

Proof of Evidence – Appendices.

In Respect of Sheepwash Solar Farm.
On behalf of Statkraft UK Ltd.

Date: 19 December 2023 | Pegasus Ref: P22-2992

Author: Chris Cox





Appendix 1 – Flood Risk Assessment



LAND TO THE WEST OF MARDEN

ADDENDUM TO FLOOD RISK ASSESSMENT & OUTLINE DRAINAGE STRATEGY

STATKRAFT UK LTD

DECEMBER 2023



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DOCUMENT CONTROL

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Issue	Approved By	Date	Comments
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Issue 1.1	Ben Fox <i>BSc (Hons) MCIWEM C.WEM CEnv</i>	18 December 2023	For submission

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FIGURES

Figure 1 **Fig 5-1 of JBA Flood Risk Assessment with new site boundary shown**

TABLES

Table 1 **Estimate Total Volume of Displaced Flood Water**

APPENDICES

- Appendix 1** **100 General PV Layout**
Statkraft Drawing No. SCUKX-SHEEP-000 100 (P) Rev N dated 23/01/23
- Appendix 2** **Environment Agency Modelled Fluvial and Pluvial Flood Extents**
Drawing No. S714/07 Rev A
- Appendix 3** **Surface Water Drainage Strategy DNO/Customer HV Compound**
JBA Consulting Drawing No. GGO-JBAU-XX-XX-DR-D-0001 dated 23.03.23
- Appendix 4** **Sequential Test Summary Table (Document Ref: S714-FN03)**
Flood Zones – Drawing No. S714/02
Risk of Flooding from Surface Water – Drawing No. S714/04

1. INTRODUCTION

- 1.1. PFA Consulting Ltd have been commissioned by Statkraft to provide this Addendum report to a Flood Risk Assessment (FRA) (dated March 2022) and Outline Surface Water Drainage Strategy (OSWDS) (dated March 2023) prepared by JBA Consulting.
- 1.2. This Addendum has been prepared by Ben Fox who holds a Bachelor of Science (Hons) Degree in Environmental Science. He is a Chartered Water and Environmental Manager (CWEM) and Chartered Environmentalist (CEnv), and he is a member of the Chartered Institution of Water and Environmental Management (MCIWEM).
- 1.3. He is employed as an Associate of PFA Consulting Ltd, a firm of consulting engineers specialising, inter alia, in flooding and drainage schemes associated with residential, commercial and industrial development schemes. He has widespread experience of preparing Flood Risk Assessments and Drainage Strategies to support such development proposals and, in particular, large solar farms.
- 1.4. As part of the Appeal Scheme a number of changes have been made to the Planning Application Scheme and this Addendum considers those changes which are material to the submitted JBA Consulting FRA and Outline Surface Water Drainage Strategy.
- 1.5. The most significant of these changes are the omission of the Battery Storage (BESS) element of the original proposals, the relocation of the high voltage (HV) compound to a point closer to the Point of Connection (POC) and to an area of lower flood risk within the site, and a reduction in the area within the security fence. Other minor amendments have been made to the layout of the solar panels, amendment of northern fence line and landscape mitigation planting and clarification in relation to alignment of the permissive footpath to the eastern boundary of the Site.
- 1.6. Also, included within this Addendum are some other matters which are considered to be relevant to the flood risk and surface water drainage arrangements for the proposed development, and which have been raised by third party objectors.
- 1.7. A brief flood risk commentary on the Sequential Test Analysis undertaken by Pegasus Planning is also included.
- 1.8. There have been no changes in either Government or Local flood risk policies or advice which need to be considered within this Addendum.

2. THE DEVELOPMENT NOW PROPOSED

2.1. As described in the Appellant's Statement of Case the amendments to the application, details which need to be addressed in this addendum are:-

(i) Relocation of the HV Compound further west closer to the point of connection and associated attenuation and landscape screening.

(ii) Correction to the northern fence line to the Proposed Development.

(iii) As a result of the relocation of the HV Compound, a reduction in the number of transformer stations (from 15 to 6), a reduction in the length of access tracks (from 3400m to 2700m) and a reduction in the length of fencing (from 4500m to 4037m).

(iv) Reduction in solar panels to further mitigate impacts upon 8 Sheephurst Cottages.

