshire Local Plan (SCLP) concluded that there are no sites allocated fit for use within the 5km buffer.

5.1.2.5 Sites proposed in the Brownfield Register

The relevant brownfield registers comprise of the West Suffolk Brownfield Register, Suffolk Brownfield Register and the South Cambridgeshire Brownfield Register. The registers highlight any potential sites for development which have been previously exposed to built development; these sites are usually available and potentially suitable for the purposes of housing development.

Ultimately, the sites contained within the brownfield registers are specifically considered suitable for housing development, and possibly subject of planning permission for residential development, they have not been considered suitable as locations for an AD facility and have not been considered further in this Sequential Test.

5.1.2.6 Sites considered by the Applicant

The applicant undertook a review of potential sites within the vicinity of the proposed development area which could accommodate an AD site (minimum site size 5ha). Their review found three potential sites, two of which are located approximately 3.3km north of the proposed site and within the same vicinity as one another and a third site which is approximately 1km away to the northwest. Full overview plans of the three alternative sites and flood risk are included within **Appendix C** (Food Zones) and **Appendix D** (Surface Water Flooding).

Figure 5-1: Site Location Plan Showing Sites 1 and 2

The sites 1 and 2 both fall within the administration of South Cambridgeshire District Council; there is approximately a 0.31km distance between the two sites. The sites both comprise of agricultural land which adjoins further agricultural land. The village of Weston Green approximately 1.84km to the north of the sites and is the closest settlement. The site is also a former bomber command airfield during World War 2 which is known as the 'RAF Wratting Common'.

Site 1

The site comprises of 5.69ha agricultural land which can be accessed via Common Road (South). The site is rectangular in shape and is the largest of the two sites. Opposite the site to the north there is an existing new grain store facility which gained consent in November 2008. There is also a Public Right of Way (PRoW) which runs within this site towards the western portion of the land.

Figure 5-2: Site 1 Location Plan

Figure 5-2: Site 1 Flood Map (Flood Zones)

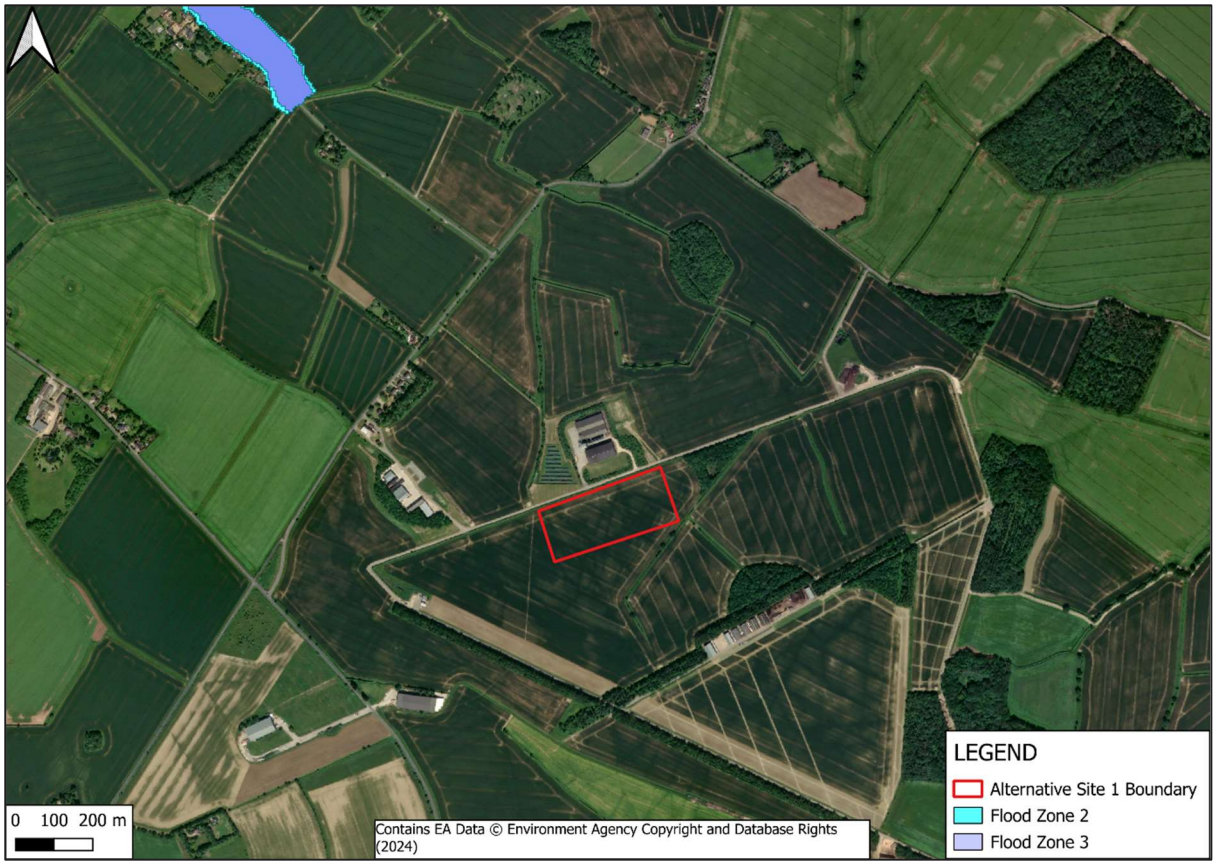
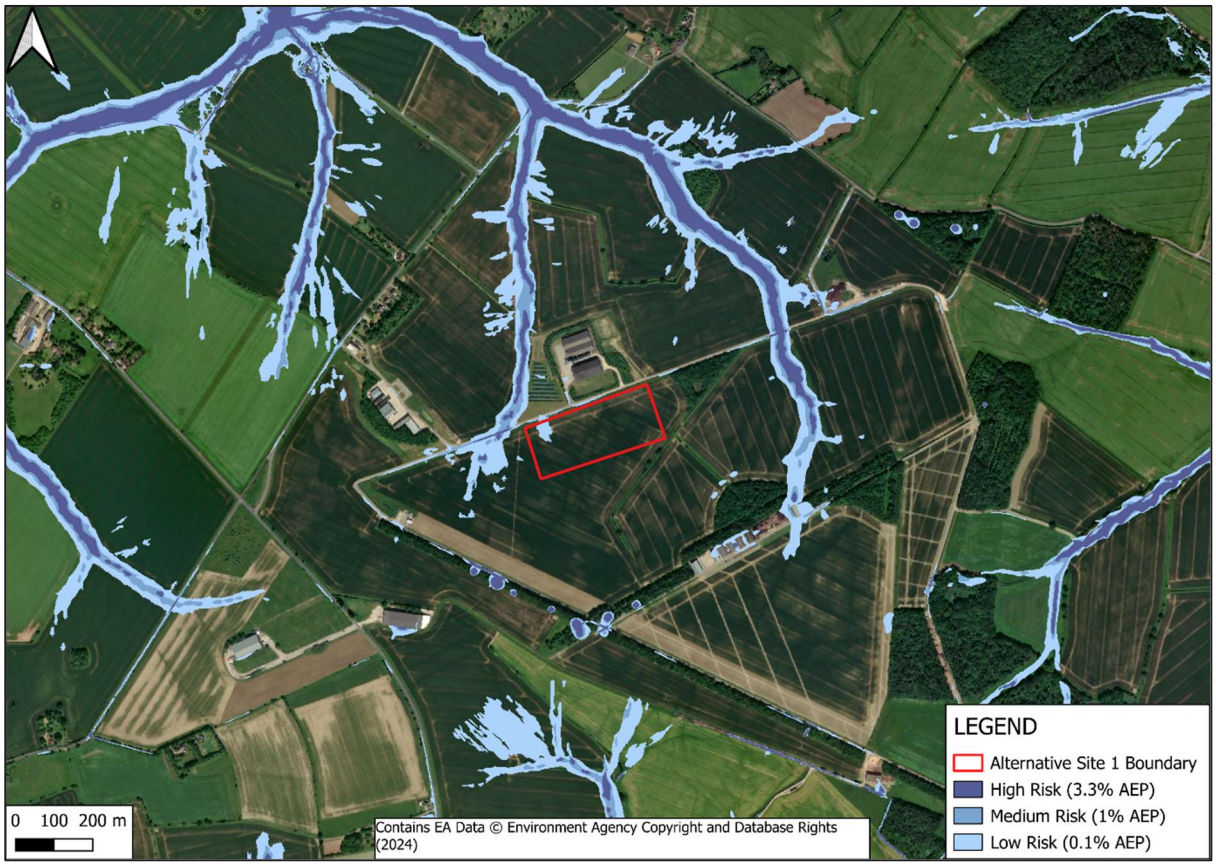


