Tween Bridge Solar Farm

Environmental Statement
Appendix 10.1: Flood Risk Assessment
Part 1

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

APFP Regulation 5(2)(e)

Document Reference: 6.3.10.1

May 2026

Revision ~~2~~3

FLOOD RISK ASSESSMENT AND OUTLINE SURFACE WATER DRAINAGE STRATEGY

Land at Tween Bridge

Thorne, Metropolitan Borough of Doncaster, South Yorkshire

On behalf of RWE Renewables UK Solar and Storage Limited

Date: 19~~05~~/05/2026 | Pegasus Ref: P21-3484

Document Management

Version	Date	Author	Checked/ Approved by:	Reason for revision
Version 2	05/05/2026	LG	RA	Updated to reflect EA Relevant Representation Comments, Updated EA Flood Model Data, Flood Zone 3b Comments Raised During Issue Specific Hearing 1 and Latest SFRA and National Flood Risk Information
Version 3	19/05/2026	LG	RA	Reference updates, updated FEMP, updated O&M Manual.

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1. Introduction

Background

1.1. Pegasus Group has been appointed by RWE Renewables UK Solar and Storage Limited (the Applicant) to undertake a Flood Risk Assessment (FRA) and surface water drainage strategy for Tween Bridge Solar Farm (the Scheme). This FRA supports **Chapter 10 ~~(~~Water Resources~~)~~ [Document Reference 6.2.10 Revision 2]** of the Environmental Statement (ES).

1.2. This FRA reports on the baseline and Scheme design information available at the time of writing. A collection of figures relevant to the Order Limits (the site) are included in **Appendix A**.

1.3. This assessment considers the risk of flooding from all sources, including tidal, fluvial, surface water, historic, groundwater, sewer and artificial sources.

1.4. An outline surface water drainage strategy has been included within this report. Final drainage strategy details will be secured via requirements at Detailed Design.

1.5. Version 2 of this FRA has been updated to reflect the Environment Agency's (EA) Relevant Representation (RR) comments **[RR-009]** dated 24th December 2025 and included in **Appendix B.**

1.6. Within their RR comments **[RR-009]** (**Appendix B**), the EA confirmed that the 2023 River Trent hydraulic model was reviewed in summer 2025, and it was concluded that it had overestimated flood risk in certain areas. This includes the Order Limits, which the EA have advised is no longer impacted by the 2023 River Trent 1 in 30 year modelled flood extent.

1.7. The EA have therefore confirmed that the 2023 River Trent 1 in 30 year extent should be excluded from the definition of Flood Zone 3b within the Order Limits, which should instead be defined based on the River Torne 1 in 30 year extent only.

1.8. In February 2026 the EA confirmed that the River Torne flood model data was updated in 2025 (see **Appendix C**). Accordingly, version 2 of the FRA incorporates this latest 2025 River Torne flood model data, superseding the previously 2018 River Torne data. The EA have

confirmed that the 2023 River Trent data is still up to date (**Appendix C**).

1.9. The removal of the 2023 River Trent 1 in 30 year flood extent from the definition of Flood Zone 3b results in a notable reduction in the extent of Flood Zone 3b identified at the Order Limits. Additionally, the 2025 River Torne 1 in 30 year extent shows a notable reduction compared to the superseded 2018 modelling data (see **Appendix A (A1)**. Version 2 of this FRA therefore shows a notably reduced extent of the functional floodplain (Flood Zone 3b) at the Order Limits, as informed by the most up to date EA flood model data.

1.10. In addition to including the 2025 River Torne 1 in 30 year extent to define Flood Zone 3b within the Order Limits, version 2 of this FRA also includes the latest 2025 River Torne 1 in 1,000 year flood extents. This, consistent with the 1 in 30 year event, generally shows a reduction within the Order Limits when compared to the 2018 modelling data previously assessed (see **Appendix A** (A2). The 2025 data does show a wider flood extent in the northeastern corner of the Order Limits.

1.11. As requested within the EA's RR comments **[RR-009]** (**Appendix B**), version 2 of this FRA has been updated to consider the potential impacts of the Scheme on floodplain storage associated with the River Torne 1 in 100 year plus climate change event. This assessment (detailed within Section 5) confirms that the conclusions of the FRA remain unchanged, with the impact of the Scheme on floodplain storage assessed as negligible.

1.12. In response to the EA's RR comments **[RR-009]** (**Appendix B**), version 2 of this FRA has also been updated to include additional information about the extent of potential access track raising and the impact this raising may have on flood storage, flood flows and off-site flood risk. When considering the small areas of access tracks to be raised, the conclusions of this FRA remain that the impact of the Scheme on flood storage is considered to be negligible. The impact of flood flows and third party flood risk have been assessed in Section 5.

1.13. Version 2 of this FRA has also been updated in response to the EA's RR comments **[RR-009]** to include the provision of further information about the Critical Flood Level. Additional context about the Critical Flood Level, provided by the EA, has been included, alongside additional information as to why providing flood risk mitigation measures against the Critical Flood Level is not possible for the Scheme.

1.14. The final updates made to version 2 of this FRA in response to the EA's RR **[RR-009]** are in relation to the proposed BESS Outline Surface Water Drainage Strategy of this report. The EA raised concerns about the suitability of the BESS Outline Surface Water Drainage Strategy (Section 7) with regards to the containment of fire water and protection of the water environment. Further information has been provided to detail how the BESS Outline Surface Water Drainage Strategy will manage potentially contaminated fire water. No alterations to the strategy have been included, as it is already designed to ensure containment of potentially contaminated fire water and protection of the water environment.

1.15. Following Issue Specific Hearing 1 (15th April 2026), version 2 of this FRA has also been updated to note the percentage of the Order Limits located in Flood Zone 3b (see Paragraph 5.24).

1.16. The final updates made to version 2 of this Flood Risk Assessment account for updates made since August 2025 when this FRA was previously updated. The latest Doncaster City SFRA **[Ref. 10-4]**, Flood Map for Planning and Risk of Flooding for Surface Water data have each been incorporated into this FRA. These updates do not impact the conclusions of this FRA.

National and Local Policies

National Policy Statements (NPS):

1.17. Any new planning application (including proposed Nationally Significant Infrastructure Projects) that requires an FRA will also require a surface water drainage strategy to be submitted. The drainage strategy must demonstrate the use of SuDS within the design and should be in line with the requirements as set out within with the relevant NPS, notably NPS EN-1 **[Ref. 10-1]** and EN-3 **[Ref. 10-2]**. Full details of these policies are included in **Chapter 5 Policy and Legislative Context [**APP-042~~Document Reference 6.2.5~~**]** of the ES.

1.18. The NPS EN-1 considers the flood risk impacts associated with energy infrastructure developments, ensuring flood risk from all sources are assessed and emphasising that proposed developments located in areas of flood risk should be designed and constructed to remain operational in times of flood. The NPS EN-1 also provides guidance in relation to the Sequential Test and Exception Test and sets out the minimum requirements for FRAs.

1.19. The policy requirement to undertake the FRA is set out in section 5.8 of NPS EN-1:

- Paragraph 5.8.13 of EN-1 states that "*A site-specific flood risk assessment should be provided for all energy projects in Flood Zones 2 and 3 in England*".

- Paragraph 5.8.21 of the EN-1 states that, "*following application of the Sequential Test, it is not possible, (taking into account wider sustainable development objectives), for the project to be located in areas of lower flood risk, the Exception Test can be applied, as defined by Table 2 of the Planning Practice Guidance. The test provides a method of allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available*".

1.20. Paragraph 2.10.84 of the NPS EN-3 states "*where a Flood Risk Assessment has been carried out this must be submitted alongside the applicant's ES. This will need to consider the impact of drainage. As solar PV panels will drain to the existing ground, the impact will not, in general, be significant.*"

National Planning Policy Framework (NPPF) (December 2024) **[Ref. 10-3]**:

1.21. Paragraph 181 of the NPPF states that a site-specific Flood Risk Assessment (FRA) will be required for proposals:

a) that are greater than 1 hectare (ha) in area within Flood Zone 1;

b) that are located in Flood Zone 2 or 3 (including minor development and change of use);

c) in an area within Flood Zone 1 which has critical drainage problems;

d) in an area within Flood Zone 1 identified in a Strategic Flood Risk Assessment as being at increased flood risk in the future;

e) in an area in Flood Zone 1 that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

1.22. The Order Limits is approximately 1,831ha in area and generally located within Flood Zone 3. A full FRA is therefore required for the Scheme.

1.23. As per paragraph 182 of the NPPF, "*Applications which could affect drainage on or around the site should incorporate sustainable drainage*

systems to control flow rates and reduce volumes of runoff, and which are proportionate to the nature and scale of the proposal. These should provide multifunctional benefits wherever possible, through facilitating improvements in water quality and biodiversity, as well as benefits for amenity."

1.24. In February 2016, the Environment Agency (EA) introduced new guidance relating to the climate change allowances that must be considered within an FRA. Since 2016, the allowances for sea level rise, peak river flow and peak rainfall have each been updated, with the most recent update occurring in May 2022.

1.25. In March 2025, the EA published new national risk information for flooding and coastal erosion to the Flood Map for Planning. This includes future scenarios accounting for climate change and new Flood Zone data. The Flood Zones are produced as part of the new National Flood Risk Assessment (NaFRA2) and were last updated in November 2025.

1.26. The NaFRA2, published in January 2025, also updated the Risk of Flooding from Surface Water (RoFSW) products. The RoFSW dataset was last updated in September 2025.

Local Policies

1.27. In addition to the requirements as discussed above, this assessment has also reviewed the information and requirements included in the City of Doncaster Council Level 1 Strategic Flood Risk Assessment (2026) **[Ref. 10-4]** (covering the western half of the Order Limits) and the North and North East Lincolnshire Strategic Flood Risk Assessment (2022) **[Ref. 10-5]** (covering the eastern half of the Order Limits).

2. Existing Order Limits & Hydrology

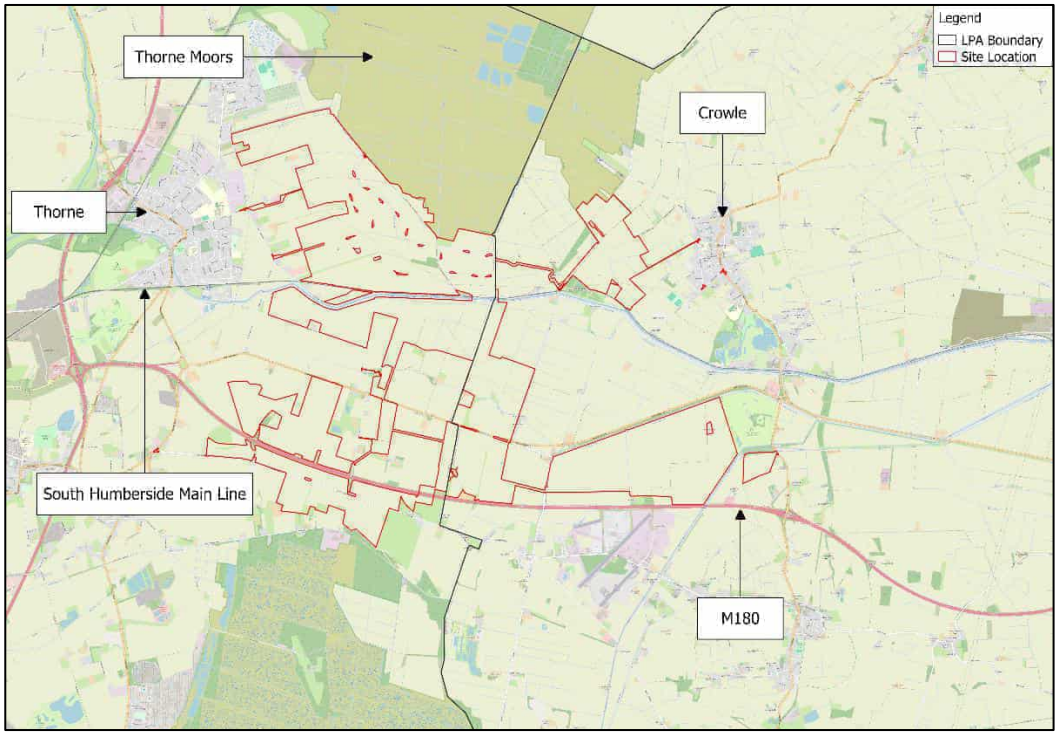
Order Limits Location & Existing Conditions

2.1. The Order Limits is situated between Thorne to the west and Crowle to the east, in the Metropolitan Borough of Doncaster, South Yorkshire. The Order Limits is dissected by several major roads and routes, including the M180 motorway, the A18, the South Humberside Main Line railway route and Stainforth and Keadby Canal. The Thorne Moors are located to the north of the Order Limits. The Order Limits location is shown in **Figure 2.1** and also included in **Appendix A (A3)**.

2.2. The Order Limits are approximately 1,831ha in area and are currently entirely greenfield.

2.3. A topographic survey of the Order Limits was carried out and shows that land is currently situated between approximately -0.2mAOD and 2.6mAOD and exhibits very low or negligible gradients.

Figure 2.1 – Order Limits Location

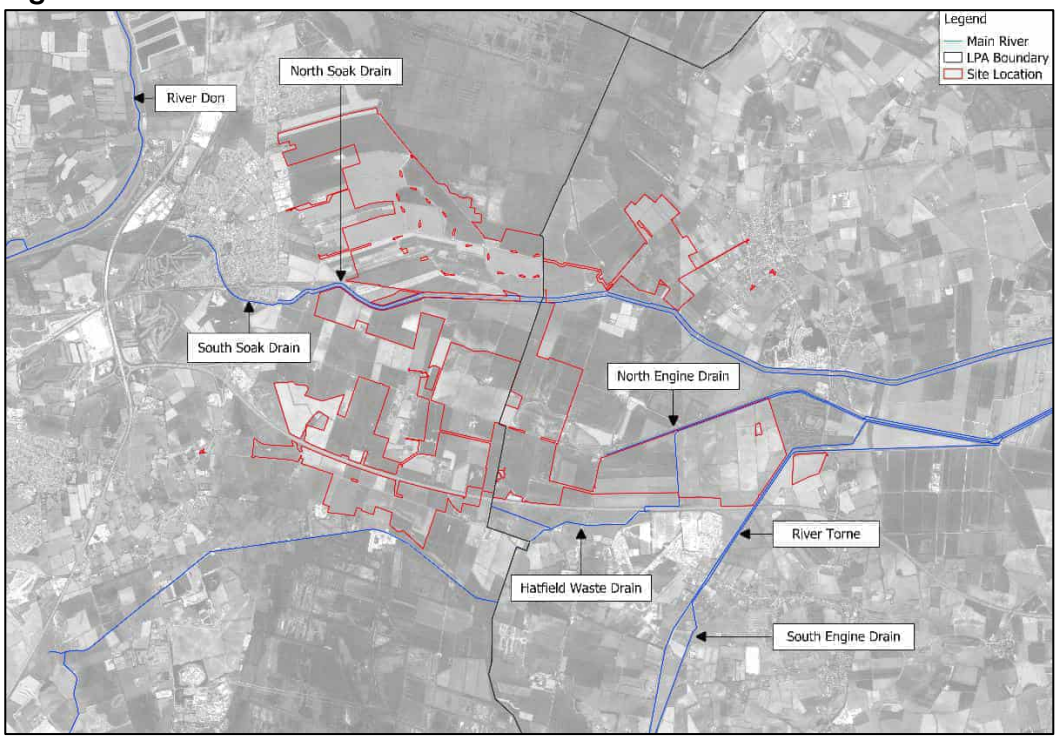


Existing Drainage and Hydrology

2.4. There are a large number of watercourses located within the Order Limits and in the immediate vicinity. These include several Main Rivers which are managed by the EA including: the North Soak Drain, the South

Soak Drain, the North Engine Drain, the South Engine Drain, the River Torne and the Hatfield Waste Drain. Main Rivers within the Order Limits and in the immediate vicinity are shown in **Figure 2.2** and also included in **Appendix A (A4)**. The River Don and River Trent (both Main Rivers) are located to the west and east of the Order Limits, respectively.

Figure 2.2 – Main Rivers



2.5. In addition to the Main Rivers discussed above, there are a large number of Ordinary Watercourses running through the Order Limits. A large number of these fall under the control of two Internal Drainage Boards (IDBs): the Isle of Axholme & North Nottinghamshire Water Level Management Board and the Doncaster East Internal Drainage Board. Ordinary Watercourses not maintained by an IDB would fall under the jurisdiction of the Lead Local Flood Authority (LLFA). IDB maintained watercourses and other Ordinary Watercourses within the Order Limits are shown in **Figure 2.3** and included in **Appendix A (A5)**. It is noted that only the extent of those watercourses within the redline boundary has been shown.

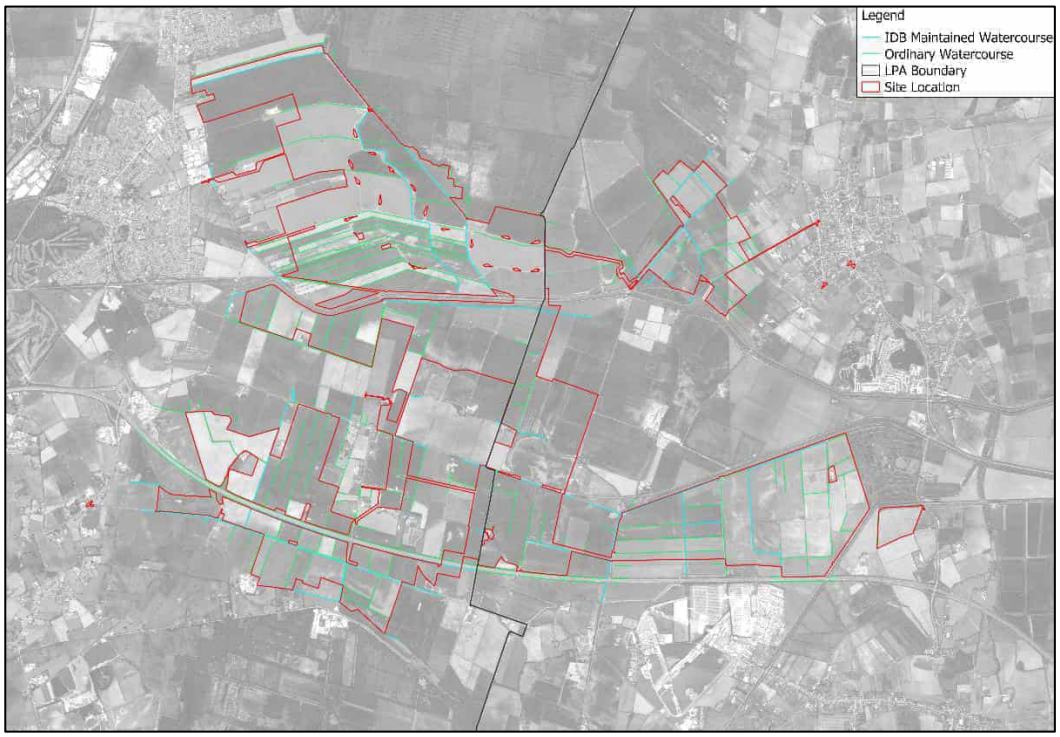
2.6. IDB mapping showing the alignment of their watercourses is also included in **Appendix D**.

2.7. IDB mapping also shows where pumping stations are located and used to control water levels of the surrounding area. There are also several culverted pipes owned and maintained by the IDBs identified on the

mapping. As the Order Limits land is currently greenfield it is considered unlikely that there are any further underground drainage assets within the Order Limits.

2.8. Each watercourse located within the Order Limits will have a buffer that is left undeveloped. These buffers are discussed in further detail in Section 5 of this report.

Figure 2.3 – IDB Maintained Watercourses and Ordinary Watercourses



2.9. Geological data from the British Geological Survey (BGS) show that the bedrock geology within the Order Limits is 'Sherwood Sandstone Group – Sandstone' in the west (Land Parcels A, C, D and E) and 'Mercia Mudstone Group – Mudstone' in the east (Land Parcels B and E) (see **Figure 2.4** and **Appendix A (A6)**).

2.10. BGS also record a wide range of superficial deposits within the Order Limits. These deposits include: 'Alluvium – Clay, Silt, Sand and Gravel', 'Hemingbrough Glaciolacustrine Formation - Clay, Silty', 'Warp – Clay and Silt', 'Peat', 'Glaciofluvial Deposits, Devensian - Sand and Gravel', 'Breighton Sand Formation - Sand, Silty' and 'Sutton Sand Formation – Sand'.

2.11. The hydrogeology aquifer classification defines the western half of the Order Limits (where sandstone is generally the underlying bedrock) as

a highly productive aquifer, whilst the eastern half (generally underlain by mudstone) is defined as a low productivity aquifer (see **Figure 2.5** and **Appendix A (A7)**).

2.12. Soilscapes data details are soil types found within the Order Limits to comprise of: 'slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils', and 'loamy and clayey soils of coastal flats with naturally high groundwater'.