(v) All landscape mitigation planting to be provided within the Site.

(vi) Reduction in solar panels and further landscape mitigation planting to further reduce impacts upon 8 Sheephurst Cottages and the Little Cheveney Farm Listed Buildings.

(vii) A change to the landscape planting species mix to respond to the Maidstone Landscape Character Guidelines, introducing faster growing species to secure screening more quickly.

(viii) Clarification in relation to alignment of the permissive footpath to the eastern boundary of the Site in response to the Environment Agency consultation response. The permissive footpath would run through the buffer zone between the security fence and the Lesser Teise which, at its narrowest, is 7m.

2.2. These amendments result in the area of land (within the fence line) to be used for solar energy generation reducing from 54.6ha to 46.3ha (as set out in the details of the Proposed Development with Appeal Amendments).

2.3. The Appeal Scheme Site Layout is attached as **Appendix 1**.

2.4. The description in the original FRA of the site topography, watercourses, planning and flood risk overview, fluvial and surface water flood risk to the site (including flood extents and flood depths), groundwater, sewer and reservoir flood risk are related to the topography of the site and therefore remain unchanged.

2.5. Figure 5-1 contained in the JBA Consulting FRA which is replicated below, with the Appeal Scheme boundary superimposed, reflects the fluvial and pluvial flood extents affecting the Site. The fluvial areas of flood risk are shown in blue and the pluvial areas of flood risk are shown in pink on **Figure 1** below.