Figure 5-3: Site 1 Surface Water Flooding



The EA's Flood Map confirms that this site is located entirely within Flood Zone 1 (low probability of flooding). Additionally, with reference to the EA's surface water mapping, this site is predominantly at *very low* risk of flooding surface water with the exception of a localised area along the northwestern boundary which is *low* risk of flooding from this source.

Evaluation of Site 1

The site is located too close to the new grain facility; there may be conflict between the existing operations of the facility and the proposed AD plant. There is also a designated PRoW located to the west of the site which would have implications on the people using this. In addition to this, due to the nature of the proposal and vehicle movements, the location of the site could prove impractical to be fit for operational traffic on the narrow country lane which leads to the site and there are no alternatives to diverting traffic, and even if there were options to divert traffic there is still no clear alternative route to get to the site and is unlikely to be supported by the LPA.

Site 2

The site comprises of 4.95ha agricultural land which can be accessed via an unnamed road off Common Road where it can be seen from Common Road and Skippers Lane. The site is located west of site 1 and forms part of the wider rural matrix. It is also located to the rear of Weston Woods Farm; in between both the site and the farms is a woodland.

Figure 5-3: Site 2 Location Plan

Figure 5-4: Site 2 Flood Map (Flood Zones)

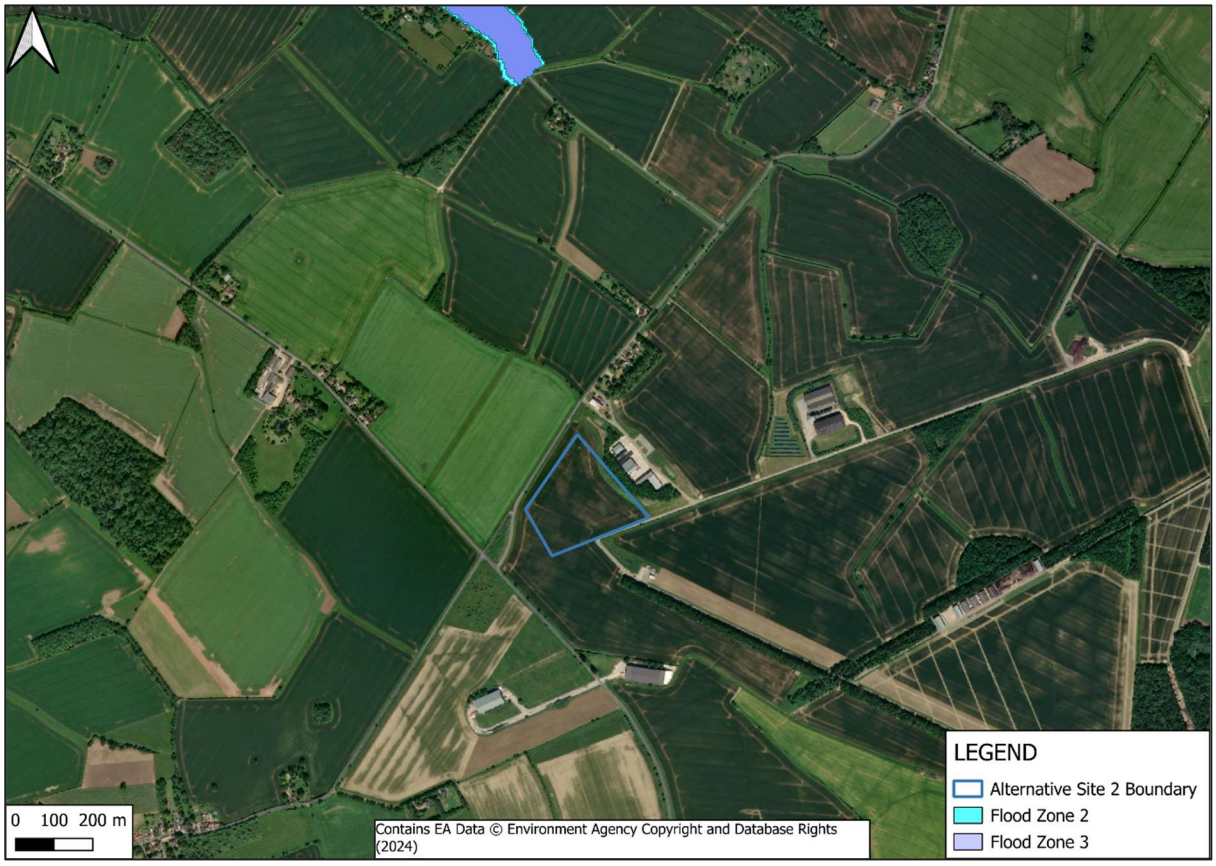
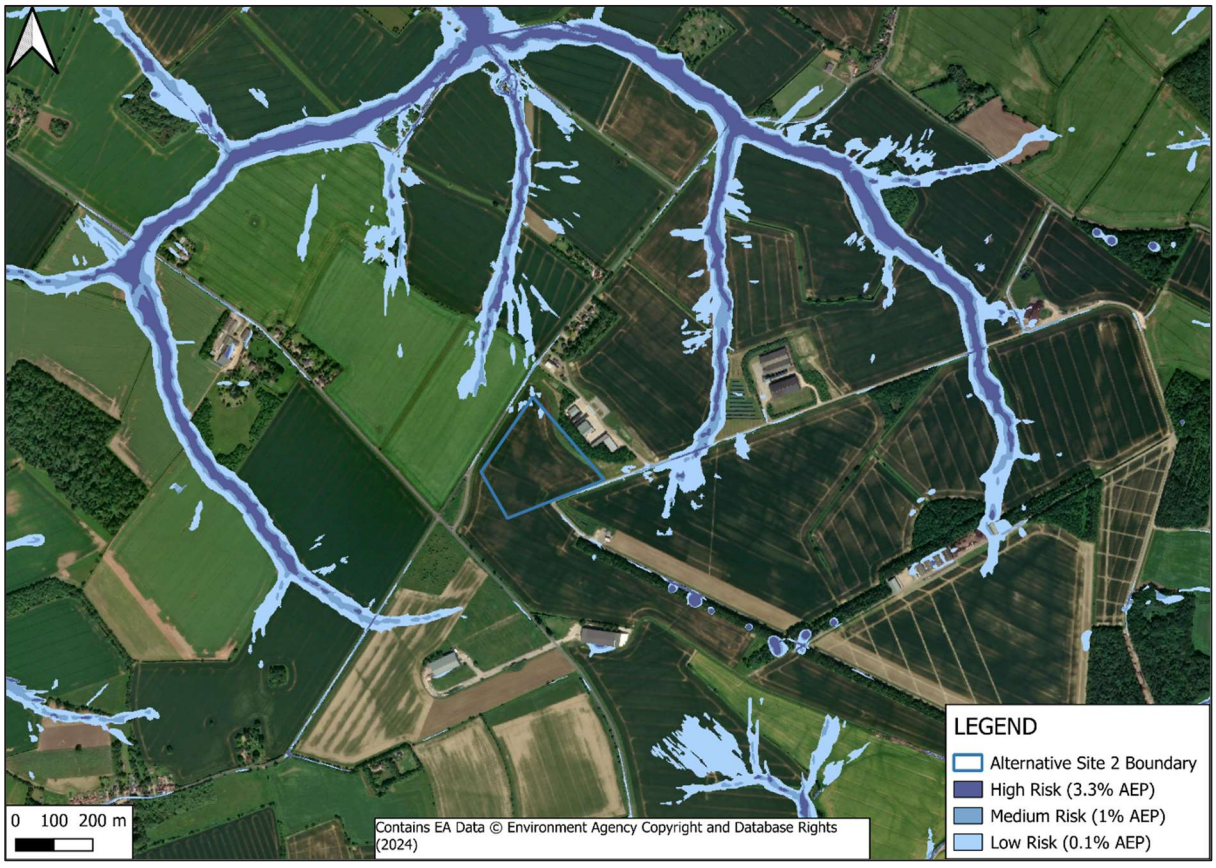