2.13. The Order Limits are not located in a Drinking Water Safeguard Zone for either groundwater or surface water.

2.14. The Order Limits are located within a Total Catchment Source Protection Zone.

Figure 2.4 – BGS Bedrock Geology

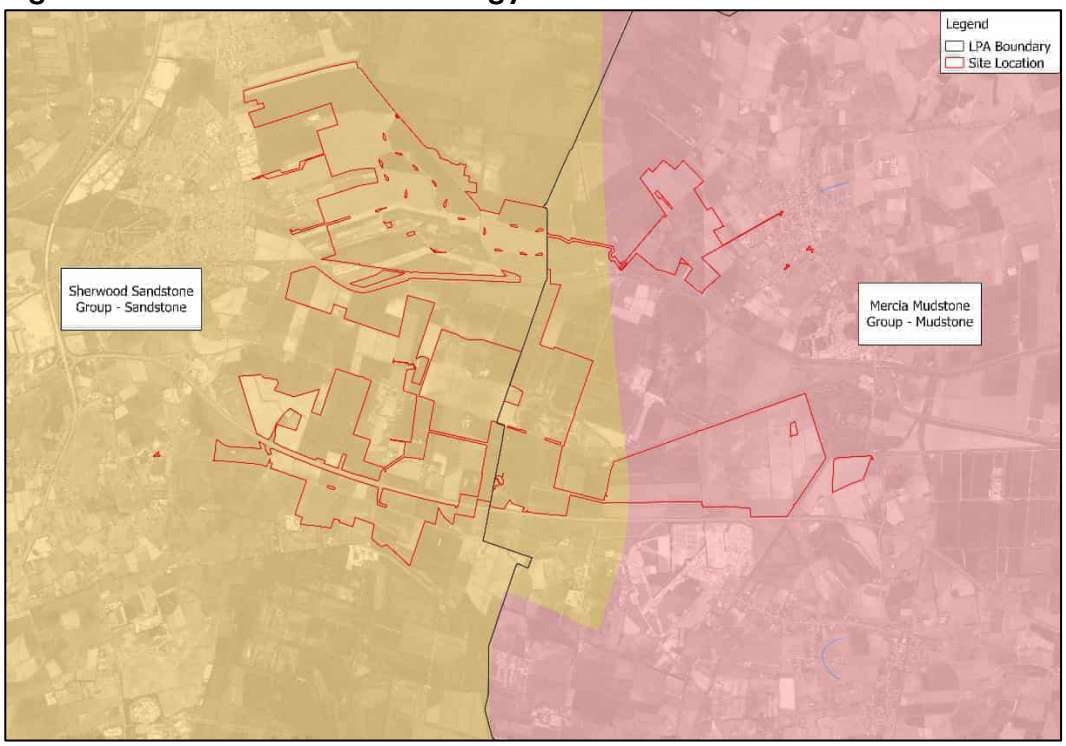
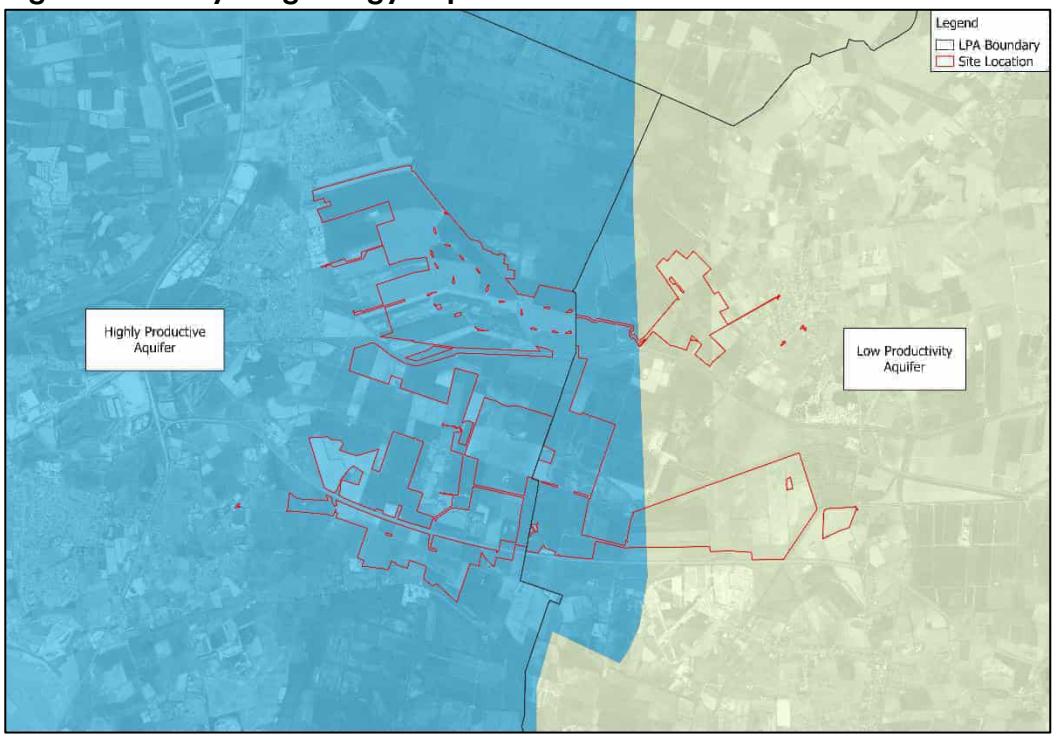


Figure 2.5 – Hydrogeology Aquifer Classification



3. The Scheme

3.1. The Scheme is a proposed solar photovoltaic (PV) electricity generation facility with an export capacity of 800 megawatts (MW) and associated storage and infrastructure located approximately 10 kilometres to the northeast of Doncaster and 14 kilometres to the west of Scunthorpe.

3.2. The RWE on-site 400kV Substation will be connected to a NGET 400kV substation by a 400kV Cable Route. It should be noted that the connection to a NGET 400kV Substation and associated cable route would be the subject of a separate consenting process and are not part of this Scheme or assessment.

3.3. An operational lifespan of 40 years would be sought linked to the first export date from the Scheme. The scheme may be carried out through a single continuous phase or in multiple phases.

3.4. At this stage, both tracker solar PV modules and fixed solar PV modules are being considered for use as part of the Scheme.

3.5. The proposed layout options and associated ancillary drawing pack are included in **Appendix E.**

4. Development Vulnerability & Flood Zone Classification

National Policy Statements [Ref. 10-1 and Ref. 10-3]

4.1. NPS EN-1 and EN-3 (described in detail in **Chapter 5 Policy and Legislative Context [**APP-042~~Document Reference 6.2.5~~**]** of the ES) require the Sequential Test and Exception Test to be applied. These are discussed further below.

4.2. The policy requirement to undertake the FRA is set out in section 5.8 of NPS EN-1.

National Planning Policy Framework (NPPF) (December 2024, updated in February 2025) [Ref. 10-3]

4.3. Paragraph 5 of the NPPF states that "*the Framework does not contain specific policies for nationally significant infrastructure projects. These are determined in accordance with the decision making framework in the Planning Act 2008 (as amended) and relevant national policy statements for major infrastructure, as well as any other matters that are relevant (which may include the National Planning Policy Framework). National policy statements form part of the overall framework of national planning policy, and may be a material consideration in preparing plans and making decisions on planning applications*".

4.4. Local Planning Authorities, (LPA) have a statutory obligation to consult the EA on all applications in the flood zones. The EA will consider the effects of flood risk in accordance with the NPPF.

4.5. NPPF requires that, as part of the planning process:

- A 'site specific' Flood Risk Assessment will be undertaken for any site that has a flood risk potential.
- Flood risk potential is minimised by applying a 'sequential approach' to locating 'vulnerable' land uses.
- Sustainable drainage systems are used for surface water management where practical.
- Flood risk is managed through the use of flood resilient and resistant techniques.

- Residual risk is identified and safely managed.

4.6. Table 1 of PPG defines each flood zone based on the probability of river and sea flooding in that area, as summarised below:

• Zone 1 - Low probability (< 1 in 1000 years for fluvial and tidal events)

• Zone 2 - Medium probability (between 1 in 1000 and 1 in 100 year for fluvial events and between 1 in 1000 and 1 in 200 year for tidal events)

• Zone 3a - High probability (> 1 in 100 year for fluvial events and > 1 in 200 year for tidal events)

• Zone 3b - The functional floodplain (>1 in 30 years for fluvial events)

4.7. Table 2 in the PPG sets out a matrix indicating the types of development that are acceptable in different Flood Zones (see **Table 4.1**). The Scheme is for a solar farm and associated battery storage and infrastructure which is classified as 'Essential Infrastructure'. The Order Limits are located in Flood Zone 3. Essential Infrastructure is appropriate in Flood Zone 3, subject to passing the Exception Test (see **Table 4.1**).

Table 4.1 – PPG Guidance

Flood Zones	Flood Risk Vulnerability Classification				
	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test Required	✓	✓	✓
Zone 3a	Exception Test Required	✗	Exception Test Required	Exception Test Required	✓
Zone 3b	Exception Test Required	✗	✗	✗	✓

Sequential Test

4.8. According to the "Flood risk and coastal change" Planning Practice Guidance (PPG) **[Ref. 10-6]**; *"the Sequential Test should be applied to 'Major' and 'Non-major development' proposed in areas at risk of flooding*". The PPG states that the Sequential Test is intended to *"steer new development to areas with the lowest risk of flooding, taking all sources of flood risk and climate change into account*".

4.9. Flood risk from all sources is assessed below in Section 5. Given the identified flood risk at the Order Limits, notably the Order Limits location in Flood Zone 3, the Sequential Test is required.

4.10. A **Sequential Test and Exception Test [Document Reference 7.11 Revision 2]** has been prepared as a standalone document included in the DCO application submission documents.

4.11. Below however is a summary of the application of the Sequential Test for the Order Limits.

- The Order Limits is at risk from both fluvial and surface water flooding sources.
- Alternative sites identified are also at risk from elements of flooding, some sources at the alternative sites are sequentially preferable (fluvial sources), others, such as surface water are not sequentially preferable to the Order Limits.

4.12. The alternative sites which have been assessed are more constrained by close proximity of other designations than the proposed Order Limits are.

- The Order Limits are situated outside of any statutory designated sites for nature conservation with the exception of a small 0.53ha area of Thorne & Hatfield Moors Special Protection Area (SPA), Thorne Moor Special Area of Conservation (SAC), Thorne, Crowle and Goole Moors Site of Special Scientific Interest (SSSI) and Hatfield Chase Ditches SSSI.

4.13. Whilst the Moors SPA/SAC/SSSI lies within the Order Limits they are outside the development footprint and therefore no work is scheduled within these designated sites.

4.14. In summary, across the three sites it is evident that some flood risk matters may be sequentially preferable at the identified alternative

sites (fluvial sources), but no alternative site is without some degree of flood risk, when all sources of flooding are considered, as set out in the NPPG.

4.15. However, it is clear that the Order Limits is more sequentially preferable in wider sustainable development terms, as it is not significantly affected by heritage constraints, habitat and ecology constraints and landscape constraints to the same degree and close proximity as the alternative sites assessed are (refer to **Appendix F**).

4.16. It is therefore concluded that the Sequential Test is passed, but as a majority of the Order Limits is located in Flood Zone 3, in accordance with relevant policy in paragraph 5.8.9 of EN-1, the Exception Test must be applied to the development in accordance with the guidance on how the Exception Test is to be applied in the NPPG.

4.17. Paragraph 5.8.21 of NPS EN-1 references the PPG when discussing the sequential test.

4.18. In accordance with NPS EN-1, if, following application of the Sequential Test, it is not possible, (taking into account wider sustainable development objectives), for the project to be located in areas of lower flood risk, the Exception Test can be applied, as required by Table 2 of the PPG. The Exception Test is discussed below.

Exception Test

4.19. As the Order Limits is located within Flood Zone 3, it will be necessary to pass the Exception Test.

4.20. There are two parts to the Exception test that the proposals must demonstrate:

1. That development that has to be in a flood risk area will provide wider sustainability benefits to the community that outweigh flood risk; and

2. That 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.

4.21. The sustainability benefits of the proposals are self-evident. They include:

- A reduction in carbon emissions and greenhouse gas emissions,

- A reduced dependency on the National Grid, and
- Reduced strain on finite resources like coal, oil, and natural gas which are contributing to global warming.

4.22. A complete analysis of the sustainability benefits of the Scheme is included elsewhere in the ES.

4.23. Part 2 of the Exception Test will be addressed, in part, throughout this report which provides evidence to show that the Scheme will be safe from flooding over its lifetime (see Section 5) and details how the Scheme will not increase flood risk elsewhere.

4.24. In accordance with NPS EN-1, the Exception Test is only appropriate for use where the Sequential Test alone cannot deliver an acceptable site. As detailed above, both elements of the Exception Test are satisfied for development to be consented.

5. Site Specific Flooding Issues and Existing Flood Records

National Planning Policy Framework (NPPF) [Ref. 10-3]

5.1. In accordance with the National Planning Policy Framework (December 2024), this Flood Risk Assessment considers all sources of flooding including:

a) Tidal Flooding – from the sea.

b) Fluvial Flooding – from rivers and streams.

c) Surface Water Flooding – from overland surface water flow and exceedance.

d) Historic Flooding – known historic flooding issues.

e) Groundwater Flooding – from elevated groundwater levels or springs.

f) Flooding from Sewers – exceedance flows from existing sewer systems; and

g) Artificial Sources – reservoirs, canals etc.

Tidal Flooding

5.2. The Flood Map for Planning (2026) defines the majority of the Order Limits as Flood Zone 3 (high probability of flooding), predicted to be impacted by a 1 in 200 year tidal flood event. Tidal flood risk at the Order Limits is associated with the tidally influenced River Trent (there are also fluvial sources of flooding to consider – see Fluvial Flooding section below).

5.3. The Flood Map for Planning also highlights flood defences at the Order Limits.

5.4. The Flood Map for Planning is shown in **Figure 5.1** and included as a larger, A3 drawing in **Appendix A (A8).**

5.5. The Risk of Flooding from Rivers and Seas dataset was released in January 2025. A plan of the Risk of Flooding from Rivers and the Sea dataset is included in Appendix A (A9). The dataset predicts the vast majority of the Order Limits to be at risk of flooding.

5.6. In addition to the datasets discussed above, the EA have provided detailed hydraulic model data for the Tidal Trent. This data is from the 2023 Tidal Trent model. The EA's data issue sheet is included in **Appendix G.**

5.7. The detailed Tidal Trent flood model data received from the EA included modelled flood levels and depths for a range of different return periods for combined scenarios of tidal and fluvial flooding. As detailed in the "flood risk and coastal change" Planning Practice Guidance, the design event flood for tidal flooding is the 1 in 200 year tidal flood event plus an allowance for climate change. Taking a precautionary approach however, the 1 in 1,000 year tidal flood event data has been reviewed, along with the data for a range of other return period events and various combinations of tidal and fluvial flood scenarios.

5.8. The most severe modelled flood event in the received Tidal Trent 2023 model outputs is the 1 in 1,000 year flood event for both a tidally dominated and fluvially dominated scenarios. Both of these worst case events have been reviewed and the fluvially dominated 1 in 1,000 year flood event shows a notably greater flood extent and greater flood levels than the tidally dominated 1 in 1,000 year flood event. A plan showing both the tidally dominated and fluvially dominated 1 in 1,000 year flood extents is included in **Appendix A (A10).**

5.9. As the fluvially dominated 1 in 1,000 year flood extent and levels are notably worse than the tidally dominated 1 in 1,000 year flood extent and levels, mitigation measures proposed have been designed against the modelled fluvially dominated 1 in 1,000 year flood event. Fluvial flood risk is discussed in detail below and should also be referenced in terms of the measures proposed to ensure the Scheme remains safe and operational during a tidally dominated extreme flood event.

5.10. Using the 1 in 1,000 year fluvially dominated flood event to design flood risk mitigation measures represents a precautionary approach, with a greater event than the required 1 in 200 year plus climate change tidal design flood event being used. It is considered that the 1 in 1,000 year is a worst case event and that as such, an allowance for climate change has not been included above and beyond this. The 1 in 1,000 year event has effectively been used as a worst case proxy for the 1 in 200 year plus climate change event.

5.11. Mitigation measures are proposed to include raising the lowest edge of all solar PV modules and all infrastructure above the modelled

fluvially dominated 1 in 1,000 year flood levels plus an allowance of 100mm of freeboard.

5.12. With the proposed mitigation measures in place, designed against a worst-case fluvially dominated 1 in 1,000 year flood event, the Scheme would be designed to remain safe and operational during a 1 in 1,000 year tidal flood event, which is shown to be significantly less severe than the fluvially dominated event, as informed by detailed hydraulic data from the EA.

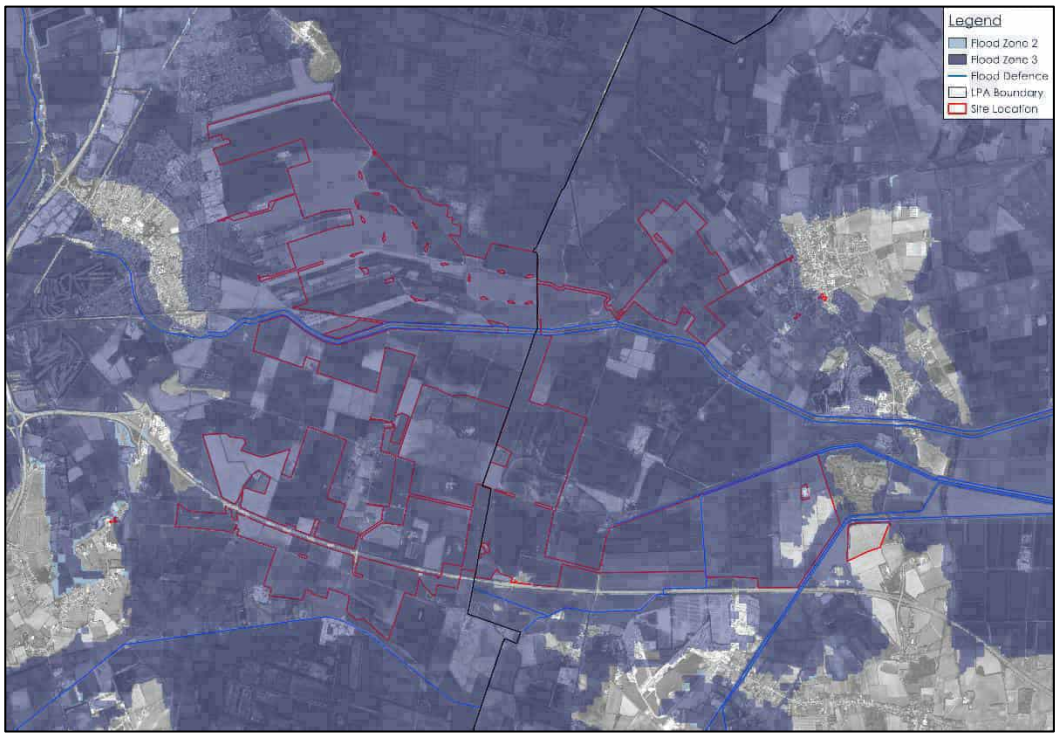
5.13. With the proposed mitigation measures in place, the tidal flood risk to the Scheme is therefore considered to be **Low**.

5.14. Statutory consultation with the Environment Agency (received 22 January 2025) confirmed that the raising of panels would be sufficient to allow the Order Limits to remain operational during a range of extreme flood events. The EA requested more information regarding the Flood Zone 3b extents and proposals for raising the switchgear.

5.15. Provision of an updated ancillary drawing pack and Flood Zone 3b extent information was provided to the EA (issued 27th January 2025 and 3 February 2025). Following this, comments from the EA were received (6 February 2025) and confirmed they are content with the proposed tidal and fluvial flood risk mitigation measures and updated switchgear drawings proposed within the Order Limits. Correspondence from the EA is included in **Appendix G.**

5.16. As noted in Section 1, the extent of Flood Zone 3b within the Order Limits as advised by the EA and informed by 2025 River Torne hydraulic model data, has reduced (refer to Paragraphs 5.20 to 5.27 below). The updated extent of Flood Zone 3b is reflected within version 2 of this report. The revised Flood Zone 3b extent does not change any of the proposed tidal and fluvial flood risk mitigation measures which as noted above, the EA have confirmed they are content with.

Figure 5.1 – Flood Map for Planning



Fluvial Flooding

Flood Map for Planning and Risk of Flooding from Rivers and Sea

5.17. The Flood Map for Planning (2026) defines the majority of the Order Limits as Flood Zone 3, at High risk of flooding, predicted to be impacted by a 1 in 100 year fluvial flood event. This essentially places the majority of the Order Limits within Flood Zone 3a. The Flood Map for Planning is shown in **Figure 5.1** and included as a larger, A3 drawing in **Appendix A (A8).**

5.18. The Risk of Flooding from Rivers and Seas dataset was released in January 2025. A plan of the Risk of Flooding from Rivers and Seas dataset is included in **Appendix A (A9)**. The dataset predicts the vast majority of the Order Limits to be at risk of flooding.