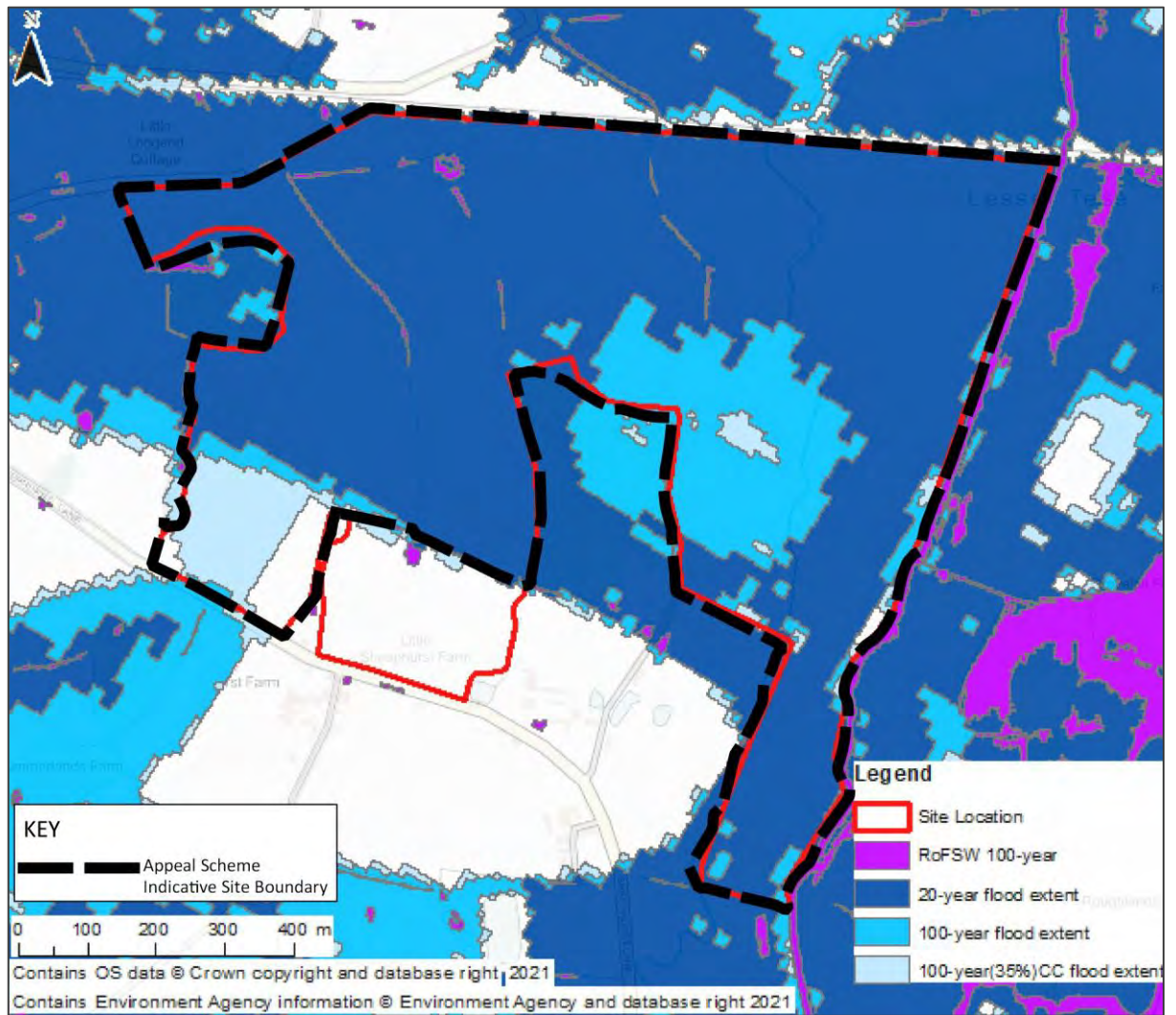


Figure 1: Fig 5-1 of JBA Flood Risk Assessment with new site boundary shown

3. FLOOD RISK TO THE DEVELOPMENT

- 3.1. The updated Site Layout/Site Boundary has been superimposed on this flood extent plan on Drawing No. S714/07 Rev A. For ease of reference, this Plan is replicated in **Appendix 2**.

Climate Change, Standard of Protection and the Design Flood

- 3.2. In terms of providing an acceptable standard of protection against flooding for new development, the development should be appropriately safe without increasing flood risk elsewhere in the 'design flood'.
- 3.3. The JBA FRA assessed the 100-year flood with a 35% allowance for climate change as a proxy for the fluvial 'design flood'. This was (and remains) a precautionary approach and is in excess of the +21% allowance required under the Environment Agency's guidance.

Site Specific Flood Risk

- 3.4. The site layout has been devised using a sequential approach and the HV substation now lies in an area affected by lowest flood depths (a maximum of approximately 100mm in the 100-year flood event including a 35% allowance for climate change - the proxy 'design flood'). Access to the site from Sheephurst Lane also lies outside the extent of the 100-year flood event including a 35% allowance for climate change (the proxy 'design flood').
- 3.5. There are 6 small transformer stations across the site, which, as can be seen from the plan at Appendix 2, lie within the areas potentially subject to fluvial and pluvial flooding. As identified in the JBA FRA, the slab levels of these elements of the development will need to be set 300mm above the 100 year plus 35% climate change flood level, or 150mm above the highest surrounding ground level (whichever is the greatest) in order to provide adequate protection against flooding from fluvial and pluvial sources and surface water ingress. These measures will ensure that the proposed development will remain operational, and safe, in times of flood.
- 3.6. As these minor elements of the development are located within the flood extent areas, the raising of the slab levels of these elements will result in a very minor loss of flood storage volume within the site (which is an issue raised by Third Parties).
- 3.7. The NPPF requires that any development has safe access and escapes routes identified as part of an agreed emergency plan.
- 3.8. The site access is onto Sheephurst Lane and lies outside the extent of the 100-year flood event including a 35% allowance for climate change (the proxy 'design flood'). The site lies within the Horsmonden and Claygate' Flood Warning and Alert Area, and, as part of their normal working procedures, site operatives will be aware of any flood warnings which the Authorities may provide. The site is not permanently occupied, with access only required for and equipment inspection/repairs and landscape maintenance by authorised personnel. Routine maintenance visits can be scheduled to avoid periods of elevated flood risk. The site is also remotely monitored and faulty modules can be shut down as required. Such maintenance personnel will not be 'vulnerable' and if a flood alert / warning is issued the site operatives will have sufficient warning to evacuate the site along the local highway network.
- 3.9. The nature of the fluvial flooding is such that there will be no sudden inundation of the site and therefore, due to the specific nature of this development, it is not considered necessary to identify a specific flood response plan.