Figure 5-5: Site 2 Surface Water Flooding



The EA's Flood Map confirms that this site is also located entirely within Flood Zone 1 (low probability of flooding). Additionally, with reference to the EA's surface water mapping, this site is predominantly at *very low* risk of flooding surface water with the exception of a localised area within the northern corner of this site which is *low* risk of flooding from this source.

Evaluation of Site 2

The site sits in an area of land where it would be visible from several public vantage points, particularly off Common Road and Skippers Lane; this would have an impact on the natural landscape of the site. The operations of the proposed AD plant may also conflict with those existing at Weston Woods Farm.

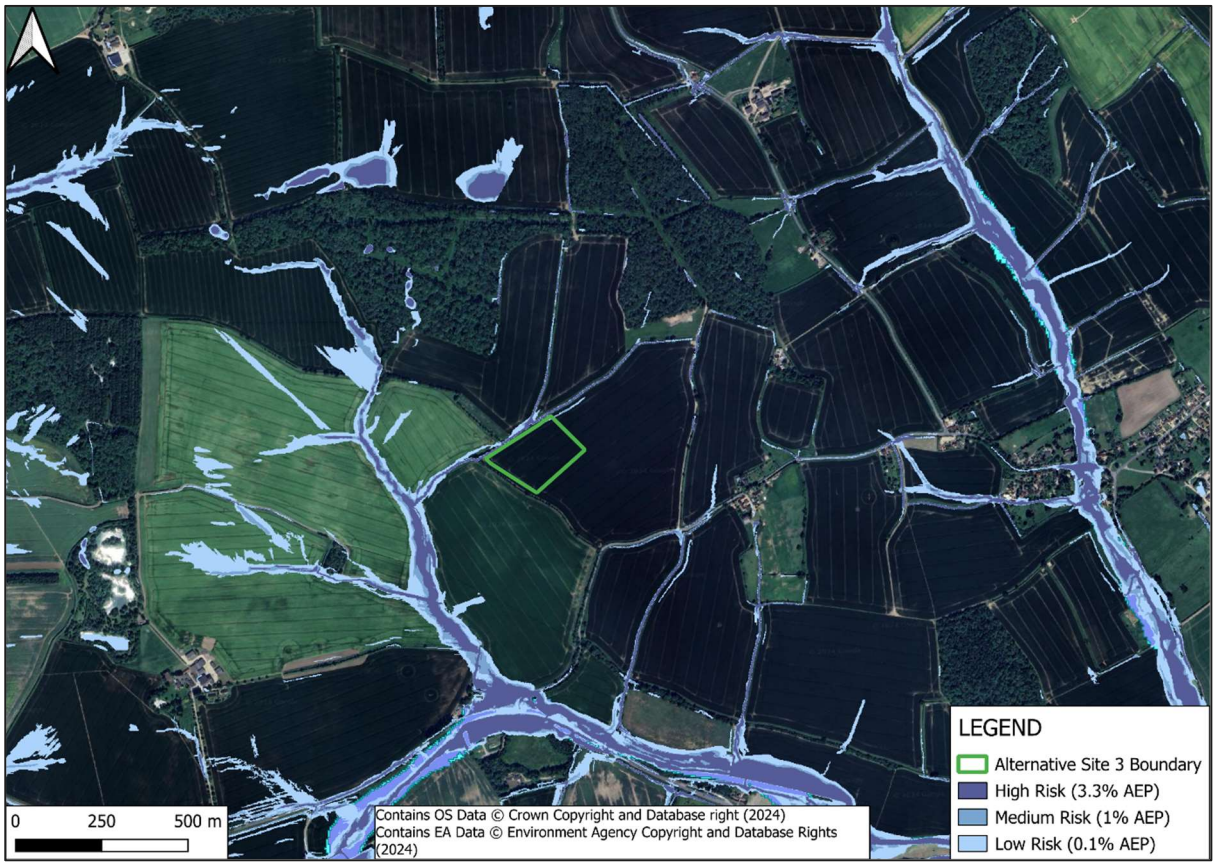
Site 3

The site is located northwest of Haverhill on land that comprises 5.89ha of agricultural practise. The site is only accessible via Silver Street towards the southern portion of the land, however, is quite isolated from the main highway itself; Silver Street is also a narrow road. A review of the site has also indicated that there is a PRoW present which runs along the northern of portion of the western boundary which continues along a small segment of the northern boundary before diverging to the north again.

Figure 5-4: Site 3 Location Plan

Figure 5-6: Site 3 Flood Map (Flood Zones)

Figure 5-7: Site 3 Surface Water Flooding



The EA's Flood Map confirms that this site is also located entirely within Flood Zone 1 (low probability of flooding). Additionally, with reference to the EA's surface water mapping, this site is predominantly at *very low* risk of flooding surface water with the exception of a localised area within the northern corner of this site which is *low* risk of flooding from this source.