Flood Zone 3b

5.19. Detailed flood model data received from the EA includes information on the extent of Flood Zone 3b within the Order Limits. Flood Zone 3b is defined as the functional floodplain that *"comprises land where water from rivers or sea has to flow or be stored in times of flood"*. The extent of Flood Zone 3b is defined as "*land having a 3.3% or greater annual probability of flooding, with any existing flood management*

infrastructure operating effectively". This is any land predicted to be at risk during a 1 in 30 year flood event.

5.20. Version 2 of this FRA has been updated to reflect the Environment Agency's (EA) Relevant Representation (RR) comments dated 24th December 2025 and included in **Appendix B.**

5.21. Within their RR comments **[RR-009]** (**Appendix B**), the EA advised that the 2023 River Trent model was reviewed in summer 2025 and it was concluded that the 2023 River Trent model had overestimated flood risk in certain areas. This was the case for the Order Limits, which the EA have advised is no longer impacted by the 2023 River Trent 1 in 30 year modelled flood extent. The EA therefore confirmed that the 2023 River Trent 1 in 30 year extent could be excluded from the definition of Flood Zone 3b within the Order Limits, which should instead be based on the River Torne 1 in 30 year extent only.

5.22. In February 2026 the EA confirmed that the River Torne flood model data was updated in 2025 (see **Appendix C**). Version 2 of the FRA therefore also incorporates this latest 2025 River Torne flood model data, updating the previous inclusion of the 2018 River Torne data. The EA have confirmed that the 2023 River Trent data is still up to date (**Appendix C**).

5.23. The removal of the 2023 River Trent 1 in 30 year flood extent from the definition of Flood Zone 3b notably reduces the extent of Flood Zone 3b defined within the Order Limits. The 2025 River Torne 1 in 30 year extent also shows a notable reduction compared to the 2018 data. Version 2 of this FRA therefore shows a notable reduced extent of the functional floodplain (Flood Zone 3b) within the Order Limits, as informed by the most up to date EA flood model data.

5.24. The 2025 Torne 1 in 30 year flood extent, defines approximately 116ha of the approximately 1,831ha Order Limits as Flood Zone 3b. This accounts for just 6.3% of the Order Limits. The majority of the site is located in the Flood Map for Planning Flood Zone 3 extent, predicted to be impacted by a 1 in 100 year flood event. Further flood events and the area of Order Limits predicted to be impacted are detailed below in **Table 5.1**.

Table 5.1 – Order Limits and Areas Impacted by Various Flood Events

Model	Event	Area of Order Limits Impacted (Hectares)	Percentage of Order Limits Impacted (%)
River Torne Model (2025)	1 in 30 year	116	6.3%
	1 in 100 year +39% Climate Change	284	15.5%
	1 in 1,000 year	523	28.6%
River Trent Model (2023)	1 in 1,000 year	1154	63.0%

5.25. The 2025 River Torne 1 in 30 year Flood Zone 3b extent is shown in **Appendix A (A11).** In addition, the online interactive mapping for both the City of Doncaster SFRA (2026) **[Ref. 10-4]** and North and North East Lincolnshire SFRA **[Ref. 10-5]** displays the same Flood Zone 3b extent as the new Torne Model Data (2025) as shown in **Appendix H**.

5.26. **Appendix A11** shows that majority of Flood Zone 3b (FZ3b) within the Order Limits is solar PV modules, however there are a number of inverters and spares containers also located within the extent and a small western extent of the proposed BESS.

5.27. As detailed in **Table 4.1**, in accordance with the PPG, Essential Infrastructure is acceptable in both Flood Zone 3a and Flood Zone 3b, subject to passing the Exception Test (discussed above in Section 4). The Scheme, including solar PV modules and associated infrastructure, is located in both Flood Zone 3a and 3b is therefore considered to be acceptable.

5.28. NPS EN-1 **[Ref. 10-1]** further details, in Paragraph 5.8.41, that in relation to energy projects within Flood Zone 3b specifically, that "where essential energy infrastructure has to be located in such areas, for operational reasons, they should only be consented if the development will not result in a net loss of floodplain storage, and will not impede water flows".

5.29. As mentioned above, just 6.3% of the Order Limits is within Flood Zone 3b and as detailed in Paragraph 5.26, development located within Flood Zone 3b generally comprises solar PV modules. In terms of the operational reasons for locating development within Flood Zone 3b, this development is necessary for the Applicant to deliver the operational objective of exporting 800MW to the national electricity transmission system within the land available for the Scheme.

5.30. Development within Flood Zone 3b has generally been avoided with the exception of:

1. A limited number of inverters which are required to be evenly distributed across the Order Limits to provide adequate coverage for the panels and minimise losses within the system. The Applicant has sought to minimise the number of inverters within Flood Zone 3b to just those required to ensure operational efficiency of the Scheme and will similarly follow this principle at detailed design stage.

2. A small section of the BESS compound and substation within Land Parcel A. A substation is required in this location to provide adequate coverage for the Scheme and to deliver an efficient design that minimises system losses and cable costs. The BESS compound is required to be co-located with this substation as it is of a sufficient size to accommodate the BESS, and to ensure system losses and costs associated with the BESS are minimised. While these components are very largely located outside Flood Zone 3b, a small part of their footprint needs to be located within Flood Zone 3b to enable these components to be located wholly outside the "topple zones" of the existing wind turbines in this Land Parcel (the topple zone/distance is commonly defined as the tip height of the turbine plus a 10% safety buffer, measured from the base of the turbine). This is required to minimise the risk to the critical infrastructure within the Scheme and ensure safe operation.

3. A limited number of spares containers, which need to be distributed evenly across the Order Limits to ensure the Scheme can be efficiently maintained through the operational phase.

5.31. In all instances infrastructure operationally required to be located in Flood Zone 3b will be raised above the 1 in 1,000 year flood level plus 100mm of freeboard – this is a worst case design scenario, that would ensure the infrastructure also remains operational in any lesser flood event.

5.32. The impact of the Scheme on floodplain storage and water flows is assessed in detail below. With the proposed mitigation measures in place, the Scheme will have a negligible impact of floodplain storage and water flows.

Impact on Floodplain Storage

5.33. It is also noted that the Scheme is considered to have a negligible impact on existing floodplain storage within the Order Limits within the 2025 River Torne 1 in 100 year plus climate change extent, refer to **Appendix A (A12)**. The ancillary drawing pack included in **Appendix E** and **ES Chapter 2 Scheme Description [Figure 2.6]** highlights the typical details of the solar PV modules and associated infrastructure. The ancillary drawings show that:

- The impermeable area of any proposed fixed solar PV modules will comprise small feet drilled directly into the ground with no need for concrete foundations.
- That where any fixed solar PV modules proposed within the Order Limits require ballasting, that the ballast slab will be sat on a permeable gravel sub-base.
- Proposed tracker panels within the Order Limits will comprise a negligible impermeable area.
- Where any tracker panels require ballasting, the ballast slabs will have a pile of stones and geotextile membrane below.
- The proposed solar PV modules will have their lowest edge raised above the ground (above the modelled 1 in 1,000 year flood level plus 100mm of freeboard as discussed above). This raising will not include raising of existing ground levels, with the raising achieved using small feet/piles drilled into the ground or mounted to ballast slabs.
- Inverter buildings, battery containers, customer switchgear containers and spares containers will be sat on a 300mm gravel base and be raised at least 0.5m above the ground, ensuring raising above the modelled 1 in 1,000 year flood level plus 100mm freeboard. This raising will not include raising of existing ground levels. The infrastructure will generally be raised using isolated blocks sat on a 300mm gravel base.

5.34. The ancillary drawing pack included in **Appendix E** and **ES Chapter 2 Scheme Description [Figure 2.6]** also includes typical details of the

proposed access tracks within the Order Limits. The vast majority of access tracks across the Order Limits will require no raising above existing ground levels. There are however alternative no-dig designs that include the access tracks being raised 350 to 400mm above the ground. The locations of proposed access track raising are detailed in **Appendix A** (figure A13 and A14).

5.35. There are no areas proposed for access track raising within Flood Zone 3b (2025 Torne 1 in 30 year flood extent) (see **Appendix A**, **Figure A13**) and there are just two isolated locations where access track raising is expected to be required within the 2025 River Torne 1 in 100 year plus climate change flood extent (see **Appendix A**, **Figure A14**). Where raising is required, this will be along a length of just 5 to 10m to provide mitigation for other factors such as Root Protection Areas or utilities where a no-dig methodology is required.

5.36. Given the minimal extent of access track raising proposed within the 2025 River Torne 1 in 100 year plus climate change flood extent, noting also that access tracks will comprise permeable materials, the impact of the access track on floodplain storage is considered to be negligible. A series of figures showing each area of proposed access track raising within the 1 in 100 year plus climate change flood extent are included in **Appendix A** (A14), highlighting how the areas of raised access tracks are considered to have a negligible impact on floodplain storage, existing flows and third party flood risk.

5.37. It is noted that at the time of writing, the EA has confirmed that they consider that "raised track locations are likely to have a relatively minor impact on the function of the floodplain" (see **Appendix G**), whilst also requesting further evidence that flows would not be deflected towards third party land. This additional work will be provided to the EA during the ongoing flood risk and drainage discussions.

5.38. Based on the typical details outlined above, the proposed solar PV modules and associated infrastructure will comprise permeable construction and allow floodwaters to flow freely beneath them. Accordingly, the Scheme within the 2025 River Torne 1 in 100 year plus climate change flood extent is considered to have an overall negligible impact on existing floodplain storage and water flows.

Flood Risk Mitigation

5.39. As detailed in the tidal flooding section above, flood risk mitigation measures within the Order Limits have been designed against the

fluvially dominated 1 in 1,000 year flood levels defined by the 2023 Tidal Trent flood model outputs plus an allowance for 100mm of freeboard. This event has been identified as the worst case of the modelled flood events from the 2023 Tidal Trent model.

5.40. Using the 1 in 1,000 year fluvially dominated flood event to design flood risk mitigation measures represents a precautionary approach, with a greater event than the required 1 in 100 year plus climate change fluvial design flood event being used. It is considered that the 1 in 1,000 year is a worst case event and that as such, an allowance for climate change has not been included above and beyond this. The 1 in 1,000 year event has effectively been used as a worst case proxy for the 1 in 100 year plus climate change event.

5.41. The lowest edge of all proposed solar PV modules and all associated infrastructure within the Order Limits will be raised above this flood level to ensure the Scheme remains safe and operational during times of extreme flood. This proposed raising is detailed in the ancillary drawing pack included in **Appendix E.**

5.42. The proposed raising of solar PV modules and infrastructure within the Order Limits in mAOD is shown in **Appendix I.** For additional context, **Appendix J** shows the fluvially dominated 1 in 1,000 year flood depths plus 100mm of freeboard (the proposed raising required in metres above the ground).

5.43. In addition to the 2023 Tidal Trent data, the EA also provided updated detailed hydraulic model data for the 2025 River Torne hydraulic model (see **Appendix C**). The outputs of the updated River Torne model predict significantly reduced flood risk within the Order Limits compared to the Tidal Trent model discussed above and as such, proposed mitigation measures designed with reference to the 2023 Tidal Trent outputs are considered to provide an appropriate level of protection against fluvial flood risk associated with the River Torne. **Appendix A (A15)** includes a plan comparing both the Tidal Trent 1 in 1,000 year fluvially dominated flood extent and the 1 in 1,000 year River Torne 1 in 1,000 year extent.

5.44. To ensure maintenance access to watercourse buffers is not impacted by the Scheme, all IDB watercourses and Main Rivers will have a 9m buffer which is left clear of all development. Ordinary Watercourses will have a 5m buffer and are maintained by the landowner.

Critical Flood Level

5.45. In addition to providing detailed hydraulic flood model data from the latest 2023 Tidal Trent model and the River Torne 2025 model, correspondence with the EA (received 22 January 2025) (included in **Appendix G**) highlights that land drainage represents the dominant flood risk and that the Order Limit is located in the Isle of Axholme Critical Drainage Area which has a reported critical flood level of 4.1mAOD, as stated in the SFRAs **[Ref. 10-4], [Ref. 10-5]**.

5.46. The EA provided further information on the Isle of Axholme Critical Flood Level via email on 14th April 2026. This information is included within **Appendix G**. To summarise, the EA advise that the Critical Flood Level represents the flood level that may be reached if the management of water levels and flood risk in the Isle of Axholme is not maintained. The Critical Flood Level would be reached gradually over a period of 9 years. The EA further stated that "*we do however recognise that there are often planning or physical constraints which a developer can present which prevent mitigation to these levels.*"

5.47. As discussed above, mitigation measures within the Order Limits are proposed to include raising the lowest edge of all solar PV modules and all infrastructure above the 2023 Tidal Trent modelled fluvially dominated 1 in 1,000 year flood level plus an allowance of 100mm of freeboard (see **Appendix I**). As noted in Paragraph 5.15, the EA have confirmed they are content with these proposed tidal and fluvial flood risk mitigation measures.

5.48. Although advised by the EA that the Order Limits has a critical flood level of 4.1mAOD, given that the ground levels generally vary between approximately -0.2mAOD and 2.6mAOD, it is not feasible to raise proposed solar PV modules and associated infrastructure above this critical flood level.

5.49. From a design perspective, raising solar PV panels above the Critical Flood Level would require a reduction to the tilt of the panels which would decrease generation, and/or require an increase in the overall height of the panel mounting structures, in turn increasing both installation and maintenance costs. Increasing the height would also worsen the visual impact, increase wind loadings, and increase pile length and associated cost.

5.50. It is also noted that from a landscape point of view, that the height of solar PV panels in the UK is informed by the height of hedges that can be grown to screen them. This Scheme has already increased the typical height slightly to 3.6m to account for the proposed flood risk

mitigation measures. It would not be feasible or desirable from a landscape point of view to raise infrastructure any further.

5.51. It is also noted that a flood level of 4.1mAOD would flood a significant area well beyond the Order Limits area, including vast areas of the towns of Thorne and Crowle and their associated residential areas. Large extents of large roads surrounding the Order Limits would also be flooded during a 4.1mAOD flood event, including the M180, M18, A161 and A18. The vast majority of the South Humberside Main Line railway line in the vicinity would also be flooded.

5.52. **Appendix A (A16)** includes a plan that highlight those areas around the Order Limits that are situated below 4.1mAOD and that would subsequently be flooded during a 4.1mAOD flood event as defined by LiDAR downloaded from the gov.uk website.

5.53. **Appendix A (A17)** includes a plan indicating the raising required in meters about ground level to raise equipment to 4.1mAOD.

5.54. It is also worth noting that there are no known historic flood events reaching a level of 4.1mAOD within the Order Limits or in the local area. There are in fact no known historic flood events having impacted the Order Limits (historic flooding is discussed in further detail below).

5.55. Based on the above, it is considered to be wholly disproportionate to design flood risk mitigation measures against the critical flood level of 4.1mAOD when such an event would flood significant areas of the surrounding area, including notable infrastructure and development.

5.56. In addition, although no formal information has been provided from the EA as to how the critical flood level has been derived, it is understood that this level accounts for an absolute worst-case scenario where no defences are acting to protect the Order Limits. This includes failure of a range of IDB and EA controlled pumping stations which control water levels within the Order Limits and a large surrounding area. Given the design life of the development is 40 years, this event and the critical flood level of 4.1mAOD is considered a highly unrealistic scenario.

5.57. In terms of the impact on the Scheme should a catastrophic 4.1mAOD flood event occur, the Scheme would be "switched off" and not be accessed, with all management to be done remotely.

5.58. Overall, with the proposed mitigation measures in place, the fluvial flood risk to the Scheme is considered to be **Low,** with the Scheme

being designed to remain safe and operational during an extreme 1 in 1,000 year fluvial flood event.

5.59. It is also noted that comments received from the Environment Agency during "non-statutory consultation" confirm they are generally happy with the proposed tidal and fluvial flood risk mitigation measures. Correspondence from the EA is included in **Appendix G.**

Surface Water Flooding

5.60. Surface water flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.

5.61. The new National Flood Risk Assessment (NaFRA2), published in January 2025 (last updated in September 2025), has updated the Risk of Flooding from Surface Water (RoFSW) products which show the chance of flooding from surface water to areas of land.

5.62. The RoFSW products are an assessment of where surface water flooding may occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. It includes information about flooding extents and depths including the potential impact of climate change on flood risk, based on the latest UK Climate Projections (UKCP18).

5.63. Risk is displayed as one of three likelihood categories in the RoFSW dataset:

- 'High Risk' (High Likelihood); >3.3% AEP (annual probability greater than 1 in 30).
- 'Medium Risk' (Medium Likelihood); 1.1% to 3.3% AEP (annual probability between 1 in 100 and 1 in 30).
- 'Low Risk' (Low Likelihood); 0.1% to 1% AEP (annual probability between 1 in 1000 and 1 in 100).

5.64. The latest RoFSW depth mapping shows the annual chance of flooding (based on the three risk categories listed above) beyond a specific depth, for depths at several intervals from 20cm to 120cm (i.e. 0.2m, 0.3m, 0.6m, 0.9m, and 1.20m).

5.65. The RoFSW dataset shows that some areas of the Order Limits are not predicted to be impacted by a 1 in 1,000 year rainfall event and have a Very Low likelihood of surface water flooding (see **Appendix A (A18)**). The dataset also highlights areas within the Order Limits with a High to Low likelihood, predicted to be impacted by a 1 in 30 and 1 in 1000 year rainfall event, respectively, spread across the Order Limits. These at-risk areas are generally focused on isolated low spots and associated with surface water arising within the Order Limit boundary itself.

5.66. Surface water flood depths within the Order Limits are generally not predicted to exceed 300mm within the Order Limits (see depth plan in **Appendix A (A19)**). The lowest edge of proposed solar PV modules and any infrastructure in areas at risk of surface water flooding will be raised above the predicted maximum flood depths. This will ensure that the proposed panels will be safe over their lifetime and that surface water flow patterns will not be impacted.

5.67. In addition to the above mitigation measures, surface water arising within the Order Limit boundary itself will be managed with a proposed surface water drainage strategy for the development. This is detailed at a high level in Section 7 below.

5.68. Overall, with the necessary mitigation measures and a future surface water drainage strategy in place, it is considered that the Scheme will be at **Low** risk of flooding from surface water.

Historic Flooding

5.69. The EA's Historic Flood Map dataset does not record any historic flood events impacting the Order Limits. The nearest recorded historical events are located approximately 1.5km north of the northern end of the Order Limits, 0.9km west of the Order Limits western boundary and 5km east of the easternmost Land Parcel of the Order Limits boundary (see **Figure 5.2** and **Appendix A (A20)**).

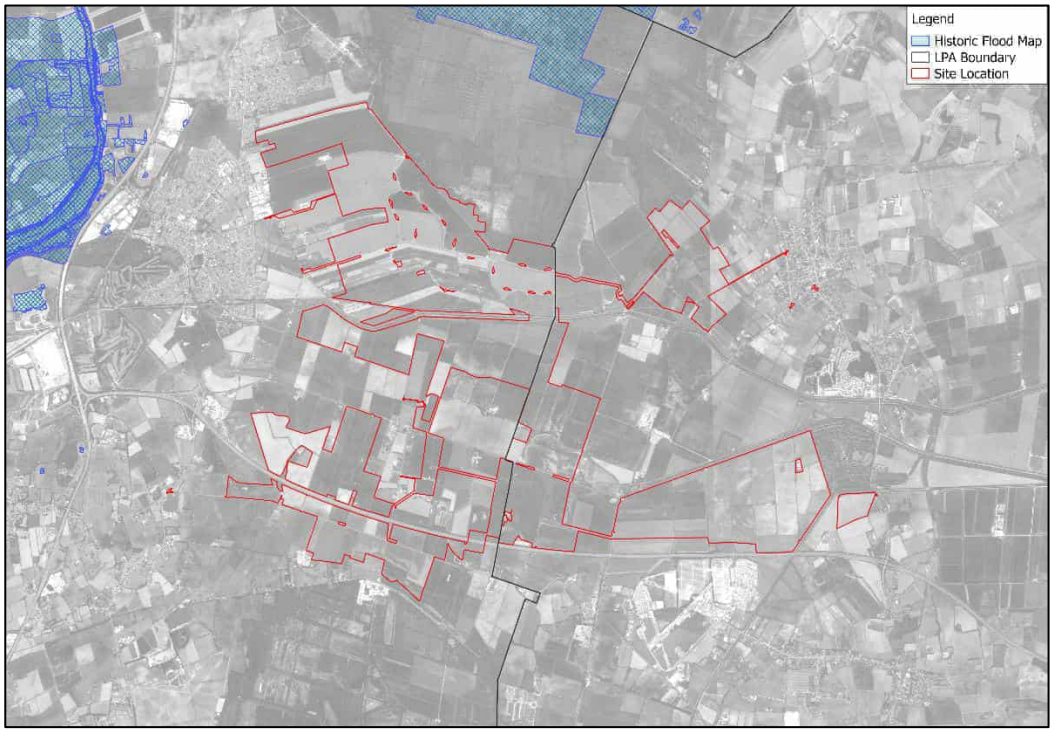
5.70. The Doncaster Level 1 Strategic Flood Risk Assessment interactive mapping (2026) (covering the western half of the Order Limits) does not indicate any recorded flood outlines impacting the Order Limits.