4. FLOOD RISK ELSEWHERE

4.1. Whilst the statutory consultees (the Environment Agency, the Lead Local Flood Authority (LLFA) and the Internal Drainage Board (IDB)) have raised no objection, various third parties have suggested that the development has the potential to increase flood risk elsewhere as a result of buildings/structures with the floodplain, increased run-off from the panels and as a result of elements of the development (particularly the security fencing) interfering with flood flows. Concerns have also been expressed about accelerated run-off during the construction phase.

Surface Water Drainage

4.2. The OSWDS produced by JBA set out the approach for surface water drainage for the different elements of the development. These are summarised below:

- Solar Panels
 - *'As the solar panels will be mounted above ground, at an angle to the ground surface, the rain falling on the panels will immediately drop onto the existing soft landscaping under the panels. There will therefore be no increase in the runoff rates and volumes due to the panels.'*
- Access Tracks
 - *'Internal access roads will be constructed from permeable materials such as MOT Type 3 (reduced fines aggregate) with a geogrid to enable surface water runoff to either infiltrate to the ground or run off at or below the greenfield runoff rate.'*
- DNO/Customer HV Compound
 - *'the small increase in runoff volume and peak flow can be readily managed and reduced using dissipation techniques. Appropriate dissipation structures that convert point flows into sheet flows mimic natural runoff characteristics and provide a more robust method of managing runoff than point discharges waterbodies. The method disconnects drainage from waterbodies and allows runoff to flow through the natural environment encouraging infiltration and assimilation, slowing the flow and reducing the volume that eventually reach local waterbodies. '*
 - *'To mitigate against increasing downstream flooding due to the additional volume of runoff, the approach has been utilised. This will be achieved by the swale retaining the first flush of surface water within the swales to a depth of 200mm, flows in excess of this will be converted into very shallow sheet flows (ranging between 1mm and 12mm for the 1 in 100-year plus 45% climate change rainfall event) spilling over the edge of a dropped kerb to act as a high-level overflow.'*

4.3. It should be noted the OSWDS takes a precautionary approach to the assessment of additional runoff created by the Customer HV Compound. It assumed the whole compound area would be an impermeable surface when traditionally the areas around the electrical equipment would be surfaced with stone chippings and considered a permeable surface with no effect on runoff rates or volumes

4.4. As a result of the omission of the BESS element from the Planning Scheme the impermeable area has reduced.

4.5. JBA undertook a sizing exercise to determine the required attenuation storage for the HV Compound area using the Source Control module in MicroDrainage.

- 4.6. Those calculations (at section 3.7.5 of the OSWDS JBA report) indicate that approximately 16.3m³ of depression storage volume would be provided in the two swale features to capture the ‘first flush’ of rainfall. Flows in excess of the 16.3m³ will be converted into very shallow sheet spilling over the edge of a dropped kerb to act as a high-level overflow.
- 4.7. The use of the swale and level spreaders will disconnect formal drainage from the local watercourses, intercept and dissipate the surface water runoff generated by the DNO/Customer HV Compound and turn it into a sheet flow to mimic natural processes. The use of above ground SuDS will also provide ecological and amenity benefits. The strategy devised by JBA Consulting remains unchanged and is a proportionate and sustainable solution to the management of runoff from the DNO/Customer HV Compound. For ease of reference the relevant plan is included at **Appendix 3** of this Addendum.

Floodplain Storage Volume

- 4.8. As identified by third parties, any buildings/structures (e.g. small transformers) within areas of the site which may flood will result in a loss of flood storage volume which, unless compensated for, could result in an increase in flood risk elsewhere.
- 4.9. Accordingly, the following paragraphs assess the implications of these small structures within the areas of the site which may be susceptible to flooding.
- 4.10. An inspection of the plan at **Appendix 2** identifies that there are 6 transformers, a monitoring cabin, switchgear station, and DNO Substation, which will be within the area subject to flooding, and which therefore could potentially displace floodwater (and increase flood risk elsewhere).
- 4.11. Each transformer has a ‘footprint’ of approximately 14.8m², the monitoring cabin approximately 28.0m², and switchgear station approximately 80.6m². The electrical plant foundations within the DNO Substation have a cumulative ‘footprint’ of approximately 110m². **Table 1** below provides an estimate of the depths of flood water that could potentially be displaced at these locations and thus enables the total volume of potentially displaced flood waters to be calculated.