Evaluation of Site 3

The portion of land available for development is located away from the main highway which may raise issues relating to accessibility. Similar to site 1, there is also a designated PRoW located along the western/ northern boundary of the site which would have implications on the people using this. Vehicle movements are an important component to this proposal but the location of the site is impractical for operational traffic on the narrow country lane; there is also a lack of alternative routes to get to the site.

5.2 Summary of the Sequential Test

Section 5.1 has reviewed all the sites considered reasonably available from a planning and from a flood risk perspective. All the sites considered have some degree of flooding associated within the expected site boundary, either from fluvial or pluvial sources.

The sites assessed by the applicant have a similar risk of pluvial flooding to the application site and that site has significant other planning risks associated with it which discount it from being considered appropriate for the proposed development.

The review of sites for the Sequential Test has therefore failed to identify any sequentially preferable, reasonably available, and appropriate sites for the proposed development within the defined Area of Search.

6.0 Conclusion

SLR Consulting Limited has been commissioned by Acorn Bioenergy Limited to Flood Risk Assessment and Surface Water Drainage Strategy to support the proposed Anaerobic Digestion Plant on land at Spring Grove Farm, Withersfield, Northwest of Haverhill, CB9 7SW.

The purpose of the Sequential Test is to steer new development to areas with the lowest probability of flooding. An Area of Search was set at a 5km radius around the chosen site due to the need for the development site to be located close to the home donor feedstock farms that will accept 92,000 tonnes per annum of feedstock from local farms.

A review of the following information sources was undertaken to identify available, alternative sites in Flood Zone 1, that would be appropriate for the proposed development:

- Allocations within the:
    - Suffolk Minerals and Waste Local Plan;
    - St Edmundsbury Core Strategy Development Plan;
    - Emerging West Suffolk Local Plan; and
    - South Cambridgeshire Local Plan.
- Brownfield Registers:
    - West Suffolk Brownfield Register; and
    - South Cambridgeshire Brownfield Register.
- Review of other sites considered by the applicant.

The staged approach set out within this Sequential Test has adequately demonstrated that there aren't any reasonably available and appropriate sites for the proposed development with a lower probability of flooding that would be appropriate for the type of development proposed.

Appendix A Site Location & Constraints Map

Flood Risk Sequential Test

Spring Grove AD Facility, Thurlow

Acorn Bioenergy Limited

SLR Project No.: 405.064987.00007

3 May 2024

560000 561000 562000 563000 564000 565000 566000 567000 568000 569000

252000 251000 250000 249000 248000 247000

11923.00002.0067.0 Designations within 2km

Park Grove (CWS)
Park Tuft (CWS)
The New Plantation (CWS)
South Cambridgeshire District
West Suffolk District
North Wood (CWS)
Littley Wood (CWS)
Over and Lawn Woods SSSI
Over and Lawn Woods SSSI
Hare Wood (CWS)
Abbacy Wood (CWS)
Norney Plantation (CWS)
Howe Wood (CWS)
West Town Park (CWS)
Haverhill Research Park
Haverhill Railway Walks LNR
Haverhill Railway Walks LNR
Haverhill Railway Walks LNR
Haverhill Railway Walks LNR
Haverhill Railway Walks LNR
Haverhill Disused Railway Line (CWS)
Chimswell Ditch (CWS)
Markham's Wood (CWS)
Ladygate and Poplar Woods (CWS)
Bumpstead Road Grassland (CWS)
West Suffolk District
Braintree District

N

LEGEND

- Site Boundary
- Site Boundary 2km Buffer
- Site of Special Scientific Interest (SSSI)
- Local Nature Reserve (LNR)
- Great Crested Newt Pond Surveys 2017 - 2019 - 10 FIG Absent
- Great Crested Newt Pond Surveys 2017 - 2019 - 10 FIG Present
- Great Crested Newt Class Survey Licence Returns
- Ancient Woodland
- County Wildlife Site (CWS)

Priority Habitat Inventory

- Lowland calcareous grassland
- Coastal and Floodplain Grazing Marsh
- Deciduous Woodland
- Good Quality Semi-Improved Grassland
- Traditional Orchard
- No Main Habitat but Additional Habitats Present
- Local Authority Boundary