5.71. The North and North East Lincolnshire Strategic Flood Risk Assessment (2022) (covering the eastern part of the Order Limits) refers to the EA's mapping discussed above when discussing historical flooding in the region and as such, does not highlight any site specific historic flood events.

5.72. There are no known historic flood events having impacted the Order Limits.

5.73. Overall, the historic flood risk to the Order Limits is considered to be **Low**.

Figure 5.2 – Historic Flood Map



Groundwater Flooding

5.74. As discussed above in Section 2, bedrock geology within the Order Limits is split between sandstone in the west (Land Parcels A, C, D and E) and mudstone in the east (Land Parcels B and E). It is considered likely that the sandstone in the west will be permeable, whilst the mudstone in the east is expected to be impermeable. There is potential for groundwater emergence where these two bedrocks meet.

5.75. The hydrogeology aquifer classification defines the western half of the Order Limits (Land Parcels A, C, D and E where sandstone is generally the underlying bedrock) as a highly productive aquifer, whilst the eastern half of the Order Limits (Land Parcels B and E which are generally underlain by mudstone) is defined as a low productivity aquifer. As with having two different bedrocks, there is potential for groundwater emergence where these two aquifer types meet.

5.76. A wide range of superficial deposits are also recorded at the Order Limits (see Section 2). Any clay superficial deposits across the Order

Limits are expected to restrict groundwater emergence. Soilscapes data also details the presence of clayey soils across parts of the Order Limits, which will also act to reduce the risk of groundwater emergence.

5.77. Given the number of watercourses within the Order Limits and in the surrounding area, it is considered unlikely that groundwater would rise above the fluvially influenced flood levels.

5.78. The Doncaster Level 1 Strategic Flood Risk Assessment (2026) provides data on the risk of groundwater emergence across Doncaster using Jeremy Benn Associates (JBA) 5m Groundwater Emergence map. The interactive mapping categorises by grid code and shows that the majority of the Order Limits is classified as 'grid code 0', defined as no risk.

5.79. The Order Limit topography is also not considered conducive to groundwater flooding – any ground water to emerge is generally expected to follow Order Limit topography and fall towards the numerous watercourses within the Order Limits without accumulating to significant depths.

5.80. Overall, given the above, although there is potential for groundwater emergence within the Order Limits, the risk is considered to be **Low**.

Flooding from Sewers

5.81. The Doncaster Level 1 Strategic Flood Risk Assessment (2026) interactive mapping demonstrates that there have been no Severn Trent Water Incidents in the ward in which the Order Limits is located.

5.82. The North and North East Lincolnshire Strategic Flood Risk Assessment (2022) states that 'sewerage drainage problems' have been mapped on their 'interactive maps'. These interactive maps have not been found freely available to view online at the time of writing this report (July 2025) and as such, no records of sewer flooding within the Order Limits have been found.

5.83. As the Order Limits is entirely greenfield, it is unlikely that there is an existing underground drainage network located within the Order Limits. Additionally, any flood water from sewers in the close vicinity of the Order Limits would follow local topography and would not be expected to accumulate within the Order Limits boundary.

5.84. The risk of flooding from sewers to the Scheme is therefore considered to be **Low.**

Flooding from Artificial Sources

5.85. The EA's Reservoir Flood Extents shows the extent of flooding should a catastrophic breach occur during a 'wet day' when local rivers had already overflowed their banks and highlights parts of the Order Limits to be at risk during a 'wet day' (see **Figure 5.3**). The Order Limits is not shown to be at risk during a 'dry day' when local rivers are not overflowing their banks and is included as a larger, A3 drawing in **Appendix A (A21)**.

5.86. There are 11 reservoirs listed within the EA's Reservoir Flood Extents dataset as posing a risk to the Order Limits should a catastrophic reservoir breach occur during a wet day. These reservoirs and their national grid reference are listed below.

1. Baitings (SE0100018900)
2. Deanhead (SE0380015200)
3. Gorple Upper (SD9240031400)
4. Harden (SE1530003700)
5. Scammonden (SE0520016520)
6. Walshaw Dean Middle (SD9665033550)
7. Walshaw Dean Upper (SD9680034500)
8. Warley Moor (SE0300031700)
9. Widdop (SD9300033000)
10. Winscar (SE1530002600)
11. Withens Clough (SD9840023000)

5.87. The location of the above listed 11 reservoirs is shown in **Appendix A (A21)**. The reservoirs are located a significant distance from the Order Limits, between approximately 55km and 80km west of the western boundary of the Order Limits.

5.88. The North and North East Lincolnshire Strategic Flood Risk Assessment (2022) states that *"reservoir flooding is extremely rare in the UK due to very strict regulations and mandatory assessments"*. As such, the likelihood and risk of a catastrophic reservoir breach occurring within the Order Limits is considered to be Very Low.

5.89. The Stainforth and Keadby Canal runs through the centre of the Order Limits, roughly in line with the South Humberside Main Railway Line. The North and North East Lincolnshire Strategic Flood Risk Assessment (2022) advises that this canal is managed by British Waterways and only highlights flood risk associated with the canal where it is

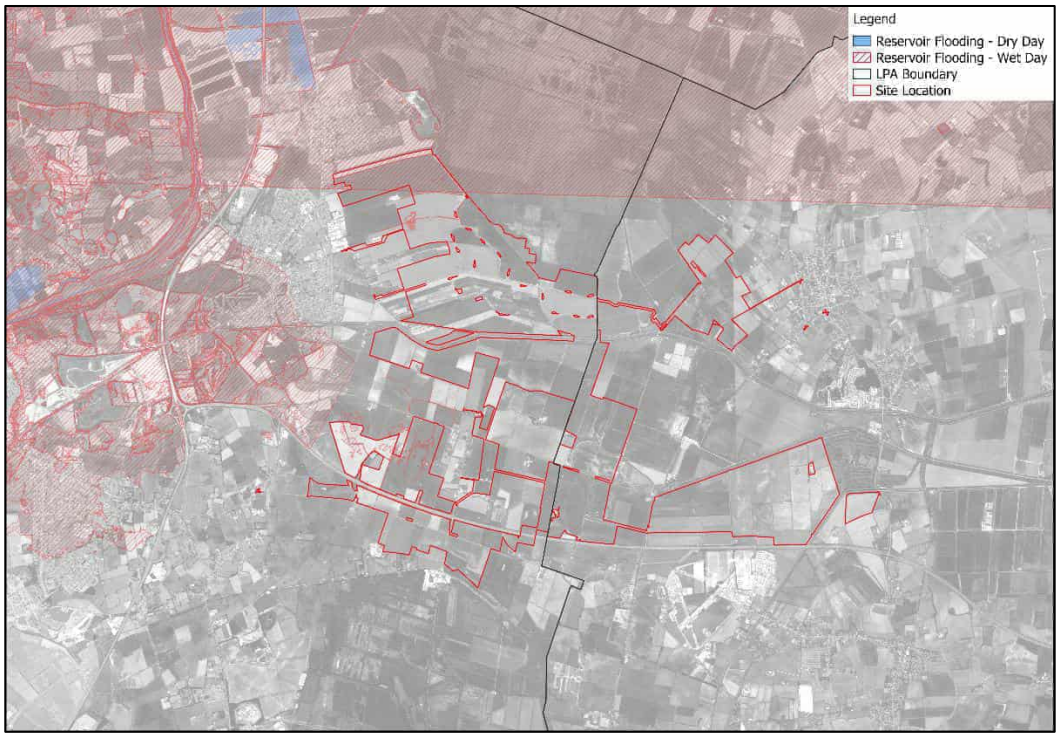
influenced by the River Ouse and River Don, which are both located a notable distance from the Order Limits.

5.90. The Doncaster Level 1 Strategic Flood Risk Assessment (2026) states "*the Canal & River Trust (CRT) have record of one canal overtopping incident which took place in 2007 on the Doncaster Navigation*". This event did not impact land within the Order Limits, with the Strategic Flood Risk Assessment (2026) interactive mapping showing no historic CRT flood events impacting the Order Limits or surrounding area.

5.91. There are no other artificial sources of flooding or canals identified in the vicinity of the Order Limits that would present a flood risk.

5.92. The Order Limits is therefore considered to be at **Low** risk of flooding from artificial sources.

Figure 5.3 – Reservoir Flooding – Wet and Dry Day



Flood Risk Summary

5.93. The risk of flooding to the Order Limits from all sources has been assessed above, with the conclusions summarised in **Table 5.2**:

Table 5.2 – Flood Risk Summary

Flood Source	Flood Risk	Mitigation/Comments
Tidal	Low	• The Order Limits is almost entirely located in Flood Zone 3. • All proposed solar PV modules and associated infrastructure will be raised above the modelled fluvially dominated 1 in 1,000 year flood level plus 100mm freeboard allowance. This extreme fluvially dominated flood event is notably worse than equivalent tidally dominated flood event and as such, the proposed mitigated measures will ensure the Scheme remains safe and operational during an extreme tidal flood event. •The Order Limits benefits from a 'reduction in risk of flooding from rivers and sea due to defences'.
Fluvial	Low	• All proposed solar PV modules and associated infrastructure will be raised above the modelled fluvially dominated 1 in 1,000 year flood level plus 100mm freeboard allowance. • The impact of the Scheme on existing floodplain storge within the Order Limits is considered to be negligible. •All IDB watercourses and Main Rivers will have a 9m buffer which is left clear of all development. Ordinary Watercourses will have a 5m buffer.
Surface Water	Low	• Large areas of the Order Limits are at Very Low risk of surface water flooding, not predicted to be impacted by 1 in 1,000 year rainfall event.

		• Areas of Order Limits also have a High to Low likelihood of surface water flooding predicted to be impacted by a 1 in 30 and 1 in 1000 year rainfall event. These at-risk areas are generally focused on isolated low spots and associated with surface water arising within the Order Limits boundary itself. • Surface water flood depths are generally not predicted to exceed 300mm. • Proposed solar PV modules and infrastructure will be raised above the RoFSW predicted 1 in 1,000 year surface water flood depths. •The proposed surface water drainage strategy will manage surface water arising within the Order Limits.
Historic	Low	• The SFRA and EA data do not include records of any historic flood events impacting the Order Limits.
Groundwater	Low	• Given the close proximity of the Scheme to a large number of watercourses, groundwater levels are not expected to rise above fluvial flood levels within the Order Limits. • Clayey soils and superficial deposits recorded within the Order Limits are expected to restrict groundwater emergence within the Order Limits. • Order Limits topography is not considered conducive to groundwater flooding.
Sewers	Low	• There are no records of sewer flooding occurring within the Order Limits. • Order Limits topography is not considered to be conducive to sewer flooding.

		• As the Order Limits is entirely greenfield, it is unlikely that there is an existing underground drainage network located within the Order Limits boundary.
Artificial	Low	• There are no recorded flood events of the Stainforth and Keadby Canal running through the Order Limits. • The Order Limits is not shown to be at risk of reservoir flooding during a 'dry day' when local rivers are not overflowing their banks. • The likelihood and risk of a catastrophic reservoir breach occurring within the Order Limits is considered to be Very Low.

Access & Egress

5.94. The Order Limits will be accessed at a range of different locations, owing to the large area of the Order Limits. The proposed access points are located within the Order Limits boundary of the Scheme and have as such, been assessed within this Flood Risk Assessment, with the conclusion that the Order Limits is at Low risk of flooding from all sources.

5.95. The Order Limits will be managed remotely and only visited occasionally for maintenance. Order Limit access and egress should therefore not be needed during an extreme flood event.

5.96. A Flood Emergency Management Plan (FEMP) has been prepared for the Order Limits and is included in **Appendix K**. The FEMP has been prepared to demonstrate how site users would remain safe in a flooding event during the operational phase of the Scheme. The plan provides details about flood alert and warning procedures, safe access and egress, and flood resilience measures to be implemented on site during operation. The FEMP has been prepared in response to the recorded tidal and fluvial flood risk on Site (detailed above within Section 5 of this FRA), as highlighted by the Site's location within Flood Zone 3 (**Appendix A (A8)).**

5.97. NPS EN-1 states the following at paragraph 5.8.34: "*The applicant should take advice from the local authority emergency planning team, emergency services and, where appropriate, from the local resilience forum when producing an evacuation plan for a manned energy project as part of the FRA. Any emergency planning documents, flood warning and evacuation procedures that are required should be identified in the FRA*". It is noted that the Scheme is not considered a "manned energy project". During operation, the Order Limits will be managed remotely and only visited occasionally for operation and maintenance needs. There are no permanent on-site staff during the operational phase of the Scheme. The FEMP has been prepared for any users on Site for operation and maintenance requirements.

5.98. At the time of writing, the local emergency planning team, emergency services or local resilience forums have not been consulted during formulation of the FEMP. In relation to NPS EN-1, as noted above, it is flagged that the Scheme is not considered a "manned energy project". On this basis, the FEMP is considered to accord with NPS EN-1.

~~5.96.~~5.99. The FEMP will be secured by Requirement 14 of the **Draft DCO [Document Reference 3.1 Revision 4]**, which provides that a CEMP must be substantially in accordance with the Outline CEMP, Requirement 15 of the **draft DCO [Document Reference 3.1 Revision 4]** which provides that an OEMP must be substantially in accordance with the Outline OEMP and Requirement 19 of the **draft DCO [Document Reference 3.1 Revision 4]** which provides that a DEMP must be substantially in accordance with the Outline DEMP.

~~5.97.~~5.100. Access roads that cross any watercourses within the Order Limits will be designed to ensure existing flows are not impacted.

6. Mitigation Measures and Surface Water Drainage

6.1. This section summarises the proposed mitigation measures for the Scheme to ensure that:

- The Scheme remains safe and operational during times of fluvial and tidal flooding.
- The Scheme is at minimal risk of surface water flooding.
- Maintenance access to watercourses within the Order Limits is not impacted by the Scheme.
- The potential impacts of the Scheme on surface water runoff have also been considered.

Fluvial and Tidal Flooding

6.2. As discussed in Section 5, the Order Limits is generally located in Flood Zone 3 and is at risk of fluvial and tidal flooding.

6.3. Fluvial/tidal flood risk mitigation measures proposed have been designed based on detailed hydraulic modelling results from the 2023 Tidal Trent model from the EA.

6.4. The worst case modelled event included in the 2023 Tidal Trent outputs is the fluvially dominated 1 in 1,000 year flood event.

6.5. All proposed solar PV modules and associated infrastructure will be raised above the modelled 1 in 1,000 year fluvially dominated flood levels plus a 100mm allowance for freeboard.

6.6. The proposed raising is detailed in **Appendix I.**

6.7. With the proposed flood risk mitigation measures in place, the Scheme has been designed to remain safe and operational during an extreme fluvial or tidal flood event. The EA have confirmed they are happy with the proposed fluvial and tidal flood risk mitigation measures (see **Appendix G**).

Surface Water Flood Risk

6.8. As discussed in Section 5, the RoFSW dataset predicts some isolated areas to be at risk of surface water flooding.

6.9. To ensure the Scheme remains safe and operational during surface water flood events over its lifetime, solar PV modules and infrastructure located within the predicted 1 in 1,000 year surface water flood extent will be raised above the associated predicted 1 in 1,000 year surface water flood depths.

6.10. In addition to keeping the Scheme safe, the proposed raising will ensure surface water can flow freely and that existing surface water flow patterns remain unaffected by the Scheme. This will in turn ensure surface water flood risk within the Order Limits and elsewhere is not impacted by the Scheme.

Watercourse Buffers

6.11. To ensure maintenance access to watercourses is not impacted by the Scheme, the following buffers have been incorporated to the Order Limit design:

a) 9m buffer from the top of bank of all Main Rivers.

b) 9m buffer from the top of bank of all IDB maintained watercourses.

c) 5m buffer from the top of bank of all Ordinary Watercourses.

6.12. All watercourse buffers will be left entirely clear of all development.

6.13. A plan of the watercourse buffers proposed is included in **Appendix A (A22).**

Impact on Surface Water Runoff

Solar PV Modules

6.14. The proposed solar PV modules are considered to have a negligible impact on existing surface water drainage patterns.

6.15. There are several potential types of solar PV modules that may be proposed. The details of these are shown in the ancillary drawing pack included in **Appendix E.** To summarise, solar PV modules may comprise:

a) Fixed solar PV modules with small feet drilled directly into the ground with no need for concrete foundations.

b) Fixed solar PV modules with a ballast slabs sat on a permeable gravel sub-base.

c) Non-ballasted tracker panels with a negligible impermeable area.

d) Tracker panels with a ballast slabs sat on a pile of stones with a geotextile membrane below.

6.16. It is also noted that all types of solar PV modules proposed will have their lowest edge raised above the ground (above the modelled 1 in 1,000 year flood level plus 100mm of freeboard as discussed above). This raising will ensure that surface water can continue to flow freely below the panels and existing surface water drainage patterns will not be affected.

6.17. Overall, the impact of the proposed solar PV modules on surface water runoff rates and flow patterns is considered to be negligible, with the land use changes discussed below providing betterment over the existing situation. No further mitigation measures are therefore considered necessary.

Infrastructure

6.18. In addition to the solar PV modules proposed discussed above, there is a range of associated infrastructure also proposed. This infrastructure includes inverter buildings, battery containers, customer switchgear containers and spares containers.

6.19. The typical details of the proposed infrastructure are included in the ancillary drawing pack in **Appendix E**. The inverter buildings, battery containers, customer switchgear containers and spares containers will each be sat on a 300mm gravel base and be raised at least 0.5m above the ground, ensuring raising above the modelled 1 in 1,000 year flood level plus 100mm freeboard.

6.20. With the permeable construction and proposed raising in place, the proposed infrastructure dispersed across the Order Limits will have a negligible impact on existing surface water runoff patterns. No further mitigation measures are therefore considered necessary.

BESS Areas

6.21. There are several Battery Energy Storage System (BESS) areas proposed within the Order Limits (see proposed Order Limit layouts and typical 100MW BESS layout in **Appendix E**). The BESS areas will increase the area of impermeable hardstanding within the Order Limits and therefore require a surface water drainage strategy to manage surface water runoff and ensure surface water runoff rates from the Order Limits do not increase as a result of the Scheme.

6.22. Indicative surface water drainage strategy details for the BESS areas are included in Section 7.

Substations

6.23. There are a range of substations proposed within the Order Limits. These include single TX 132 kV substations and the RWE on-site 400kV substation (see **Appendix E**).

6.24. The proposed substations will increase the area of impermeable hardstanding. A surface water drainage strategy has therefore been prepared to manage these areas.

6.25. Indicative surface water drainage strategy details for the substation areas are included in Section 7.

Access Tracks

6.26. The access tracks will comprise permeable materials. The access tracks will therefore comprise a permeable construction and will not require any surface water management.

Proposed Land Use Change

6.27. The proposals will result in the cessation of arable agricultural activities which will in turn, result in a variety of beneficial effects which will serve to reduce soil compaction and runoff rates from the Order Limits, as listed below:

- The Order Limits will not be left without vegetation cover during the winter as experienced with arable farming;
- The Order Limits will not be intensively trodden or over grazed; and
- The Order Limits will not be regularly traversed by heavy machinery.

6.28. If grazing is undertaken within the Order Limits following development, a grazing density should be implemented to limit compaction and maintain sufficient grass cover. Permanent grass cover will be maintained to ensure the risk of erosion below solar PV modules is minimised. The landscape proposals are detailed in the **ES Chapter 6 Landscape and Visual [Document Reference 6.2.6 Revision 2]** and **ES Figure 6.4 Landscape and Visual Mitigation Strategy [REP1-027~~Document Reference 6.4.6.4 Revision 2~~]** but land below the solar PV modules is noted to generally comprise species rich grassland.

7. Outline Surface Water Drainage Strategy Details

7.1. As detailed above in Section 6, the proposed BESS and substation areas will increase the area of impermeable hardstanding within the Order Limits. As such, a surface water drainage strategy has been prepared to manage surface water runoff from the proposed impermeable catchments associated with the development.

7.2. It should be noted that at this stage, whilst typical details for the 100MW BESS areas, Single TX 132 kV Substations, and RWE on-site 400kW Substation have been provided, their exact orientation within the wider Order Limit layout is still to be confirmed. Therefore, a high-level indicative drainage strategy for each of the pieces of development infrastructure mentioned above has been prepared, though several assumptions have had to be made and details such as the exact outfall locations are to be confirmed at the next stage of design. The assumptions made in order to inform the indicative drainage strategy are discussed in the subsequent sections of this report.