Table 1: Estimate Total Volume of Displaced Flood Water

Control Equipment	Approx Footprint (m ²)	1 in 100 year +35% Climate Change Modelled Flood Depth (m)	Flood Volume Displaced (m ³)
Transformer A	14.8	0.400	5.92
Transformer B	14.8	0.750	11.10
Transformer C	14.8	0.135	2.00
Transformer D	14.8	0.595	8.81
Transformer E	14.8	0.575	8.51
Transformer F	14.8	0.585	8.66
Monitoring Cabin	28.0	0.100	2.80
Switchgear Station	80.6	0.060	4.84
DNO Substation	110.0	0.080	8.80
Total			61.43

- 4.12. The proposed control equipment could therefore result in a total loss of flood volume of approximately 61.4m³.

- 4.13. Approximately 74.5 Ha (745,205m²) of the overall application site is affected by the 1 in 100 year + 35% climate change flood event. If 61.4m³ of volume is spread over this area the change in flood depth would be negligible (0.08mm). Accordingly, when compared with the overall volume of flood water which is accommodated within the application site during the 1 in 100 year + 35% climate change flood event this displaced volume will not realistically impact on flood risk elsewhere. Neither the EA, nor the LLFA, (nor indeed the highly experienced JBA Consulting) has suggested that there is or should be a requirement for provision of compensatory flood storage. The absence of any such suggestion reflects the negligible impact identified above which is not a material consideration. In short, the development will not result in an identifiable increase in flood risk elsewhere.

Flood Flow Routes

- 4.14. As indicated above Third Parties have also suggested that the security fencing may “interfere” with flood flows – i.e. the fencing will trap debris and cause flood water to “back up” – in particular reference has been made to “stubble” being washed off fields and collecting against existing hedges and fencing and blocking any flood flows.
- 4.15. The fields which are to be used for the solar farm will, of course, no longer be used for cereal growing which could create stubble. Thus, to the extent this is an existing problem it would be reduced. The Environment Agency recognises the possibility of debris collecting on fences and recommends that any fencing in a floodplain should have a minimum mesh size of 100mm to mitigate this potential effect. A condition requiring the minimum mesh size of any fencing to be 100mm will therefore address this concern.
- 4.16. Furthermore, unlike arable agricultural land, which may only be occasionally “inspected”, solar farms are subject to regular “in person” inspections and continuous CCTV surveillance. Such inspections and surveillance will readily identify any such issues and allow for debris removal on a more regular basis than for many agricultural uses.

Construction Activities

- 4.17. Third Parties express concerns that flood risk in the area surrounding the site may increase during the construction phase of the project. This concern may readily be addressed by a requirement for a “Construction Management Plan” (which includes flood prevention measures and temporary construction phase surface water management measures) to be submitted and approved prior to development commencing. A CMP would, in any event, be a normal requirement for a construction project of this scale.
- 4.18. Concerns have also been raised by the Council regarding the potential impacts of any “bunds” created by construction activities (which the original Construction Management Plan suggested could be up to 3m high). These bunds were considered necessary to accommodate topsoil stripped from the access tracks and HV compound area etc. There is however an area of the site (immediately to the south east of the HV compound area) which is outside of the modelled flood extents, and which is shown on Drawing No. S714/07 Rev A (**Appendix 2**) which can be used for this excavated topsoil. If this material is spread evenly over this area, it will raise the existing ground level by no more than 300mm. This will avoid the need for 3m high bunds, and, as Ms Walters explains, will address the concerns expressed by the Council regarding the creation of such bunds.

Additional Matters

- 4.19. The consultation response from the Environment Agency raises a concern about the footpath diversion (which is in fact the creation of a permissive path along the eastern boundary of the site) and states that it may refuse an “Environmental Permit” for any works necessary to provide this [sic] diversion.

- 4.20. The objection appears to be based on the fact that, for a very short length (no more than around 20m), the security fencing will be 7m from the top of the bank of the River Tiese (rather than the required 8m). I understand that the LPA is content that the fence line (and the adjacent proposed hedge planting) can be adjusted so that there is a clear 8m buffer alongside the river which therefore addresses that concern.