0 0.5 1 Kilometres

acorn BIOENERGY

SLR
4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

SPRING GROVE GREEN POWER

ECOLOGY

DESIGNATIONS WITHIN 2KM

DRAWING 1

Scale 1:30,000 @ A3

Date FEBRUARY 2022

Appendix B Indicative Feedstock Catchment Area

Flood Risk Sequential Test

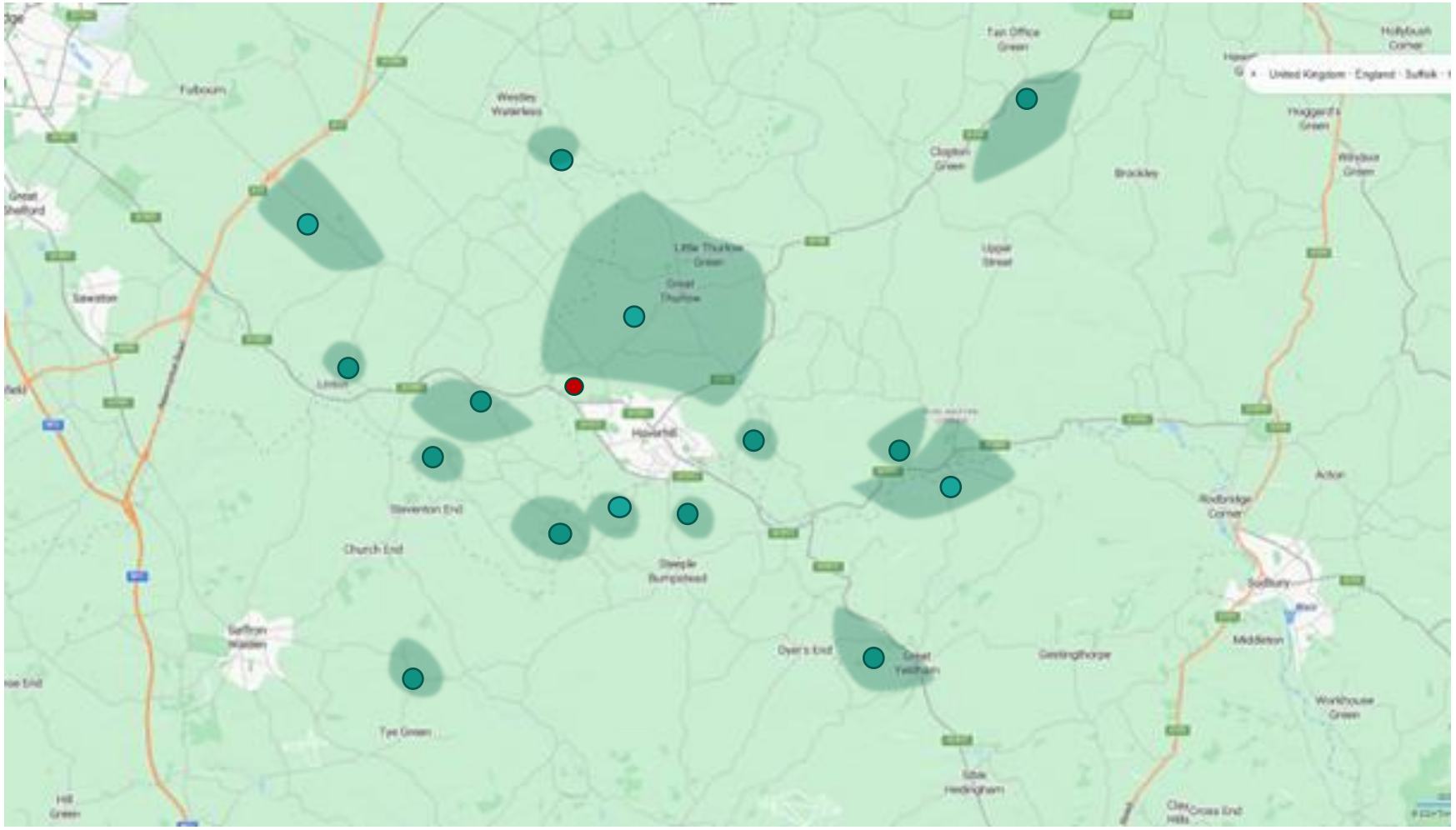
Spring Grove AD Facility, Thurlow

Acorn Bioenergy Limited

SLR Project No.: 405.064987.00007

3 May 2024

Distribution of Interested Purpose Grown and Residue Feedstock Counterparties Spring Grove Green Power



- Proposed site
- Interested feedstock counterparties
- Area indicative of feedstock catchment