Surface Water Management

7.3. The SuDS hierarchy demands that surface water run off should be disposed of as high up the following list as practically possible:

- Infiltration (discharge to ground), or then;
- To a surface water body, or then;
- To a surface water sewer, highway drain or another drainage system, or then;
- To a combined sewer.

7.4. In order to determine the most suitable method of surface water disposal from the Order Limits the options listed above have been considered in turn.

Infiltration

7.5. Based on the desktop review referenced in Section 2, ground conditions are not generally considered to be conducive to an infiltration led SuDS strategy.

7.6. Notably, based on data from the LandIS Soilscapes website, the soil types underlying the Order Limits are described as; 'slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils' and 'loamy and clayey soils of coastal flats with naturally high groundwater'.

7.7. BGS data also suggests that part of the Order Limits is underlain by impermeable superficial deposits and bedrock.

7.8. Additionally, there are a large number of watercourses within the Order Limits (refer to Section 2), which suggests that the ground conditions in the area suffer from poor natural drainage.

7.9. As such, infiltration as the primary means of surface water disposal has been discounted at this stage.

Surface Water Body

7.10. The next option in the SuDS hierarchy is to discharge surface water runoff into an existing surface water body (watercourse).

7.11. As mentioned above, the Order Limits is served with numerous existing watercourses/drains which could provide a suitable outfall location for the proposed surface water drainage strategy.

7.12. It should be noted that several of the watercourses within the Order Limits fall within IDB management (Isle of Axholme and North Nottinghamshire Water Level Management Board and Doncaster East Internal Drainage Board). The approach to IDB bylaw consents is detailed in **Chapter 10 ~~(~~Water Resources~~)~~ [Document Reference 6.2.10 Revision 2] of the ES.**

Surface Water or Combined Sewer

7.13. The next option in the SuDS hierarchy is to discharge surface water runoff into an existing surface water sewer, followed by discharge to a combined sewer network. Based on the rural nature of the Order Limits it is understood that the Order Limits vicinity is not served by public sewerage assets. Therefore, this means of surface water disposal is not deemed to be feasible and a more preferable discharge location has been identified to be feasible in the SuDS hierarchy (surface water body).

SuDS Selection Process

7.14. Various methods of SuDS (Sustainable Drainage Systems) should be considered for use as different methods have constraints which may not be suitable for this development.

7.15. An assessment of the suitability of different SuDS techniques is summarised in **Table 7.1** below. Guidance from 'The SuDS manual' C753 has been used to form the basis of this assessment.

Table 7.1 – Assessment of SuDS Suitability

SuDS Technique	Potentially Suitable for Development	Justification
Rainwater Harvesting	No	Not considered suitable for solar and BESS development.
Green Roofs	No	Not considered suitable for solar and BESS development.
Infiltration Systems (Soakaways, etc.)	No	Infiltration rates on site are generally expected to be poor. Infiltration-based SuDS could be proposed for additional betterment only.
Filter Drains	Yes	Could be used to help convey surface water runoff on site.
Swales	No	Could be used to help convey surface water runoff on site. However, the large number of watercourses are likely to intercept overland flows as per the existing scenario. As such, swales are not required to convey runoff.
Bioretention Systems	No	Not considered suitable.
Trees	Yes	Could be considered but would not significantly reduce the storage requirements.
Geocellular Storage	Yes	Considered to be suitable for providing surface water attenuation. Where possible, 'open' storage features should be prioritised and could be reconsidered at the next stage of design following confirmation of

SuDS Technique	Potentially Suitable for Development	Justification
		the exact orientation of the development infrastructure within the wider layout.
Detention Basins & Ponds	Yes	Could be used to provide surface water attenuation. However, at this stage it is unconfirmed the exact orientation of the development infrastructure within the wider layout and therefore the area which may be available for the provision of detentions basins/ponds is unclear. Use of these features could be reconsidered at the next stage of design.
Wetlands	No	Not considered suitable due to land take.
Permeable Subbase Storage	Yes	The permeable gravel subbase on which each of the 100MW BESS, Single TX 132 kV Substation, and RWE on-site 400kV Substation area are to be sited could be used to provide storage and treatment of surface water. Internal access tracks serving the site will comprise permeable materials.

Surface Water Drainage Strategy – 100MW BESS

7.16. The proposed surface water drainage strategy drawings are included in **Appendix L**, with the associated Causeway Flow drainage calculations included in **Appendix M**.

7.17. As mentioned above, the drainage strategy has been prepared based on the provided typical detail for the BESS area and as such is a high-level indicative plan at this stage. Following confirmation of the infrastructure orientation within the wider Order Limit layout this strategy should be revised.

7.18. Surface water runoff from the BESS area is to be collected via a series of both perforated and solid-walled pipes. Attenuation will be provided in the BESS platform permeable gravel subbase and below ground geocellular storage. The proposed attenuation has been designed to manage surface water runoff from the 1.844ha catchment area (shown in the standard detail drawing) for storm events up to and including the 1 in 100-year event +40% allowance for climate change.

7.19. The drainage strategy is proposed to outfall to the numerous watercourses located within the Order Limits. The exact invert level and location of the outfalls are to be confirmed at the next stage of design. Maximum outflow rates to the watercourses are to be restricted to the equivalent 1 in 1-year greenfield runoff rate, as per LLFA guidance.

7.20. The calculated 1 in 1-year greenfield rate for the Order Limits is 1.9l/s/ha, therefore based on the typical detail provided for the 100MW BESS and a contributing catchment of 1.844ha, the associated runoff rate is 3.5l/s. A Hydrobrake® manhole is proposed to restrict ultimate discharge rates.

7.21. Due to the risk of fire water contamination, the gravel subbase is proposed to be lined with an impermeable liner.

7.22. This strategy is to be refined at the next stage of design and confirmation of the infrastructure within the wider Order Limit layout.

Fire Suppression Water

7.23. In the event of a fire a penstock will be shut off in the downstream manhole to allow any water used to fight the fire to be contained within the below ground network ready to be pumped off once the fire is out.

7.24. There is a proposed storage tank within the Order Limits, above ground, that will hold permanent water to fight the fire. The tank will be approximately 240m^3 satisfying the fire departments requirements of 1900L/min for 2 hours (228m^3).

7.25. Once the penstock is engaged water will back up into the network and can be contained and stored within the attenuation crates shown which have a storage volume equal to 228m^3.

7.26. The details of the below ground storage proposed are subject to detailed design. During detailed design, it will be ensured that the design is suitable to manage potentially contaminated fire water.

7.27. There are various below ground storage options suitable for the containment of potentially contaminated fire water and the associated potential heat and contaminants, including Polypropylene. Concrete or stainless steel below ground storage could also be utilised, subject to detailed design.

7.28. The impermeable BESS liner is also subject to detailed design and will be designed to account for possible BESS fire. High Density Polyethylene and Linear Low Density Polyethylene are two materials that may be considered during detailed design.

7.29. It is noted that the provision of fire water containment within the BESS Outline Surface Water Drainage Strategy is considered proportionate for this Scheme as there are central BESS compounds proposed within the Order Limits.

Surface Water Drainage Strategy – 132 kV Substation and RWE on-site 400kV Substation

7.30. The proposed surface water drainage strategy drawings are included in **Appendix L**, with the associated Causeway Flow drainage calculations included in **Appendix M**.

7.31. As mentioned above, the drainage strategy has been prepared based on the provided typical detail for the substation areas and as such is a high-level indicative plan at this stage. Following confirmation of the infrastructure orientation within the wider Order Limits layout this strategy should be revised.

7.32. Surface water runoff from the substations is to be collected via a series of both perforated and solid-walled pipes. Attenuation will be provided in the substation platform permeable gravel subbase and below ground geocellular storage. The proposed attenuation has been designed to manage surface water runoff from the associated catchment areas (shown in the standard detail drawings) for storm events up to and including the 1 in 100-year event +40% allowance for climate change.

7.33. The drainage strategy is proposed to outfall to the numerous watercourses located within the Order Limits. The exact invert level and location of the outfalls are TBC at the next stage of design. Maximum outflow rates to the watercourses are to be restricted to the equivalent 1 in 1-year greenfield runoff rate, as per LLFA guidance.

7.34. The calculated 1 in 1-year greenfield rate for the Order Limits is 1.9l/s/ha. A Hydrobrake® manhole is proposed to restrict ultimate discharge rates.

7.35. This strategy is to be refined at the next stage of design and confirmation of the infrastructure within the wider Order Limits layout.

Surface Water Drainage Strategy – Inverter Containers

7.36. The proposed inverter containers are considered to have a negligible impact on existing surface water runoff rates and associated flood risk; a surface water drainage strategy has been prepared to provide additional betterment.

7.37. To manage runoff from the inverter containers, it is proposed to wrap a 300mm deep gravel trench around the infrastructure to collect any surface water runoff and allow it to discharge to ground.

Modelling Assumptions

7.38. As mentioned above, the drainage strategy has been prepared based on the provided typical details for the infrastructure within the Order Limits and as such is a high-level indicative plan at this stage. As such, several assumptions have had to be made and details such as the exact outfall locations are to be confirmed at the next stage of design. These include;

- It is assumed that the proposed outfalls are able to be provided via a gravity connection to the associated watercourse;
- The BESS and substation platform levels are to be generally flat across the compound area;
- The proposed gravel subbase areas are to be lain with a generally flat invert level with a nominal fall toward the proposed collector pipes, and;
- Suitable cover can be provided above each of the proposed below ground features.

7.39. The above assumptions should be considered and/or confirmed at the next stage of design.

Maintenance

7.40. To ensure the ongoing successful operation of any SuDS proposed within the Order Limits, an Operation and Maintenance Manual should be prepared and adhered to. In the absence of a confirmed surface water drainage strategy for the Order Limits, a high level and broad-range Operation and Maintenance Manual has been prepared and is included in **Appendix N.** This manual will need updating once the surface water drainage strategy has been confirmed and when it has been confirmed who will be responsible for the maintenance within the Order Limits.

Designing for Exceedance

7.41. Periods of exceedance occur when the rate of surface water runoff exceeds the drainage system capacity. Conveyance beneath ground cannot, generally, be economically or sustainably constructed to the scale required for the most extreme rainfall events. This may result, on occasion, in the surface water runoff exceeding the capacity of the drainage network, with excess water (exceedance flow) being conveyed above ground.

7.42. For situations where extreme rainfall intensity exceeds inlet capacities, or for extreme storm events exceeding the design flood event considered for drainage design, surface water would flow toward the extensive watercourse/drain network within the Order Limits, based on the topography of the Order Limits.

Water Quality

7.43. In order to protect the downstream receiving water body, a key element of SuDS is that they have the potential to improve the quality of surface water discharged from a site.

7.44. The SuDS Manual (CIRIA C753) states that the design of surface water drainage should consider minimising contaminants in surface water runoff discharged from the Order Limits. The level of treatment required depends on the proposed land use, according to the pollution hazard indices.

7.45. Based on the nature of the Scheme, surface water runoff pollution indices are considered to be low/very low. Treatment of surface water from the BESS and Substation areas is to be provided by the gravel subbase through which surface water is to percolate. Downstream defenders are proposed where necessary in order to treat surface water generated from the impermeable access roadways prior to being attenuated within the below ground network.

7.46. As mentioned above, in the event of a fire – a separate procedure is in place in order to prevent contaminated runoff from entering the receiving waterbodies.

8. Summary

8.1. The Order Limits is approximately 1,831ha in area and is entirely greenfield. The Order Limits is proposed for a solar farm development with battery energy storage and associated infrastructure.

8.2. The Order Limits is located almost entirely in Flood Zone 3, at risk of fluvial and tidal flooding. To ensure the Order Limits remains safe and operational during an extreme 1 in 1,000 year tidally and fluvially dominated flood event, all proposed solar PV modules and infrastructure will be raised above the 2023 Tidal Trent modelled 1 in 1,000 year fluvially dominated flood levels plus 100mm freeboard allowance. This event shows greater flooding that the tidally dominated 1 in 1,000 year flood event.

8.3. A critical flood level of 4.1mAOD has been provided by the Environment Agency but it is not considered feasible to design mitigation measures against this extreme flood level. In addition, no detailed model data has been provided to back up this level. Should a 4.1mAOD flood event occur, the impacts would extend well beyond the Order Limits extent. The Scheme would be "switched-off" should such an event occur.

8.4. The Order Limits is not considered to be at significant risk of flooding from any other source.

8.5. The drainage strategy must demonstrate the use of SuDS within the design and should be in line with the requirements as set out within with the relevant NPS, notably NPS EN-1 and EN-3.

8.6. The NPS EN-1 ensures that flood risk from all sources are assessed and that proposed developments located in areas of flood risk should be designed and constructed to remain operational in times of flood. In order to ensure the Scheme remains safe during operation and also accounts for climate change.

8.7. Mitigation measures such as ensuring all proposed solar PV modules and all associated infrastructure are raised above the fluvially dominated 1 in 1,000 year flood levels defined by the 2023 Tidal Trent flood model outputs plus an allowance for 100mm of freeboard. This event has been identified as the worst case of the modelled flood events from the 2023 Tidal Trent model.

8.8. The Sequential Test is required for the proposals and is included elsewhere in the planning submission documents. In accordance with

NPS EN-1, if, following application of the Sequential Test, it is not possible, for the project to be located in areas of lower flood risk the Exception Test can be applied, as required by Table 2 of the Planning Practice Guidance.

8.9. An outline surface water drainage strategy has been prepared to accompany the proposals.

8.10. With the proposed mitigation measures and drainage strategy in place, the Scheme would be safe for its lifetime without increasing the risk of flooding elsewhere.

8.11. The proposal is considered to accord with the requirements of the relevant National Policy Statements (NPSs) and National Planning Policy Framework (NPPF) with residual risk to the Order Limits fully mitigated, and as such considered low risk. The Scheme should not be precluded on flood risk grounds.

9. References

- **[Ref. 10-1]:** The National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (2024). Available at: https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3
- **[Ref. 10-2]:** The National Policy Statement for Electricity Networks Infrastructure (NPS EN-5) (2023). Available at: https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5
- **[Ref. 10-3]:** National Planning Policy Framework (NPPF): Ministry of Housing, Communities and Local Government. (2024). Chapter 14: "Meeting the challenge of climate change, flooding and coastal change". Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2
- **[Ref. 10-4]:** City of Doncaster Council Level 1 Strategic Flood Risk Assessment (2026). Accessed at: https://www.doncaster.gov.uk/Documents/DocumentView/Stream/Media/Default/Planning/Documents/Natural%20Environment/Flooding/SFRA1%20(2026)/Doncaster%20Level%201%20SFRA%20Main%20Report.pdf
- **[Ref. 10-5]:** North and North East Lincolnshire Strategic Flood Risk Assessment (SFRA) (2022). Accessed at: https://www.nelincs.gov.uk/assets/uploads/2022/09/202206-SFRA.pdf
- **[Ref. 10-6]:** The Planning Policy Guidance (PPG) (2022): Department for Communities and Local Government. (2022). National Planning Practice Guidance: Flood risk and coastal change. Available at: https://www.gov.uk/government/collections/planning-practice-guidance

Appendix A – A3 Flood Risk Drawings

A1 – Flood Zone 3b – all EA Data.

Legend

- Site Location
- LPA Boundary
- 2023 Tidal Trent 1 in 30 year Flood Extent
- 2018 River Torne 1 in 30 year Flood Extent
- 2025 River Torne 1 in 30 year Flood Extent

Data: "Torne_WSP_2025", "Torne_AECOM_2018", "Tidal_Trent_Jacobs_2023"

Drawing Name:
P21-3484-IN-QGIS-005-v3-Flood Zone 3b (Extent of Functional Flood Plain)

A2 - Torne 2018 vs Torne 2025 1 in 1,000 year

Legend

- Site Location
- LPA Boundary
- 2025 River Torne 1 in 1,000 year Flood Event
- 2018 River Torne 1 in 1,000 year Flood Event

Data: "Torne_WSP_2025", "Torne_Aecom_2018"

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: 2025 River Torne vs 2018 River Torne 1 in 1,000 year Flood Extent

A3 – Site Location Plan

Thorne Moors

Thorne

South Humberside Main Line

Crowle

M180

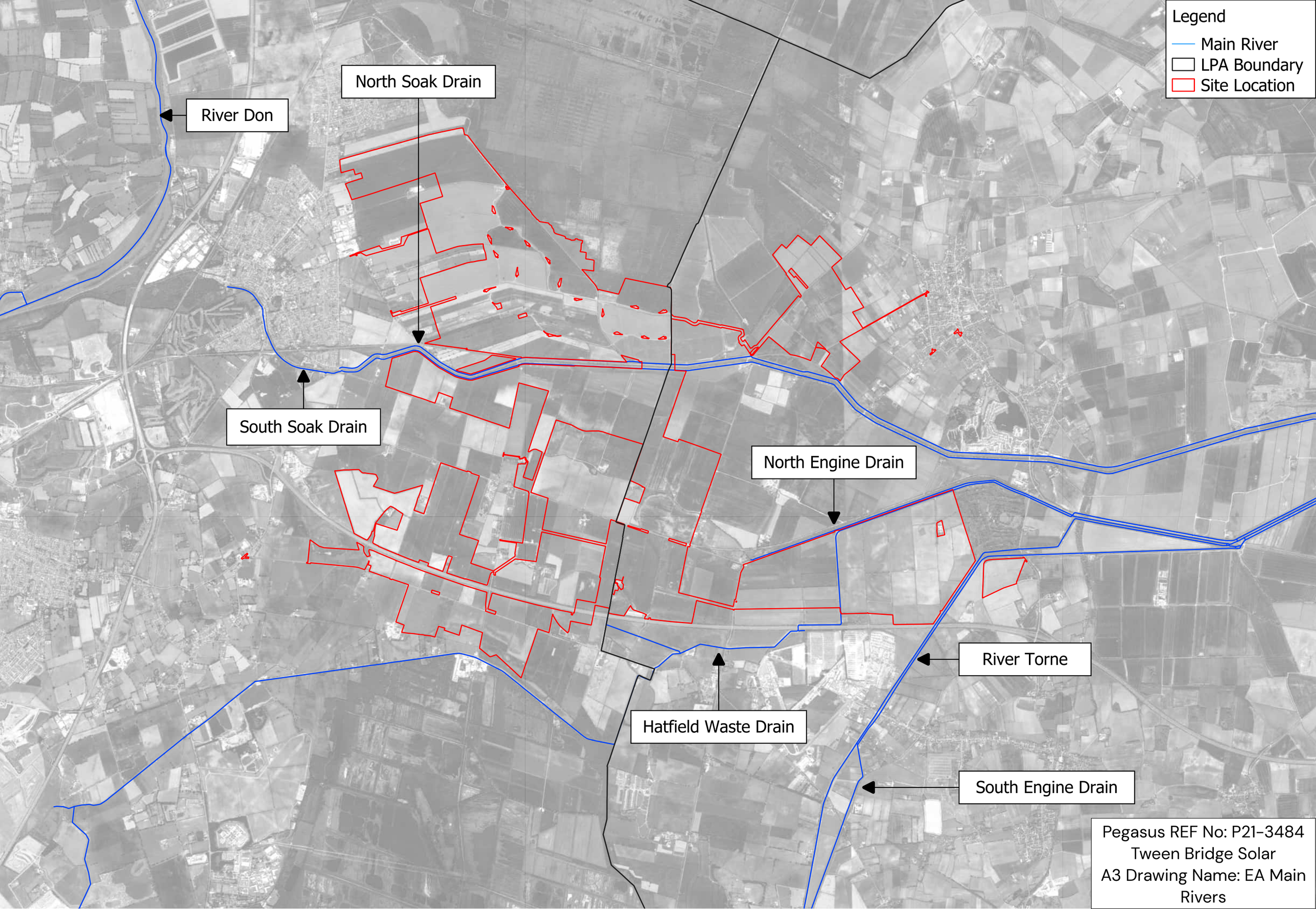
Legend

LPA Boundary

Site Location

Pegasus REF No: P21-3484
Tween Bridge Solar
A3 Drawing Name: Site Location Plan

A4 – EA Main Rivers


Legend
Main River
LPA Boundary
Site Location
North Soak Drain
River Don
South Soak Drain
North Engine Drain
River Torne
Hatfield Waste Drain
South Engine Drain
Pegasus REF No: P21-3484
Tween Bridge Solar
A3 Drawing Name: EA Main Rivers