5. THE SEQUENTIAL AND EXCEPTION TESTS

The Sequential Test

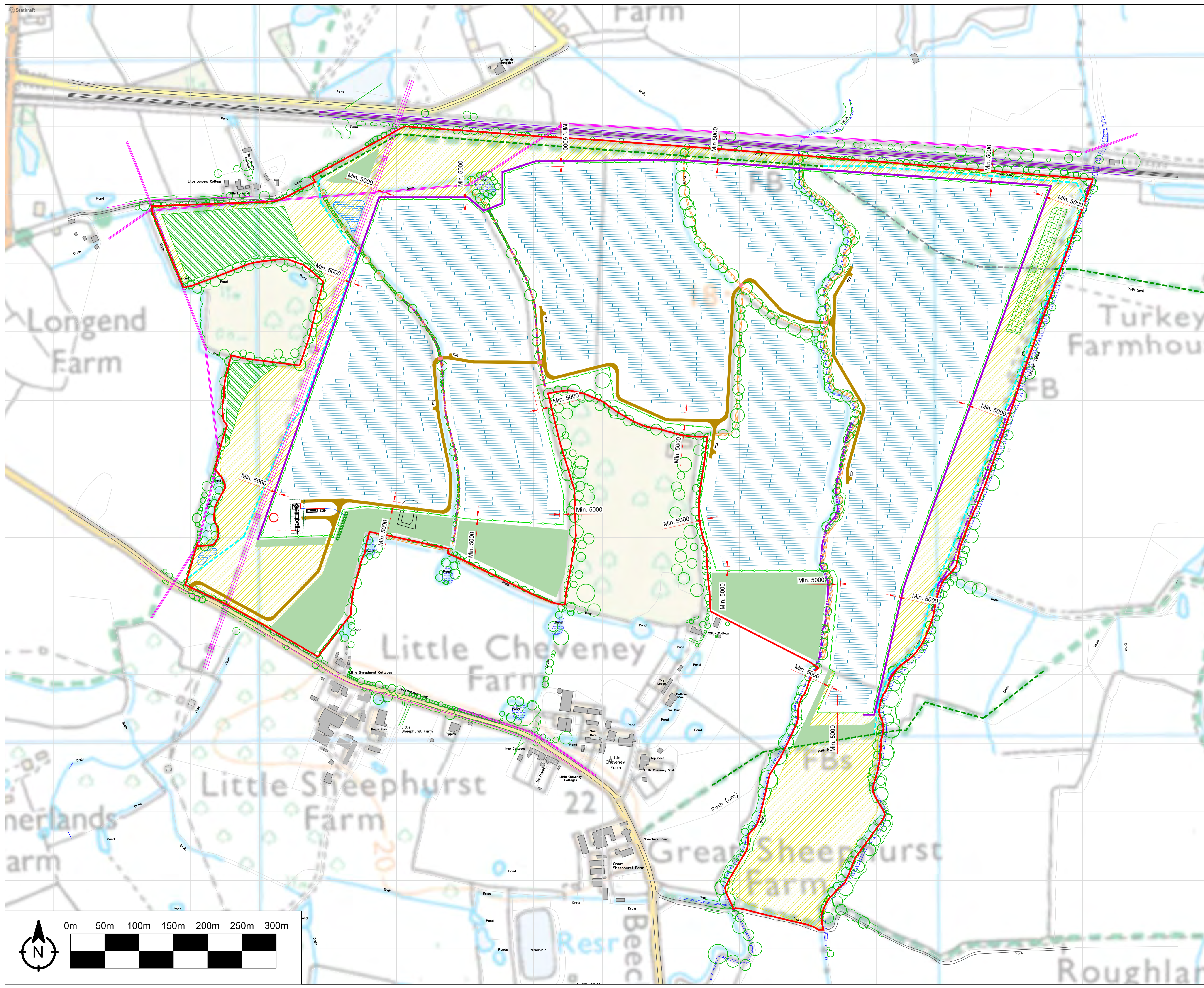
- 5.1. The updated Sequential Analysis Study produced by Chris Cox of Pegasus Group has been undertaken which identifies 9 possible alternative sites for such a solar farm.
- 5.2. As can be seen from the Flood Risk summary table at **Appendix 4** of this Addendum, three of these sites (sites 1, 7, and 9) are at a lower risk of flooding from fluvial flooding (but are at a broadly similar risk of surface water flooding). However, Mr Cox discounts these three sites for technical and suitability reasons, and, accordingly, they do not therefore provide deliverable alternatives. He concludes that there are no reasonably available sites that could accommodate the proposed development, or indeed a similar development.
- 5.3. On this basis it is considered that the Sequential Test is satisfied.