Appendix C Flood Map – Alternative Sites

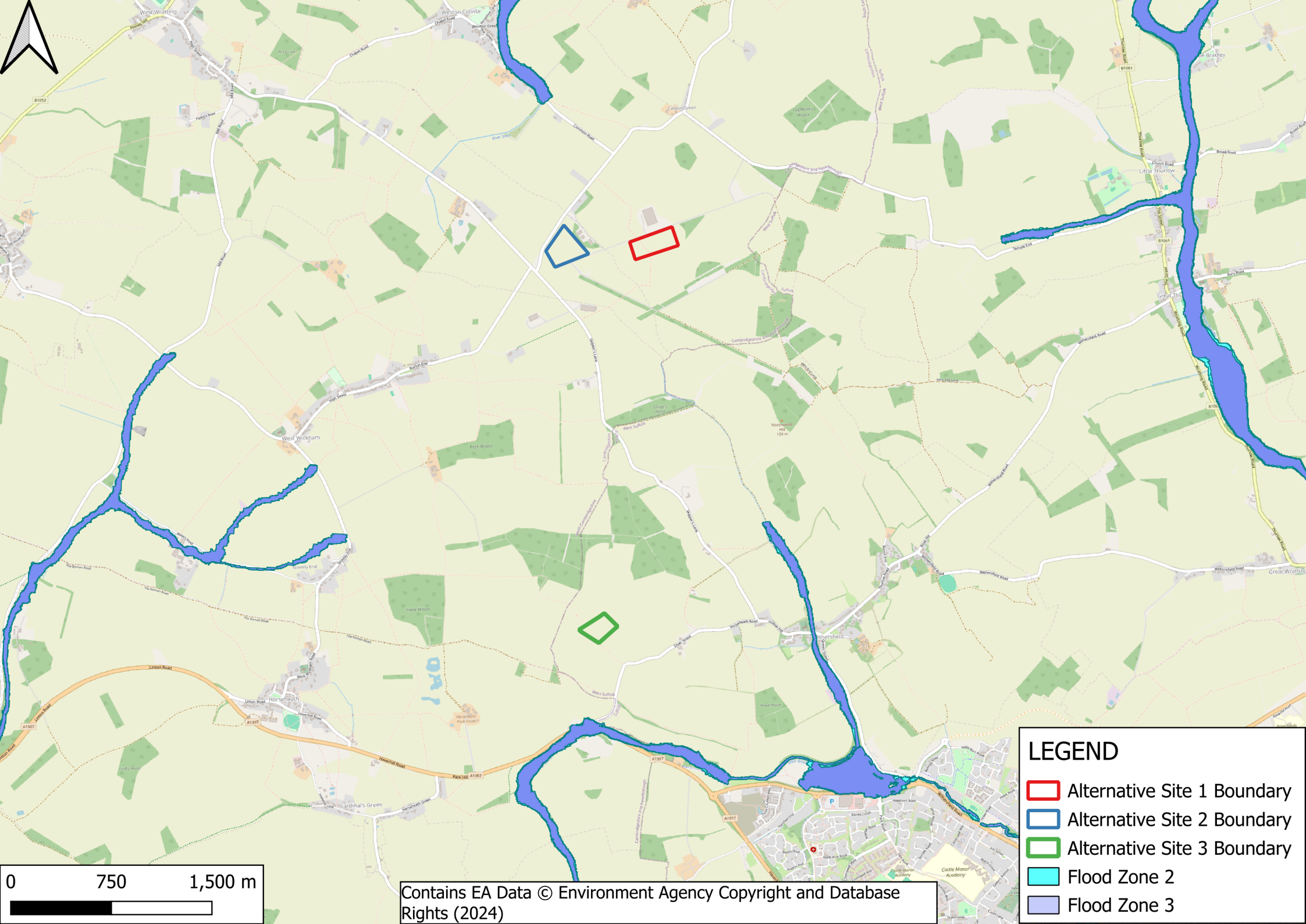
Flood Risk Sequential Test

Spring Grove AD Facility, Thurlow

Acorn Bioenergy Limited

SLR Project No.: 405.064987.00007

3 May 2024


LEGEND
Alternative Site 1 Boundary
Alternative Site 2 Boundary
Alternative Site 3 Boundary
Flood Zone 2
Flood Zone 3
0
750
1,500 m
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Appendix D Surface Water Flooding – Alternative Sites