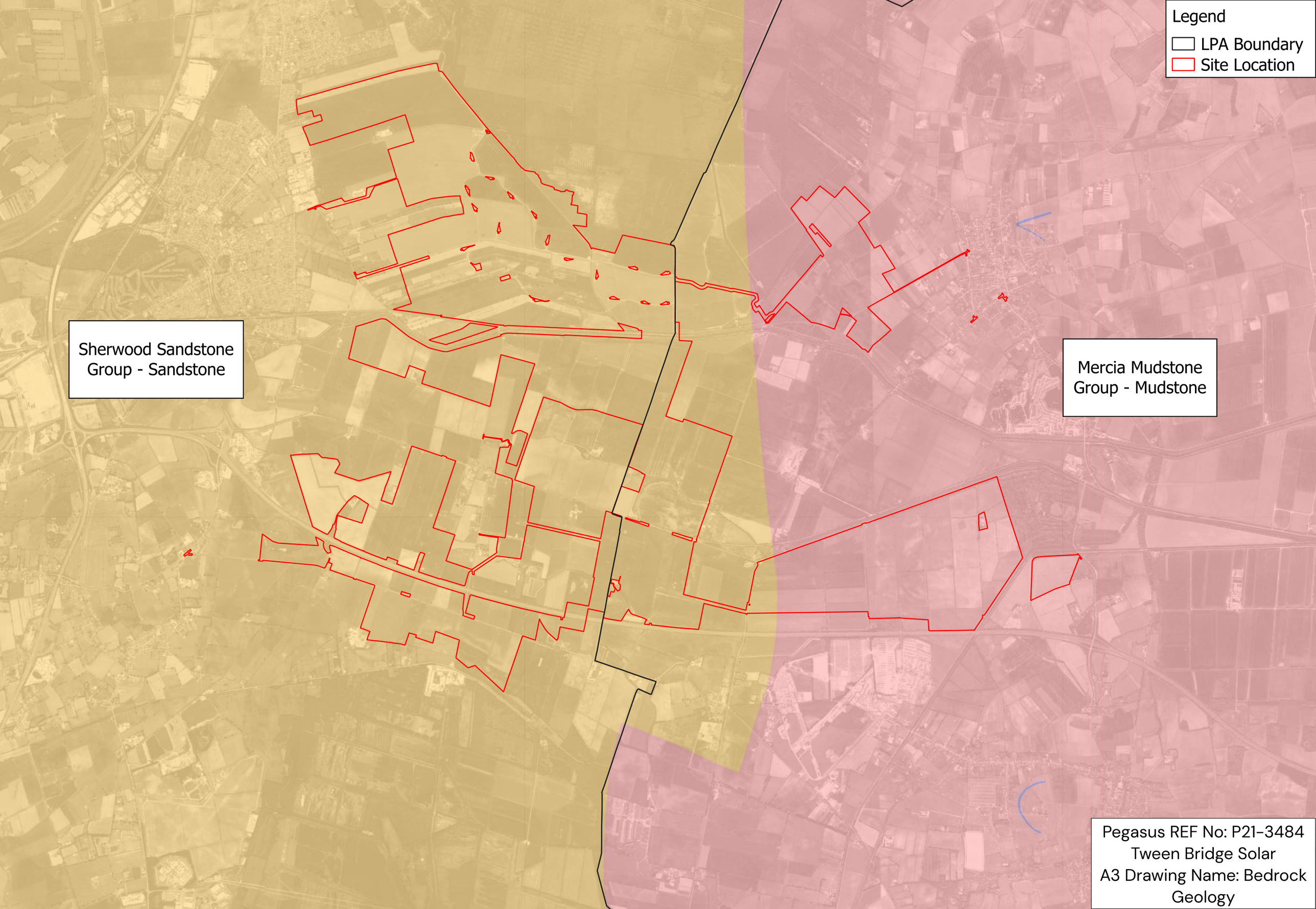
A5 – IDB Maintained Watercourses and Ordinary Watercourses

Legend

- IDB Maintained Watercourse
- Ordinary Watercourse
- LPA Boundary
- Site Location

Pegasus REF No: P21-3484
Tween Bridge Solar
A3 Drawing Name: IDB Maintained Watercourses and Ordinary Watercourses

A6 – Bedrock Geology



Pegasus REF No: P21-3484
Tween Bridge Solar
A3 Drawing Name: Bedrock Geology

A7 – Hydrogeology Aquifer Classification

Legend

LPA Boundary

Site Location

Highly Productive Aquifer

Low Productivity Aquifer

Pegasus REF No: P21-3484
Tween Bridge Solar
A3 Drawing Name:
Hydrogeology Aquifer Classification

A8 – Flood Map for Planning

Legend

- Flood Zone 2
- Flood Zone 3
- Flood Defence
- LPA Boundary
- Site Location

Pegasus REF No: P21-3484
Tween Bridge Solar
A3 Drawing Name: Flood Map for Planning

A9 – Risk of Flooding from Rivers and Sea Extents

Legend

- High Likelihood
- Medium Likelihood
- Low Likelihood
- Very Low Likelihood
- LPA Boundary
- Site Location

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: Risk of Flooding from Rivers and Sea Extents

A10 – 2023 Tidal Trent Model. Fluvially Dominated vs Tidally Dominated 1 in 1,000 year Extent

Legend

- Site Location
- LPA Boundary
- Tidally Dominated 1 in 1,000 year Extent
- Fluvially Dominated 1 in 1,000 year Extent

Data: "TTRENT_2022_DEF_F0002_T1000_002_flood_extent" & TTRENT_2022_DEF_F1000_T0002_002_flood_extent

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: 2023 Tidal Trent Model. Fluvially Dominated vs Tidally Dominated 1 in 1,000 year Extent

A11 – Extent of Functional Flood Plain (River Torne, 2025)

Legend

- Site Location
- LPA Boundary
- 2025 River Torne 1 in 30 year Flood Extent

Data: "Torne_WSP_2025"

Drawing Name:
P21-3484-IN-QGIS-005-v3-Flood Zone 3b
(Extent of Functional Flood Plain)

Legend

- Site Location
- LPA Boundary
- 2025 River Torne 1 in 30 year Flood Extent

Solar Panels, Inverters, Spares Container and western extent of BESS is located within this FZ3b Extent

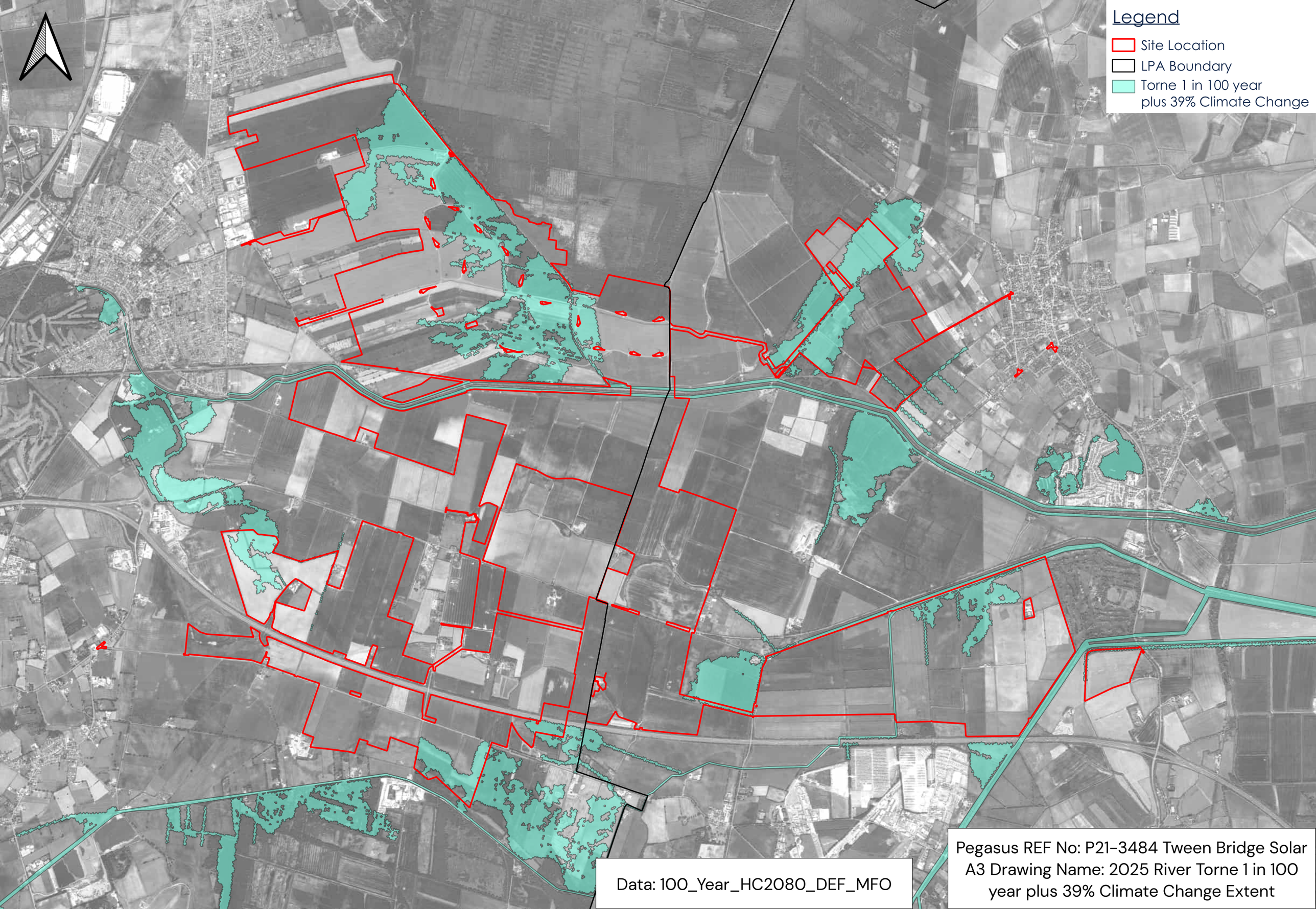
Solar Panels are located within this FZ3b Extent

Solar Panels and Inverters located within this FZ3b Extent

Data: "Torne_WSP_2025"

Drawing Name:
P21-3484-IN-QGIS-005-v3-Flood Zone 3b (Extent of Functional Flood Plain)

A12 – 2025 River Torne 1 in 100 year plus 39% climate change Flood Extent


Legend
Site Location
LPA Boundary
Torne 1 in 100 year plus 39% Climate Change
Data: 100_Year_HC2080_DEF_MFO
Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: 2025 River Torne 1 in 100 year plus 39% Climate Change Extent

A13 – Flood Zone 3b (River Torne, 2025) and proposed raised access tracks

Legend

- Site Location
- LPA Boundary
- 2025 River Torne 1 in 30 year Flood Extent
- J343_1000_11B-Fixed_PVCase Roads
- Above-Ground Track Locations

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: 2025 River Torne 1 in 30 year Extent

A14 – 1 in 100 year plus 39% Climate Change (River Torne Model, 2025) and proposed raised access tracks

Legend

- Site Location
- LPA Boundary
- Torne 1 in 100 year plus 39% Climate Change
- J343_1000_11B-Fixed_PVCase Roads
- Above-Ground Track Locations

Data: 100_Year_HC2080_DEF_MFO

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: 2025 River Torne 1 in 100 year plus 39% Climate Change Extent

Legend

- Site Location
- LPA Boundary
- Torne 1 in 100 year plus 39% Climate Change
- J343_1000_11B-Fixed_PVCase Roads
- Above-Ground Track Locations
- Ordinary Watercourse
- IDB Watercourse
- Main River Map

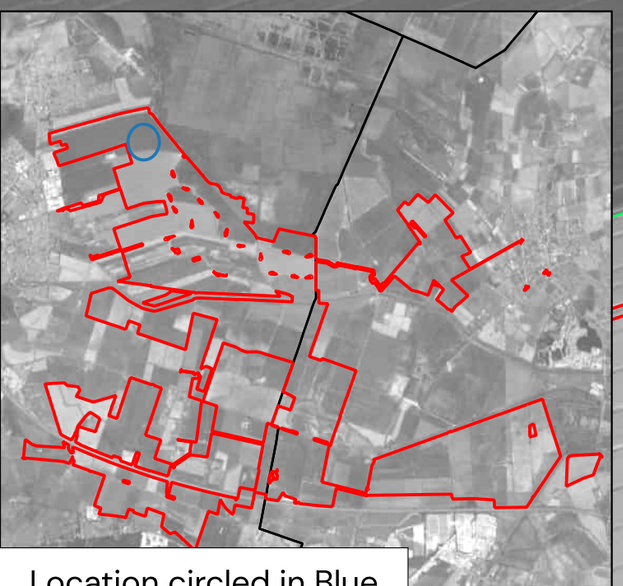
Ground levels rise up to this point from the flood extent to approximately 1.5mAOD

Approximately 150 m away from RLB

Land at approximately 0.3mAOD

Land to the east of the RLB is approximately 2.5mAOD. Therefore, any flooding will remain within the RLB if capacity of the watercourse exceeds.

An Ordinary Watercourse runs in a easterly direction into an IDB Watercourse.



Location circled in Blue

Data: 100_Year_HC2080_DEF_MFO

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: 2025 River Torne 1 in 100 year plus 39% Climate Change Extent

The road is located at an elevation of approximately 3.7mAOD and will remain flood free in the 1 in 100 year + 39% Climate Change flood event.

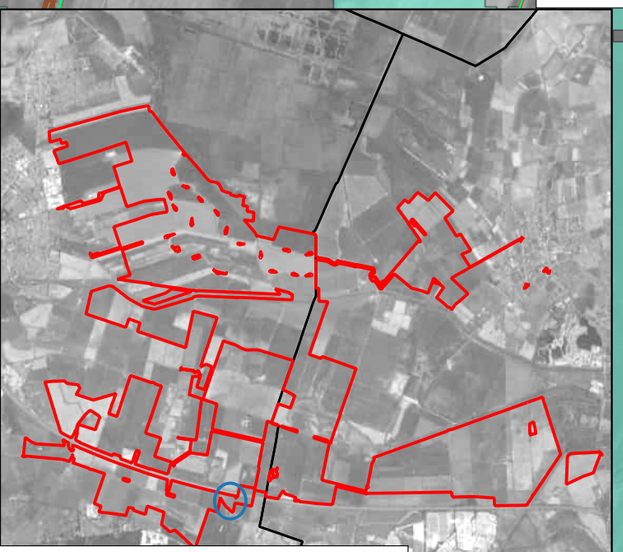
Levels around the access track are approximately 1.2mAOD

Ground levels rise towards these buildings to a level of approximately 2mAOD

An IDB Watercourse runs along the northern boundary and flows in an easterly direction into a Main River. Flood events to remain within the RLB if channel capacity exceeded.

Legend

- Site Location
- LPA Boundary
- Torne 1 in 100 year plus 39% Climate Change
- J343_1000_11B-Fixed_PVCase Roads
- Above-Ground Track Locations
- Ordinary Watercourse
- IDB Watercourse
- Main River Map



Location circled in Blue

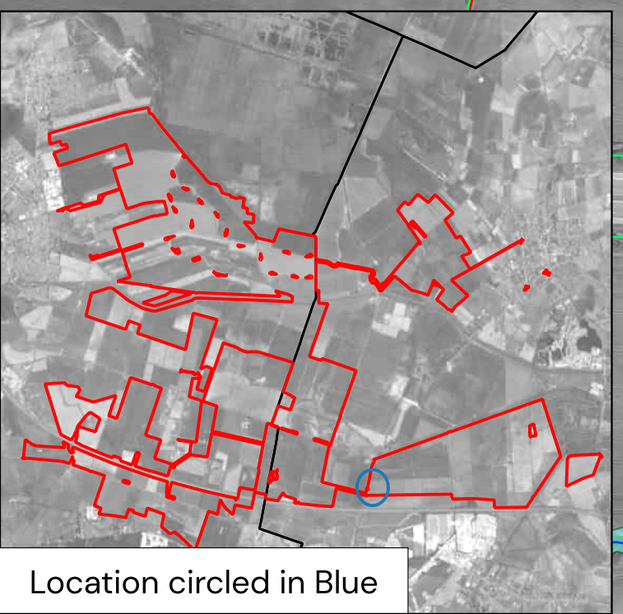
Data: 100_Year_HC2080_DEF_MFO

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: 2025 River Torne 1 in 100 year plus 39% Climate Change Extent

Legend

- Site Location
- LPA Boundary
- Torne 1 in 100 year plus 39% Climate Change
- J343_1000_11B-Fixed_PVCase Roads
- Above-Ground Track Locations
- Ordinary Watercourse
- IDB Watercourse
- Main River Map

Raised track not within the flood extent



Location circled in Blue

Data: 100_Year_HC2080_DEF_MFO

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: 2025 River Torne 1 in 100 year plus 39% Climate Change Extent

A15 – 2025 River Torne 1 in 1,000 year Flood Extent vs 2023 River Trent 1 in 1,000 year Flood Extent

Legend

- Site Location
- LPA Boundary
- 2025 River Torne 1 in 1,000 year Flood Event
- 2023 Tidal Trent Fluvially Dominated 1 in 1,000 year Flood Extent

Data: "TTRENT_2022_DEF_F1000_T0002_002_flood_extent" & "Torne_WSP_2025"

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: 2025 River Torne 1 in 1,000 year vs 2023 Tidal Trent Fluvially Dominated 1 in 1,000 year Flood Extent

A16 – LiDAR Defined Land Above & Below 4.1mAOD

Legend

- Site Location
- LPA Boundary
- LiDAR Defined Ground Levels
- Less Than 4.1mAOD
- Over 4.1mAOD

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: LiDAR Defined Land Above & Below 4.1mAOD

A17 – Land raising required for flood level of 4.1mAOD

Legend

- Site Location
- LPA Boundary

Raising required (m) to level of 4.1mAOD

- <= 1.0000
- 1.0000 - 2.0000
- 2.0000 - 3.0000
- 3.0000 - 4.0000
- 4.0000 - 5.0000
- > 5.0000

0 1 2 km

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: LiDAR Defined Land Raising required for a flood level of 4.1mAOD

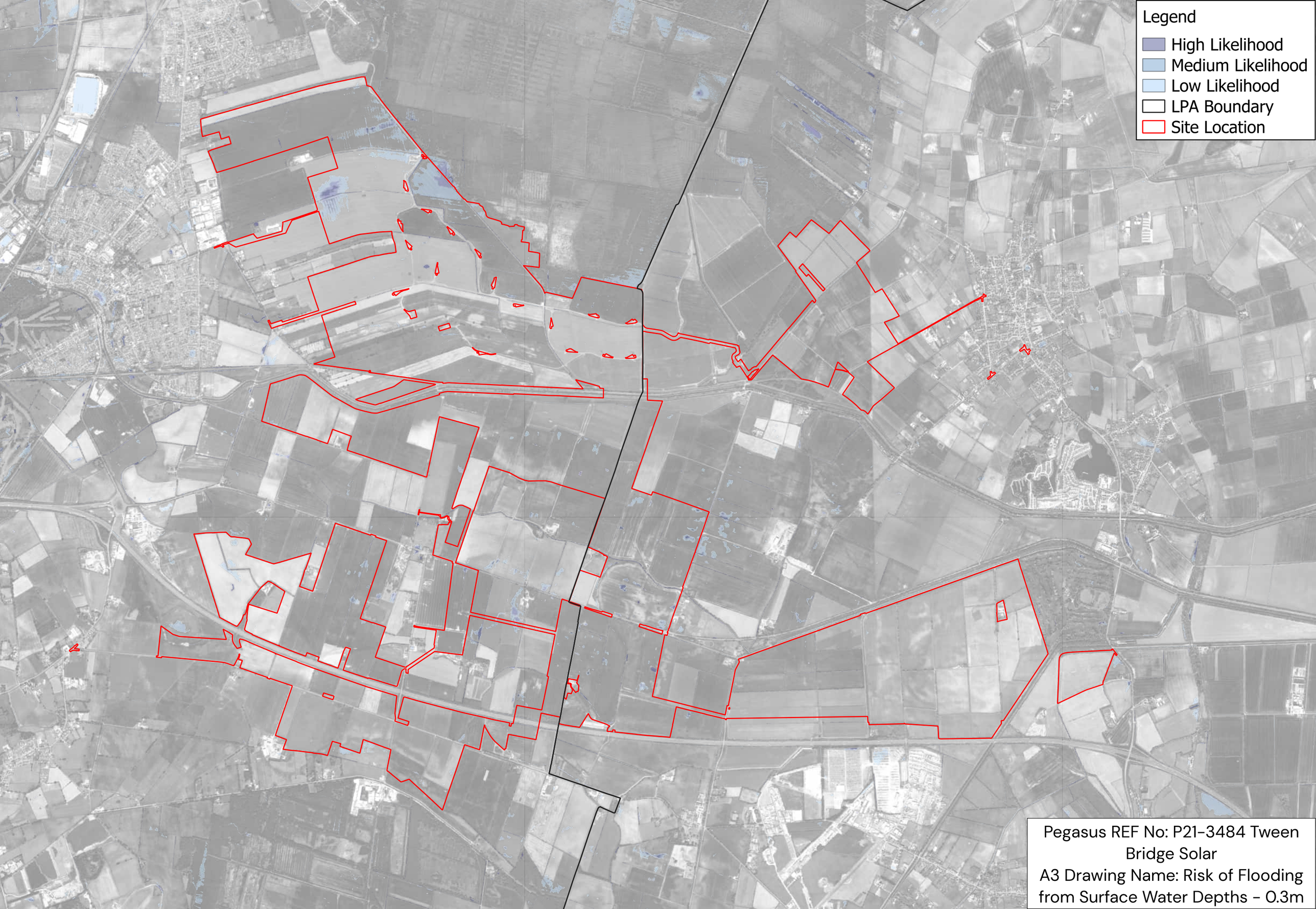
A18 – Risk of Flooding from Surface Water Extents

Legend

- High Likelihood
- Medium Likelihood
- Low Likelihood
- LPA Boundary
- Site Location

Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: Risk of Flooding from Surface Water Extents

A19 – Risk of Flooding from Surface Water Depths – 0.3m



Pegasus REF No: P21-3484 Tween Bridge Solar
A3 Drawing Name: Risk of Flooding from Surface Water Depths - 0.3m

A20 – EA Historic Flood Outlines

Recorded Flood Event in June 2007 (unknown cause)

Surface Water Flooding in June 2007 (unknown cause)

Surface Water Flooding in June 2007 (unknown cause)

Flood Incident in February 2020 (Storm Dennis and Storm Ciara)

Numerous records including:
- Main River Flooding November 2000 (unknown cause)
- Flood Event June 2007 (unknown cause)
- Main River Flooding November 2019 (channel capacity exceeded)
- Main River Flooding Febraury 2020 (Storm Dennis and Storm Ciara)
- Flood Incident January 2021 (Storm Christoph)

0 1 2 km

Legend
- Historic Flood Map
- LPA Boundary
- Site Location

Pegasus REF No: P21-3484
Tween Bridge Solar
A3 Drawing Name: EA Historic Flood Outlines

A21 – Risk of Flooding from Reservoirs

Legend

- Reservoir Flooding - Dry Day
- Reservoir Flooding - Wet Day
- Reservoir Locations
- LPA Boundary
- Site Location

>55km distance from site

11 Reservoir Locations Posing Risk to the Site

Pegasus REF No: P21-3484
Tween Bridge Solar
A3 Drawing Name: Risk of Flooding from Reservoirs

A22 – Watercourse Easements

Legend

- Main River 9m Easement
- IDB Watercourse 9m Easement
- Ordinary Watercourse 5m Easement
- LPA Boundary
- Site Location

Pegasus REF No: P21-3484
Tween Bridge Solar
A3 Drawing Name:
Watercourse Easements

Appendix B – Environment Agency Relevant Representation Comments (December 2025)

The Examining Authority
The Planning Inspectorate
c/o QUADIENT
69 Buckingham Avenue
Slough
SL1 4PN

Our ref: AN/2025/137134/01-L01
Your ref: EN010148

Date: 24 December 2025

Dear Members of the Examining Authority

Application by RWE Renewables UK Solar and Storage Limited for an order granting development consent for the Tween Bridge Solar Farm project

1.0 The Environment Agency's Role

1.1 The Environment Agency is an executive non-departmental public body, established under the Environment Act 1995.

1.2 We were established to bring together responsibilities for protecting and improving the environment and to contribute to sustainable development. We take an integrated approach in which we consider all elements of the environment when we plan and carry out our work. This allows us to advise on the best environmental options and solutions, taking into account the different impacts on water, land, air, resources and energy.