The Exception Test

- 5.4. By providing green energy for export to the National Grid the development would provide wider sustainability benefits to the community that outweigh the flood risk.
- 5.5. The JBA Consulting Flood Risk Assessment, together with this Addendum, demonstrates that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere.
- 5.6. On this basis the Exception Test is satisfied.

6. CONCLUSIONS

- 6.1. This Addendum is provided to supplement the Flood Risk Assessment and Outline Drainage Strategy details produced by JBA Consulting to support the changes to the planning application which are now subject to this appeal. The purpose of this Addendum is to respond to third party concerns raised during the processing of the planning application and in response to the appeal. It provides sufficient information to demonstrate that the amendments which have been made to the scheme have no adverse flood risk implications, but to the contrary, the amendments to the site are beneficial in flood risk terms.
- 6.2. Neither the Environment Agency nor the LLFA objected to the original scheme on flood risk grounds and the scheme, as now amended, represents a flood risk betterment when compared to the original scheme as a result of the relocation of the HV Compound to a lower flood risk area.



SUMMARY NOTES

1. All dimensions are in 'mm' unless otherwise indicated.
2. Any deviations to be recorded and communicated to Statkraft.
3. A site visit conducted 06/09/2022 showed no presence of the banked area.

COORDINATES

COORDINATE SYSTEM (CRS)	OSGB1936.NationalGrid
COORDINATE	51.171684, 0.460796

SYSTEM SUMMARY

LAND OWNERSHIP AREA (GROSS)	76.496 ha
FENCED PV AREA	48.436 ha
INVERTER TYPE	String
TILT ANGLE	20°
AZIMUTH ANGLE	0
PITCH	7.5 m
STRUCTURE TYPE	Fixed Tilt
TABLE CONFIGURATION	2P
MAX TABLE HEIGHT	< 2.5 m

LEGEND

- Railway
- Overhead Line (OHL)
- Connection Route
- Perimeter Fence
- Site Boundary
- Proposed drainage pipe
- Banked area (removed)
- Public Footpath
- Public Footpath (Removed)
- Public Footpath (Permissive)
- Proposed Hedgerow (2m wide)
- Gapping Up Hedgerow
- Proposed Meadow Mix
- Proposed Woodland Screening
- Proposed Orchard
- Proposed Biodiversity Woodland
- Maintenance Road
- Ditch
- Water body
- Pond Proposal
- Trees
- Transformer Stations
- PV Structure 2P30
- PV Structure 2P15
- Point of Connection (POC)
- Ditch Crossing
- Gate
- Proposed Drainage Swale

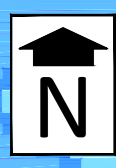
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M	24/11/2022	PV Area Revised	AM	PP
L	17/11/2022	PV Area Revised	AM	AP
P	31/03/2023	Fence & HV Compound Revised	AM	AP
O	23/02/2023	Layout Updates	MB	AM
N	23/01/2023	Inverter Quantity Revised	AM	AP
REV	DATE	DETAIL	DRAWN	APPROVER
100 General PV Layout			SCALE 1:2500 A1	
SCUKX-SHEEP-000 100 (P)			SHEET 1 of 1	