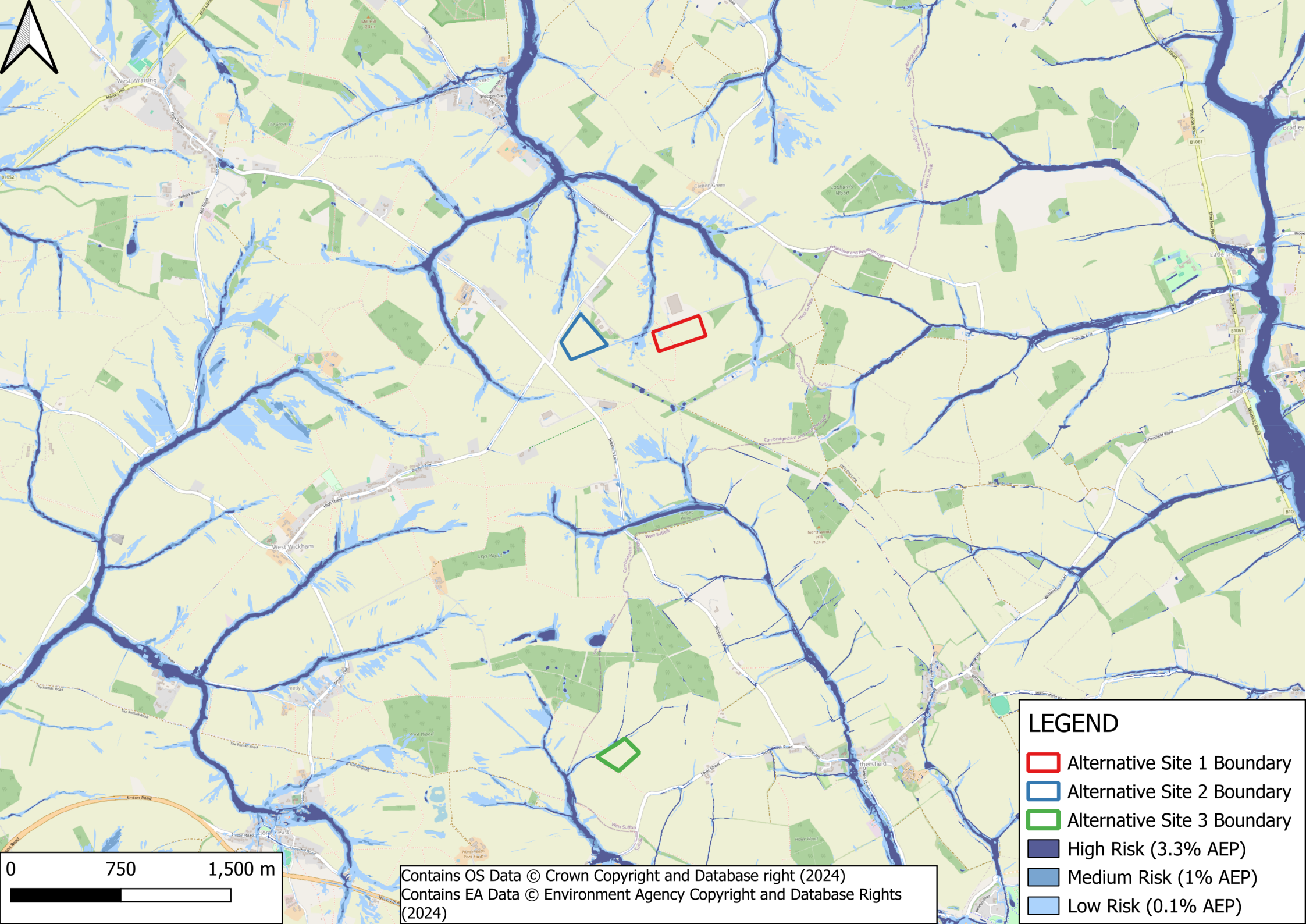
Flood Risk Sequential Test

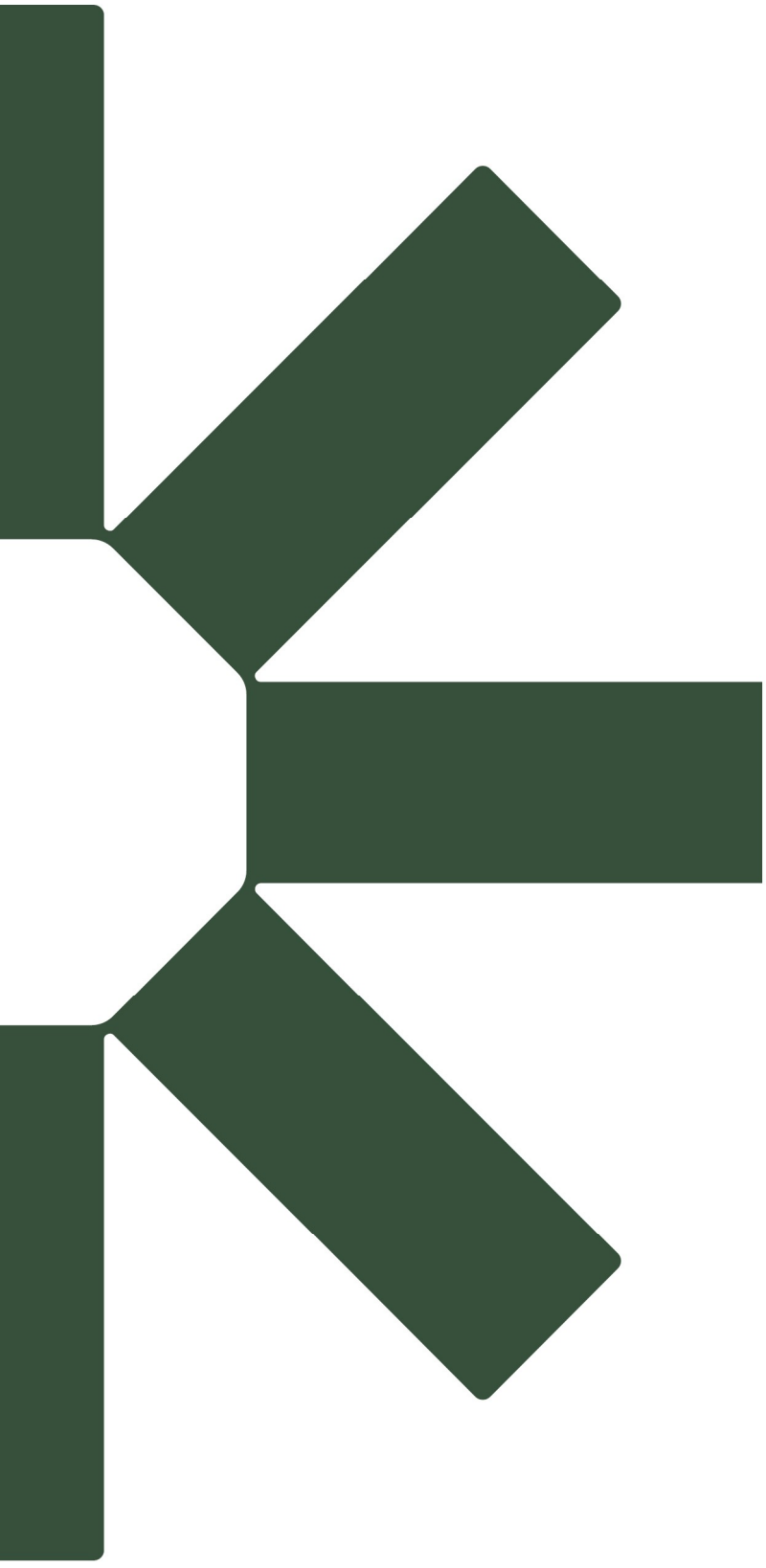
Spring Grove AD Facility, Thurlow

Acorn Bioenergy Limited

SLR Project No.: 405.064987.00007

3 May 2024


LEGEND
Alternative Site 1 Boundary
Alternative Site 2 Boundary
Alternative Site 3 Boundary
High Risk (3.3% AEP)
Medium Risk (1% AEP)
Low Risk (0.1% AEP)
0
750
1,500 m
Contains OS Data © Crown Copyright and Database right (2024)
Contains EA Data © Environment Agency Copyright and Database Rights (2024)



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