1.3 We help prevent hundreds of millions of pounds worth of damage from flooding. Our work helps to support a greener economy by protecting and improving the natural environment for beneficial uses, working with businesses to reduce waste and save money, and helping to ensure that the UK economy is ready to cope with climate change. We will facilitate, as appropriate, the development of low carbon sources of energy ensuring people and the environment are properly protected.

1.4 We have three main roles:

- We are an **environmental regulator** – we take a risk-based approach and target our effort to maintain and improve environmental standards and to minimise unnecessary burdens on businesses. We issue a range of permits and consents.

- We are an **environmental operator** – we are a national organisation that operates locally. We work with people and communities across England to protect and improve the environment in an integrated way. We provide a vital incident response capability.

- We are an **environmental adviser** – we compile and assess the best available evidence and use this to report on the state of the environment. We use our own monitoring information and that of others to inform this activity. We provide technical information and advice to national and local governments to support their roles in policy and decision-making.

1.5 The Environment Agency takes action to conserve and secure the proper use of water resources, preserve and improve the quality of rivers, estuaries and coastal waters and groundwaters through pollution control powers and regulating discharge permits.

1.6 We have regulatory powers in respect of waste management and remediation of contaminated land designated as special sites. We also encourage the remediation of land contamination through the planning process.

1.7 The Environment Agency is the principal flood risk management operating authority. It has the power (but not the legal obligation) to manage flood risk from designated main rivers and the sea. The Environment Agency is also responsible for increasing public awareness of flood risk, flood forecasting and warning and has a general supervisory duty for flood risk management. We also have a strategic overview role for all flood and coastal erosion risk management.

2.0 Scope of these Representations

2.1 These Relevant Representations contain an overview of the project issues, which fall within our remit. They are given without prejudice to any future detailed representations that we may make throughout the examination process. We may also have further representations to make if supplementary information becomes available in relation to the project.

2.2 We have reviewed the draft Development Consent Order ('dDCO') application, Environmental Statement ('ES') and supporting documents submitted as part of the above-mentioned application, following notification of its acceptance for Examination on 11 November 2025. Our comments below are presented using the document references and ES Chapter headings relevant to our remit.

3.0 3.1 Draft Development Consent Order (Rev 2) [AS-002]

3.1 ***Article 2 'Interpretation'***

We note that under the definition of 'permitted preliminary works', it includes at sub paragraph (e) remedial work in respect of any contamination. It is our view that the remedial works in respect of contamination should not be undertaken without prior approval from the relevant planning authority, following consultation with the Environment Agency. Please see paragraphs

3.8 & 8.4 below for further details on our reasons for this. We request that sub paragraph (e) is deleted from Article 2.

3.2 ***Article 9 and Schedule 13, Part 5, For the protection of the Environment Agency***

The Environment Agency notes the proposed disapplication of Regulation 12 of the Environmental Permitting (England and Wales) Regulations 2016 ('EPR') (requirement to obtain a flood risk activity permit), in Article 9 of the dDCO. We will only agree to this disapplication if the wording of the Protective Provisions can be agreed. The Applicant has included draft Protective Provisions in Schedule 13, Part 5 for the protection of the Environment Agency. However, these are not in our standard format. We will work with the Applicant to try and agree on Protective Provisions that are acceptable to us during the examination.

3.3 ***Schedule 2, Part 1, Requirement 7 (Fire Safety Management)***

This document appears to secure mitigation measures to manage potential safety risks presented by the Battery Energy Storage System ('BESS') and its operation/maintenance. We understand that this includes identification of environmental impact and risks. We, therefore, request that we are included as a specific consultee for the Battery Fire Safety Management Plan ('BFSMP') approval, to allow us to advise on any environmental risks within our remit.

3.4 ***Schedule 2, Part 1, Requirement 8 (Landscape and Ecology Management Plan)***

The outline Landscape and Ecology Management Plan ('oLEMP') [APP-181] includes procedures and mitigation measures relevant to issues in the Environment Agency's remit. We, therefore, request that we are included as a specific consultee to Requirement 8 to allow us to advise on matters within our remit prior to its discharge.

3.5 ***Schedule 2, Part 1, Requirement 11 (Surface and foul water drainage)***

We welcome our inclusion as a specified consultee to the discharge of this Requirement.

3.6 ***Schedule 2, Part 1, Requirement 14 (Construction Environmental Management Plan)***

We have reviewed the outline Construction Environmental Management Plan ('oCEMP') [APP-176] and this requirement secures that a final Construction Environmental Management Plan for each phase of development will be submitted and approved by the relevant planning authority/authorities prior to its commencement. The Environment Agency would like to be consulted on the final plans to ensure that the risks posed to controlled waters are fully addressed and therefore we request to be listed as a specific consultee.

3.7 ***Schedule 2, Part 1, Requirement 19 (Decommissioning and restoration)***

Decommissioning and restoration of the site will involve issues within the Environment Agency's remit, such as protection of the water environment and waste management. We, therefore, request that we are included as a specific

consultee to the discharge of this requirement to enable us to advise on matters of interest in line with guidance and best practice (in force at that time) prior to decommissioning.

3.8 ***Schedule 2, Part 1 – request for additional Requirement (Land contamination & groundwater)***

As mentioned briefly in paragraph 3.1 above, it is the Environment Agency's view that works to remediate land contamination should not be included as a '*permitted preliminary work'*. This is because the Environment Agency would need to assess that such works would not cause a risk of pollution to the water environment, prior to the works taking place. Please also see paragraphs 6.2 - 6.5 below for additional technical justification for this request. We, therefore, request the inclusion of an additional Requirement to read:

Land contamination

(1) No phase of the authorised development shall commence until a contamination investigation and assessment report (including details regarding UXO where relevant) applicable to that phase, together with a written remediation strategy if applicable to deal with any contamination discovered, which is likely to cause significant harm to persons or pollution of controlled waters or the environment has been submitted to and approved by the relevant planning authority, following consultation with the Environment Agency on matters related to its function.

(2) In the event that any unexpected contamination is discovered during the construction of any part of the works, the part of the works to which the contamination relates must cease until a site investigation and assessment report applicable to that part and, if necessary, a remediation strategy to deal with any contamination which is likely to cause significant harm to persons or pollution of controlled waters or the environment has been submitted to and approved by the relevant planning authority, following consultation with the Environment Agency on matters related to its function.

(3) Any remediation required pursuant to sub-paragraphs (1) or (2) must be carried out in accordance with the remediation strategy approved pursuant to sub-paragraphs (1) or (2) unless otherwise approved by the relevant planning authority.

(4) Any verification report required by a remediation strategy approved pursuant to sub-paragraphs (1) or (2) must be submitted to the relevant planning authority in accordance with that remediation strategy.

3.9 ***Schedule 2, Part 1 – request for additional Requirement (Piling Risk Assessment)***

It is the Environment Agency's view that there should also be an additional Requirement to secure a risk assessment and prior approval of works involving piling. This is because the Environment Agency would need to review the piling risk assessment to ensure that such works would not cause a risk of pollution to the water environment, prior to the works taking place. Please also see paragraph 8.2 below for additional technical justification for this request. We, therefore, request the inclusion of an additional Requirement to read:

Piling and penetrative foundation design

(1) No phase of the authorised development, which involves the use of piling or any foundation designs using penetrative method, shall commence until a method statement, informed by a piling risk assessment, based on hydrogeological information contained in the contamination investigation and assessment report, has been submitted to and approved by the relevant planning authority, following consultation with the Environment Agency on matters related to its function.
(2) All piling and penetrative foundation works must be carried out in accordance with the approved method statement.

4.0 Book of reference [APP-021]

4.1 The Environment Agency is aware that it is listed in Category 1 (as assumed owner, or reputed owner) for various plots in the Book of Reference. The Environment Agency is currently considering the potential impact the project may have on its land holdings and its ability to carry out its statutory undertakings. At this stage, therefore, the Environment Agency must **object** to any acquisition of land or rights in relation to its land interests until it has had a proper opportunity to assess the potential effects of the acquisitions sought by the Applicant. We will be carrying out this assessment and discussing this matter with the Applicant during the course of the Examination and we will update the Examining Authority on our position in due course.

4.2 The Environment Agency is a statutory undertaker within the meaning at s.127(8)(a) of the Planning Act 2008. Section 165 of the Water Resources Act 1991 (as amended) sets out its powers to carry out flood defence and drainage works (to the extent that it has a power and not a duty).

5.0 Chapter 7: Ecology and Nature Conservation [AS-012]

5.1 We have reviewed Chapter 7, together with the relevant Appendices. Paragraph 7.5.105 of Chapter 7 states that access tracks will utilise existing crossing points where possible to minimise impacts to habitats. The Chapter states that there will be 45 new culverts and Chapter 2: Scheme Description [APP-039] states that 125 locations are presumed to require either the creation of a new culvert or the reinforcement/widening of an existing culvert/bridge structure. It is not clear what the potential impacts of these works could be for habitats and we, therefore, advise that this issue is explored further.

5.2 In accordance with Paragraphs 3.10.78 and 3.10.79 of the National Policy Statement for Renewable Energy Infrastructure (EN-3), the culverting of existing watercourse/drainage ditches should be avoided, and where culverting for access is unavoidable, it should be demonstrated that no reasonable alternatives exist.

5.3 ***Appendix 7.6: Otter and Water Vole Survey*** **[APP-077]**
We have reviewed the Otter and Water Vole Survey and agree with the recommendations for relevant mitigation using licenced ecologists. We would support improvements to the watercourses being made, in terms of water vole habitat, such as varying the bankside habitat to improve cover. We advise that sensitive maintenance measures are incorporated to ensure water vole are

not impacted yet their habitat is improved. We would like to encourage the Applicant to work with the Waterlife Recovery Trust in supporting their mink trapping programme to ensure that water vole populations are strengthened along with other wildlife populations which are prey to mink.

5.4 ***Appendix 7.12: Biodiversity Net Gain Assessment*** **[APP-082]**
We consider that the Biodiversity Net Gain Assessment misses potential opportunities to improve watercourses within the scheme's boundary and it is unclear where the 10% watercourse net gain will be achieved. Given the large area of land covered by the scheme, we would support that further opportunities are taken to provide improvements to the watercourses present.

5.5 The BNG Metric Calculator was not included within the Biodiversity Net Gain Assessment and therefore based on the information provided within the Assessment, is not clear whether the unit calculations are correct or achievable. In relation to the Watercourses Module specifically, there is no indication how changes to existing culverts and the creation of new culverts will be mitigated or what extent of ditch management is required to achieve a 10% net gain. We strongly recommend that this is further considered.

6.0 Chapter 9: Ground Conditions [APP-046]

6.1 We have reviewed Chapter 9: Ground Conditions and the relevant appendices in respect of the protection of controlled waters only. Based on the information available, the site is in an area of environmental sensitivity for groundwater but is understood to be predominantly greenfield in nature.

6.2 The provided Factual Ground Investigation by Donaldson Associates, dated June 2009 (with site work undertaken between February 2009 and April 2009) [APP-107], has been used to inform the Phase 1 Ground Conditions Desk Study in respect of Land Parcel A [APP-097]. We consider this to be too old to be accepted in relation to the site, given the length of time which has elapsed since it was written (16 years ago). Ground conditions and in particular groundwater levels and quality may have changed significantly and therefore this should be considered and factored into further risk assessments.

6.3 Potential contaminant linkages are identified within Section 7.3: Preliminary Risk Assessment, of the Phase 1 report, which goes on to state that these linkages should be assessed further through site investigation into the Environmental Statement post consent. Paragraph 9.3.22 of Chapter 9 states that '*Specific targeted contamination investigation at critical locations during detailed design stage is proposed, in combination with geotechnical investigation for foundation design and directional drilling'*.

6.4 Paragraph 9.5.10 states that "*Preliminary and Detailed UXO risk assessments from a specialist are to be obtained*". Many UXO items contain compounds that can leach into soil if the casing corrodes; these can migrate into groundwater. It is important that the findings of UXO risk assessment are included, where appropriate, within the general site investigations and risk assessments.

6.5 It is important that these further investigations, together with any remediation, are secured in the DCO. Accordingly, as referenced in paragraphs 3.1 and 3.8 above, we request that an additional Requirement is added to Schedule 2, Part 1, to secure the undertaking of this work and provide the Environment Agency and the relevant planning authority with an opportunity to comment on and approve any remediation works found to be necessary.

7.0 Chapter 10: Water resources [APP-047]

7.1 We have reviewed Chapter 10: Water Resources and the relevant appendices in relation to the protection of controlled waters; flooding from tidal and fluvial sources and proposed drainage for the BESS, only. We have specific comments on the Flood Risk Assessment (FRA) and Water Framework Directive Assessment below. At this stage, the Environment Agency raises two holding objections in respect of:
a) the proposed drainage for the BESS, due to concerns regarding risk to the environment, as explained in paragraphs 7.10-7.11 below.
b) the additional information required to demonstrate that there will be no increase in flood risk on third parties resulting from the access track construction in the River Torne floodplain, as explained in paragraphs 7.5-7.7 below.

7.2 Please note that the Lead Local Flood Authorities (City of Doncaster and North Lincolnshire) and any relevant Internal Drainage Boards should also be consulted for advice on the risk of flooding from groundwater, drainage systems, reservoirs, canals or ordinary watercourses.

7.3 We note that Table 10.3 identifies private water supplies as a receptor. However, to ensure that these are appropriately protected, specific private water supplies should be identified now and used to inform the Environmental Statement. We advise that identification of private water supplies should not be delayed as these will need to be known prior to, and feed into, any further ground/contamination investigations.

7.4 ***Appendix 10.1: Flood Risk Assessment (Part 1 and 2)*** **[APP-108 & APP-109]**
Paragraph 5.18 and Appendix A (A9) refers to Flood Zone 3b (functional floodplain) as the 1 in 30 year event for both the River Trent and River Torne. This was previously agreed, in February 2025, during pre-application discussions, as shown in Appendix E of the FRA. However, since that time the River Trent 2023 model has been reviewed (during the summer of 2025) and the 1 in 30 flood extent no longer impacts the site. Therefore, the modelled 1 in 30 River Trent extent can be excluded from the definition of Flood Zone 3b and it should be defined based on the River Torne 1 in 30 extent only.

7.5 Paragraphs 5.20 and 5.22 consider the potential impact of development on floodplain storage. The FRA only considers the potential impact with regard to Flood Zone 3b, concluding that the impact of the scheme will be negligible. As previously advised in our Preliminary Environmental Impact Report ('PEIR') response, the loss of floodplain should be calculated up to the 1% annual

exceedance probability (AEP) plus climate change flood event, for the River Torne. It should therefore be considered for Flood Zone 3a as well as Flood Zone 3b.

7.6 Appendix C drawing reference: 'Figure 2.6, Typical Access Track, Rev 1' shows two 'No-dig (non-intrusive)' access track options that will involve the raising of tracks to 0.35/0.4m above the existing ground level. Whilst we acknowledge that the access tracks will be permeable by nature, we consider that there could be a potential impact on flood flows and flood storage. This does not appear to have been considered in the FRA. The FRA concludes that there will be negligible impact on the existing floodplain storage, however, this conclusion has not been fully explained/justified. Further details to support this conclusion and demonstrate that the worst-case scenario has been assessed should be provided. This must demonstrate that there will be no impact to third parties from the proposed development.

7.7 Alternatively, we would support a commitment in the FRA that any access tracks in the River Torne 1% AEP plus climate change flood extent will not be raised above the ground level, as shown in Figure 2.6 as the 'typical access' options. If the Applicant is able to confirm that there will be no raising of tracks within the relevant River Torne extent, this will resolve our holding objection in respect of the potential increase in flood risk to third parties.

7.8 Table 10-2 of Chapter 10 and paragraphs 5.29-5.39 of the submitted FRA address the Critical Flood Level (CFL) which is a residual flood risk recommended in the North and North East Lincolnshire Strategic Flood Risk Assessment (SFRA). Whilst we acknowledge that it is an unlikely event, we do highlight it as a recommendation of the SFRA. The FRA does not propose to raise critical equipment above the CFL. In terms of meeting the requirement of the National Policy Statement EN-1, which outlines that development must be designed and constructed to remain operational time of flood, we defer to the Examining Authority/Secretary of State to decide whether this approach is acceptable with respect to managing residual risk.

7.9 In response to previous comments raised by the Environment Agency, it is stated on page 20 of Chapter 10: Water Resources, that it is not expected that containment of fire water will be in the form of a bund and instead it will be contained in below ground crates. Paragraph 7.21 of the FRA states that the gravel sub-base of the BESS will be lined with an impermeable liner. The FRA outlines that *'In the event of a fire a penstock will be shut off in the downstream manhole to allow any water used to fight the fire to be contained within the below ground network ready to be pumped off once the fire is out*'. The FRA notes that the final design will be refined at the detailed design stage.

7.10 We have concerns regarding this approach and whether it will offer adequate protection of controlled waters. It is not clear what the design and composition of the crates will be or whether the compound will be durable and resistant enough to withstand any potential contaminants that could be present. We would also expect to see details regarding the management and maintenance

of containment measures to ensure that the measures will protect the water environment over the lifetime of the development.

7.11 We consider that it is best practice to store any potentially contaminated effluents above ground to minimise the risk of environmental impact. Whilst underground storage may not necessarily be unacceptable, we would require further information relating to construction materials and design to fully assess its suitability. We request that further detailed information is provided to demonstrate that the proposed design and materials to be used are suitable and robust for use in the proposed development.

7.12 ***Appendix 10.2: Water Framework Directive Assessment*** **[APP-110]** Overall, we are satisfied that the approach of the Water Framework Directive Assessment to scoping in/out of waterbodies and activities is appropriate. However, we have concerns regarding the proposed BESS drainage, as per our comments above. We agree with the statement in Table 6.2, that without mitigation, the WFD watercourses could be impacted due to the migration of pollutants in the event of a fire. Currently, the application has not adequately demonstrated that the proposed BESS drainage system will adequately mitigate the risk to controlled waters. Until additional information is provided, we are of the view that there is a risk that the water environment could be impacted from the migration of pollutants in the event of a fire. Therefore, we cannot currently agree with the conclusions of the WFD Assessment.

7.13 Section 6.4 of the Assessment proposes that '*Any new bridges or culverts will be designed to ensure flow capacity is maintained and access is retained to the watercourse for maintenance'*. We recommend that the bed of any culvert should be buried beneath the riverbed (normally by a minimum of 150mm) to ensure no step change in channel bed height. Given the depositional environment of the ditches and rivers in this area, this measure would assist in reducing maintenance by increasing capacity. We also advise that further best practice, for the inclusion of clear span bridge structures, wherever possible, should be considered.

8.0 Document 7.1 Outline Construction Environmental Management Plan [APP-176]

8.1 Throughout the Environmental Statement, buffer zones for watercourses are proposed for reasons including maintenance [APP-108], water quality protection [APP-110] and ecological mitigation [AS-012]. We note that the outline Construction Environmental Management Plan ('oCEMP') states that *'Watercourse and defence easements will be identified in the Construction Environmental Management Plan and adhered to by the Principal Contractor and no construction will be undertaken within the relevant easement.'*. We support this measure and request that the final CEMP includes details on how this will be implemented on the site.

8.2 Page 51 refers to a Piling Risk Assessment being prepared if piling is required as part of the scheme. This Assessment should be written in accordance with Environment Agency guidance document "Piling and Penetrative Ground

Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention. National Groundwater & Contaminated Land Centre report NC/99/73". We request that this guidance is explicitly referenced in the oCEMP for the avoidance of doubt. The site- specific piling risk assessment should be based on hydrogeological information and a contamination investigation and assessment report (which includes a site investigation). It is our view that the need for a Piling Risk Assessment, if required, should be secured in Schedule 2, Part 1 of the dDCO to ensure that appropriate control and consultation on its contents is undertaken prior to the commencement of such works. Please see paragraph 3.9 above requesting this as an additional Requirement.

8.3 Page 52 of the of the oCEMP states that if any monitoring relating to groundwater or contaminated land is necessary, the requirements will be discussed with the East Riding of Yorkshire Council. This should be corrected to the relevant planning authority for this scheme. As per our recommendations for a requirement relating to land contamination, we request that the oCEMP also refers to the Environment Agency being involved in discussions on this matter.

8.4 Page 62 outlines a procedure should unexpected contamination be discovered. This procedure is not adequate as the Environment Agency (and the relevant planning authority) would not be given an opportunity to review the investigation and control measures to be taken to ensure the contamination is adequately dealt with and does not lead to pollution. We have therefore set out in paragraph 3.8 above a Requirement for Schedule 2, Part 1 of the dDCO to secure the required procedure and consultation, should unexpected contamination be discovered.

9.0 7.3 Outline Decommissioning Environmental Management Plan (Rev 1) [APP-178]

9.1 The outline Decommissioning Environmental Management Plan ('oDEMP') states that best practice measures will be adhered to in the decommissioning of the scheme, which we support.

9.2 Paragraph 3.2.2 of the oDEMP states that '*It is assumed that all the below-ground cables will be left in situ to avoid unnecessary disturbance to the ground or to nearby human or ecological receptors'*; however, paragraph 3.8.1 states that '*cabling above 1m below ground (on and off site) (any cabling buried 1m+ below ground will not be removed at decommissioning)*'. We advise that the oDEMP clarifies whether it is intended, at this stage, to remove some or none of the cabling at the decommissioning phase, with consideration for the harm/benefits which may arise in line with Paragraph 2.10.69 of the National Policy Statement for Renewable Energy Infrastructure (EN-3).

9.3 It is not clear whether it is intended to leave the 45 proposed culverts in place or whether they will be removed during the decommissioning phase of the scheme. It is unclear whether some of the proposed culverts will be required for the construction phase of development only, or whether some/all the

culverts will be required for both the construction and operational phases of development. Paragraphs 10.5.11 and 10.5.22 of Chapter 10 [APP-047] acknowledge that culverts have the potential to impact existing flow patterns of watercourses and assigns a significance of effect of 'Moderate Adverse (Significant)'. Culverts also impact the morphology of watercourses and aquatic habitats. We request that if culverts remain in place throughout the lifetime of the development, then the removal of these is fully explored at decommissioning stage to minimise the impacts on morphology and habitats. We request that a commitment to consider this is included in the oDEMP.

10.0 Outline Battery Safety Management Plan (Rev 1) [APP-179]

10.1 We have reviewed the outline Battery Safety Management Plan ('oBSMP'), which includes the aim of ensuring that the risk to the environment during construction, operation and decommissioning, and the safety features and additional safety recommendations to mitigate these are identified.

10.2 On page 11 of the oBSMP, the Applicant mentions the National Fire Chiefs Council (NFCC) recommendations regarding environmental impact by outlining that a drainage strategy will be developed post-consent, in consultation with the Environment Agency. However, we consider that this is insufficient to satisfy the NFCC recommendations and the oBSMP should further consider and detail the potential environmental impact and risk in the event of a fire. This is particularly important given the concerns outlined above in respect of the proposed gravel base and below grounds crates etc.

10.3 In particular, the oBSMP should consider the potential effect of the release of firewater from the BESS compounds on groundwater quality. Highly polluting chemicals in batteries could enter the water environment (groundwater and surface water) in firewater or rainfall should battery containers become exposed in the event of a fire. While in the event of a fire at a BESS, it is accepted best practice to let the containers on fire burn out, it is likely water will be used to cool neighbouring containers. This water could enter burning containers through surface water run off or directly from spray cooling neighbouring containers. Furthermore, during or following a fire at a BESS development, water could enter exposed containers through rainfall during the period of time it takes to remove or cover burnt containers.

11.0 7.6 Outline Landscape Ecological Management Plan (Rev 1) [APP-181]

11.1 We have reviewed the outline Landscape Ecological Management Plan ('oLEMP') and consider that it is not clear what the monitoring arrangements will be for post-construction. Section 6 of the oLEMP refers to the proposed monitoring arrangements for mitigation measures post-construction; however, these appear to be non-specific. We advise that the oLEMP should be more specific and clearer on the intended monitoring arrangements and provide indicative timescales for when monitoring results are likely to be submitted to the relevant local planning authority, if possible.

12.0 Flood Risk Sequential Test and Exception Test (Rev 1) [APP-186]

12.1 We have reviewed the submitted Flood Risk Sequential Test and Exception Test document. The Environment Agency can provide advice on the relative

flood risk between the proposed site and any alternative sites identified if the Examining Authority requests this. Our advice on the Exception Test relates to the second bullet point only (Paragraph 5.8.11 of the National Policy Statement for Energy EN-1), in respect of whether the proposed development will be 'safe' and not increase flood risk elsewhere.

12.2 Paragraph 7.1.41 outlines that the FRA demonstrates that there will be no increase in flood risk as a result of the scheme and paragraph 7.1.46 concludes that the terms of the Exception Test have been met. As outlined in Section 7 of these representations, we are of the view that further work is required in relation to the impact of the scheme on flood storage and flood flows. We, therefore, advise that it is not considered that Part B of the Exception Test is passed until it has been satisfactorily demonstrated that there will be no increase in flood risk elsewhere.

13.0 Statutory Undertakers Position Statement [APP-187]

13.1 The document states on page 6: '*Protective Provisions were issued on 4 July 2025, and a further updated set of Protective Provisions were issued on 9 July 2025. The Applicant awaits a response.*'. We have reviewed our records and the Protective Provisions were initially sent to a retired colleague on 04 July 2025 and therefore were not received. They were then resent by the Applicant to our team inbox and received on 14 July. We sent our standard Protective Provisions on 15 July 2025 by email. We have had no further correspondence with the Applicant since our last email dated 15 July 2024 regarding the Protective Provisions.

14.0 Further representations

14.1 In summary, we can confirm that we have no objection in principle to the proposed development, as submitted, and the holding objections outline above are capable of resolution. We will continue to work with the Applicant in respect of matters concerning the Environment Agency's landholdings and to agree on the wording of the Protective Provisions.

14.2 We reserve the right to add or amend these representations, including requests for DCO requirements and Protective Provisions should further information be forthcoming during the examination on issues within our remit.

Should you require any additional information, or wish to discuss these matters further, please do not hesitate to contact me at the number below.

Yours sincerely

[redacted]
Sustainable Places Planning Advisor

Direct dial: [redacted]
Direct e-mail: [redacted]@environment-agency.gov.uk
Team e-mail: LNplanning@environment-agency.gov.uk

Appendix C – Environment Agency Correspondence (February 2026)

[redacted]

From: [redacted] via Quatrix <no-reply@quatrix.it>
Sent: 25 February 2026 10:23
To: [redacted]@pegasusgroup.co.uk
Subject: Quatrix: EIR2026_07979_File share notification

Department for Environment Food & Rural Affairs

Pan Defra Standard SFTP Service

File share

Dear [redacted],

You have been provided with a data transfer for the information you requested (see the attached letter for more details).

Access to this transfer will expire after 30 working days due to data protection restrictions. If you are unable to download the data within this timeframe, please let us know and we will re-send it.

Our review of the Tidal Trent data over the summer did not involve any new modelling, you still have the most up to date data relevant to this site for the Tidal Trent. Instead, the review was an assessment of the accuracy of the current Tidal Trent model, Jacobs, 2023. The assessment highlighted that the Tidal Trent model has overestimated flood risk in some areas including this site for the 1 in 30yr event. This is because some tributaries have been modelled as part of the Tidal Trent model to represent back water effects on the tributary, from the River Trent being high. The tributaries have been represented as 'gullies' in the 2D domain. This is a simpler representation than using a 1D/2D approach. It is suitable for assessing the backwater effects but does have a number of limitations which has caused some overestimation of flood risk. For example, where the 2d channel is smaller than surveyed. This is present for the Tidal Trent model results for the River Idle, River Torne, River Eau and Bottesford Beck.

We advise that you consider the 1 in 30yr outline for the River Torne as part of this application as it is still shown to impact the site, as mentioned in our previous response. This model was updated in 2025, and I have transferred you the relevant

files from the new Torne model.

Kind regards,

PSO Team | East Midlands

File name	Size
Torne_WSP_2025_Product_6.zip	234 MB
Torne_WSP_2025_Product_5.zip	2.2 MB
EIR2026_07979_Data Transfer Letter.pdf	93 kB
Torne_WSP_2025_Product_7.zip	1.6 GB

Download Files

Kind regards
Pan Defra SFTP service

Appendix D – IDB Mapping

Key

- DEIDB Pumping Station
- DEIDB Piped Length
- DEIDB Maintained Watercourse
- DEIDB Board Area
- EA Main River

THORNE CP

CROWLE AND EALAND CP

Isle of Axholme

Thorne

Crowle

Ealand

Hatfield Chase

Dirtness Levels

Tween Bridge Wind Farm

Tween Bridge Moors

South or Sand Moors

Nun Moors

Crowle Waste or Moors

Crowle Common

Humberhead Peatlands National Nature Reserve

Sheffield & South Yorkshire Navigation

Stainforth & Keadby Canal

River Torne

Hatfield Waste Drain

North Soak Drain

South Soak Drain

Old Godnow Drain

New Godnow Drain

Boating Dike

High Levels Bank

Low Levels Bank

Anchor Drain

Plains Lane (Track)

M180

A18

A614

Doncaster East Internal Drainage Board

Water Management Consortium

Senior Engineer - Mr R. Brown, BEng (Hons), GMICE

N

Tween Bridge Solar Farm DEIDB Area

Drawing No:	Overview		
Drawn By:	D Cowling	Checked:	R Brown
Date:	07/02/2023	Scale:	1:20,000
Dept:	Engineering		

Wellington House
Manby Park
Manby
Louth
Lincolnshire
LN11 8UU
01507 328095
engineers@lmdb.co.uk
www.wmc-idbs.org.uk

Key

- IOANN Pumping Station
- IOANN Piped Length
- IOANN Watercourse
- IOANN Board Area
- EA Main River

Isle of Axholme & North Nottinghamshire Water Level Management Board

Water Management Consortium

Senior Engineer - Mr R. Brown, BEng (Hons), GMICE

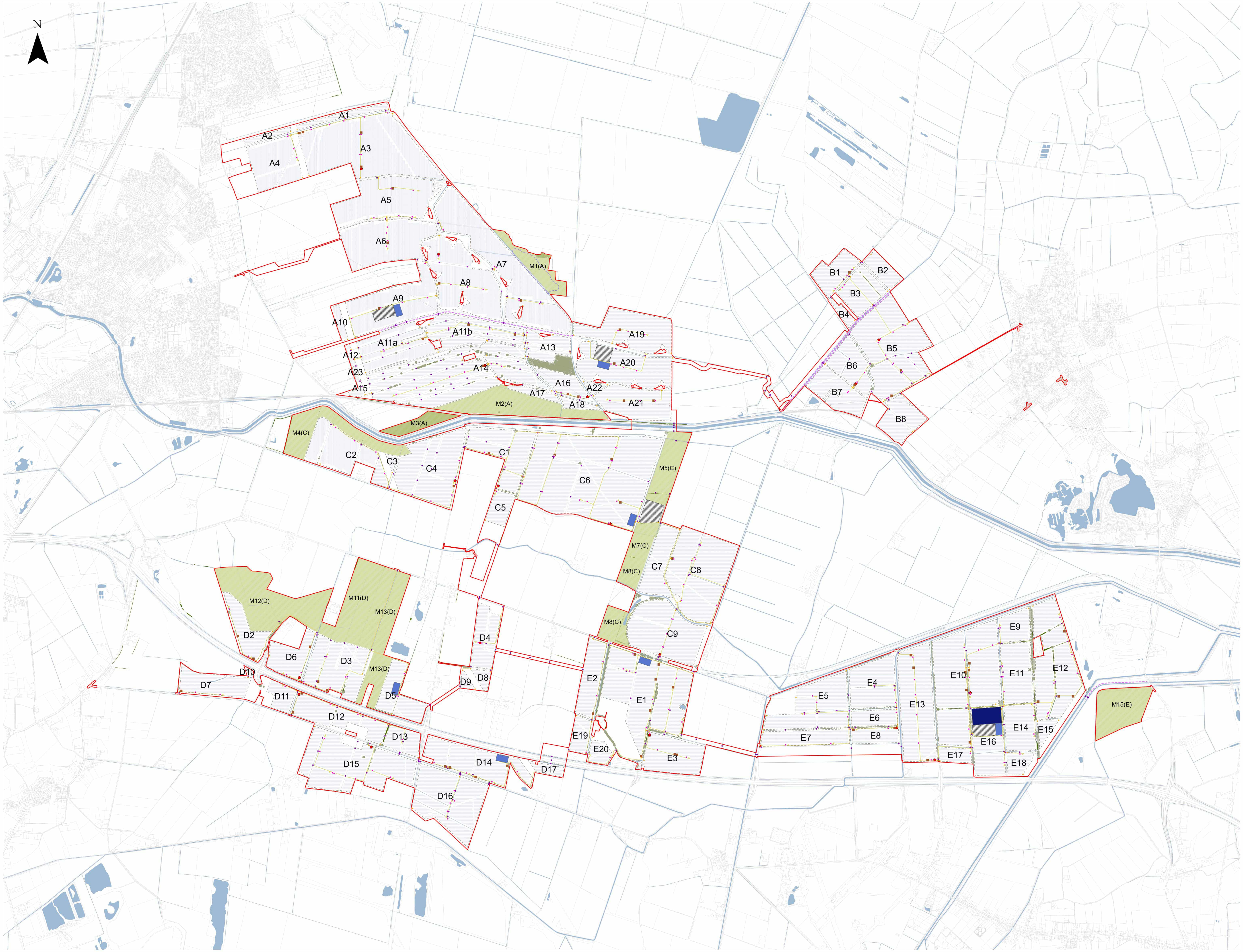
N

Tween Bridge Solar Farm IOANN Area

Drawing No:	Overview		
Drawn By:	D Cowling	Checked:	R Brown
Date:	07/02/2023	Scale:	1:25,000
Dept:	Engineering		

Wellington House
Manby Park
Manby
Louth
Lincolnshire
LN11 8UU
01507 328095
engineers@lmdb.co.uk
www.wmc-idbs.org.uk

Appendix E – Indicative Operational Layout Plan and Indicative Layouts and Cross Section Plans



LEGEND

Order Limits

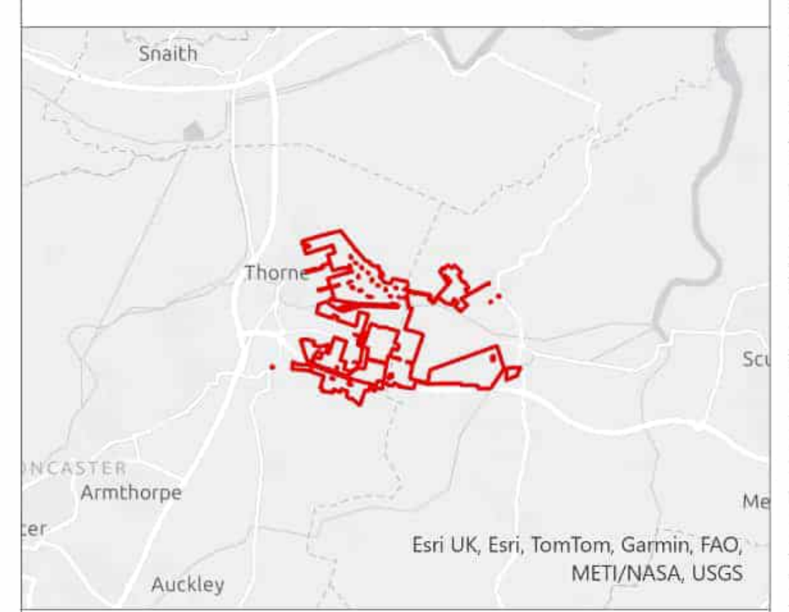
Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
- Internal Access Tracks
- 400kV Substation
- 132kV Substation
- BESS
- Permissive Path
- Fencing
- Indicative Areas for Mitigation, Enhancement and/ or Retained Agricultural Land
- Solar PV Modules
- A1 Field Reference

Notes
1. The drawing is for illustrative purposes only
2. The location of the features shown are indicative only to show the key features of Tween Bridge Solar Farm for which development is sought
3. The indicative layout demonstrates one way that the Scheme could be undertaken within the parameters of the DCO, consent is not being sought for this layout



Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2b: Indicative Operational Layout Plan

N W E S

0 195 390 Metres

Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936	© Crown copyright and database rights 2025. Ordnance Survey AC0000808122

Scale: 1:11,000	Paper Size: A0	Sheet: 1 of 1

RWE

Document Reference: 6.4.2.2			Revision: 1
PINS Number EN010148		Drawing Status: DCO Application	
Drawn: NAM	Checked: EH	Approved: AD	Date: 20/08/2025

Path: C:\Users\UI142424\RWE\RWE - UK Subsidy-Free\12. GIS\Projects\GIS JBM Solar Projects\Tweenbridge\J343 Tweenbridge - Overview Plans\J343 Tweenbridge_Overview Plans_NewTemplate.aprx

N

A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11a A11b A12 A13 A14 A15 A16 A17 A18 A19 A20 A21 A22 A23

B1 B2 B3 B4 B5 B6 B7 B8

C1 C2 C3 C4 C5 C6 C7 C8 C9

D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17

E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14 E15 E16 E17 E18 E19 E20

M1(A) M2(A) M3(A) M4(C) M5(C) M7(C) M8(C) M8(C) M11(D) M12(D) M13(D) M13(D) M15(E)

LEGEND

- Order Limits

Existing Features

- Public Rights of Way
- Powerlines and Pylons
- Woodland
- Trees
- Hedgerows
- Waterbodies and Watercourses

Scheme

- Access Points
- Crossing Points
- Inverters
- Switchgears
- Spares Containers
- Internal Access Tracks
- 400kV Substation
- 132kV Substation
- BESS
- Permissive Path
- Fencing
- Indicative Areas for Mitigation, Enhancement and/ or Retained Agricultural Land
- Fixed Solar PV Modules
- A1 Field Reference

Notes
1. The drawing is for illustrative purposes only
2. The location of the features shown are indicative only to show the key features of Tween Bridge Solar Farm for which development is sought
3. The indicative layout demonstrates one way that the Scheme could be undertaken within the parameters of the DCO, consent is not being sought for this layout

Tween Bridge Solar Farm

Drawing Ref: Environmental Statement Volume 4, Figure 2.2a: Indicative Operational Layout Plan

0 5 10 Kilometers

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936

Scale: 1:11,000 | Paper Size: A0 | Sheet: 1 of 1

RWE

Document Reference: 6.4.2.2 | Revision: 1

PINS Number EN010148 | Drawing Status: DCO Application

Drawn: NAM | Checked: EH | Approved: AD | Date: 20/08/2025

Path: C:\Users\s1412426\RWE\RWE - UK Subsidy-Free\12. GIS\Projects\GIS_BBA Solar Projects\Tweenbridge\343 Tweenbridge - Overview Plans\343 Tweenbridge_Overview Plans_MainTemplate.aprx