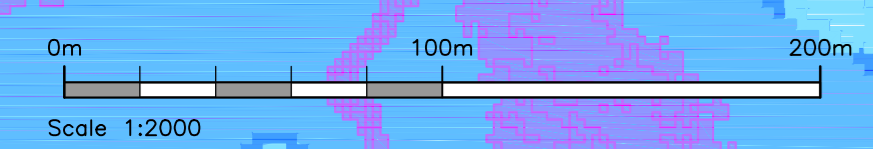
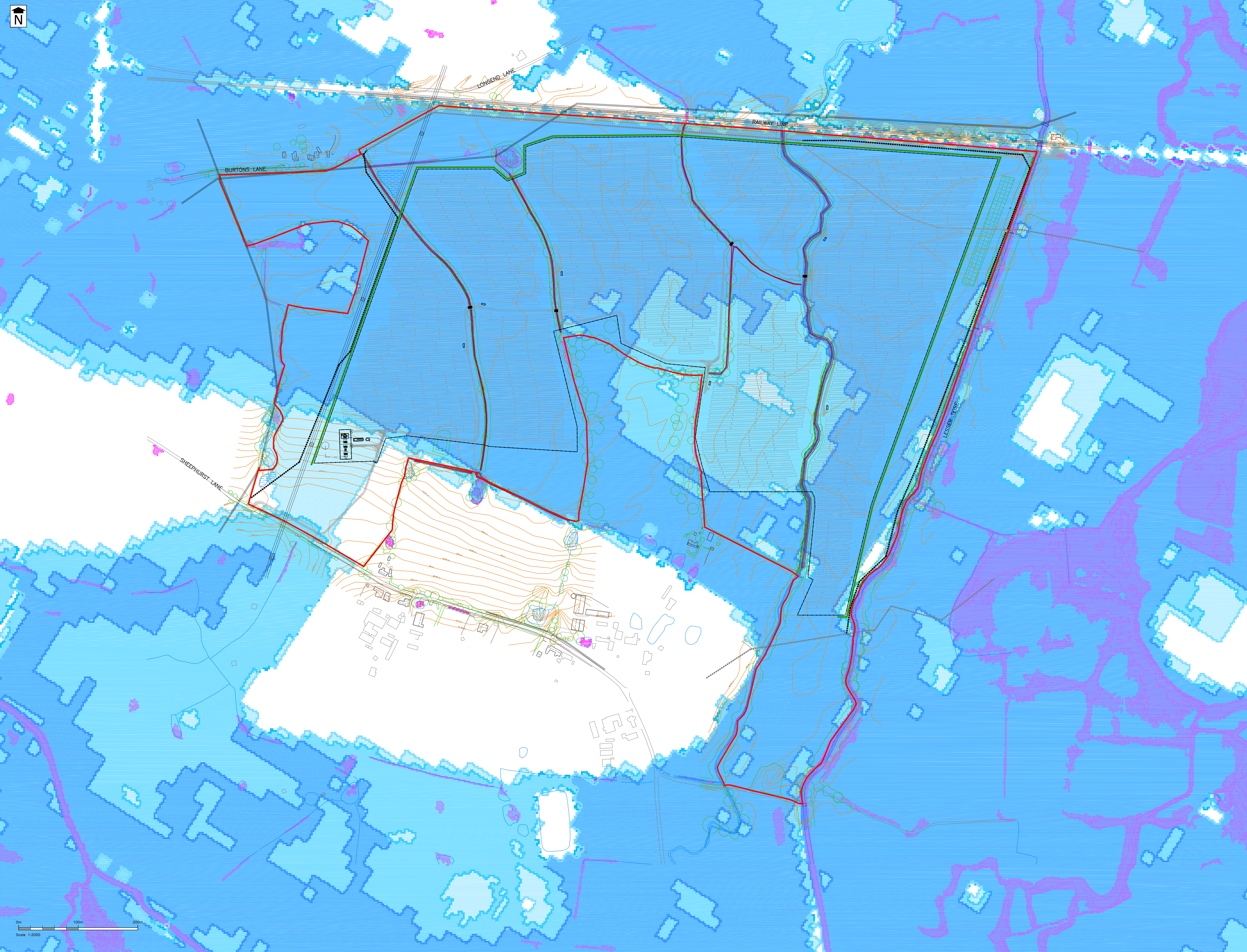


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For Planning
This drawing is produced for the purposes of supporting a planning application and should not be relied upon for tender, pricing, or construction purposes.

- KEY**
- Indicative Site Boundary (Appeal Scheme)
 - Risk of Flooding from Surface Water 1 in 100 year Return Period Extent
- Modelled Fluvial Flood Extents**
- 20 Year Return Period
 - 100 Year Return Period
 - 100 Year Return Period + 35% Climate Change

- NOTES**
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Rev	Date	Description	Drawn	Check
#	07/12/23	First Issue	BF	GE
A	14/12/23	Text Correction	BF	GE

Status

FOR PLANNING

Client

Statkraft UK LTD

Project

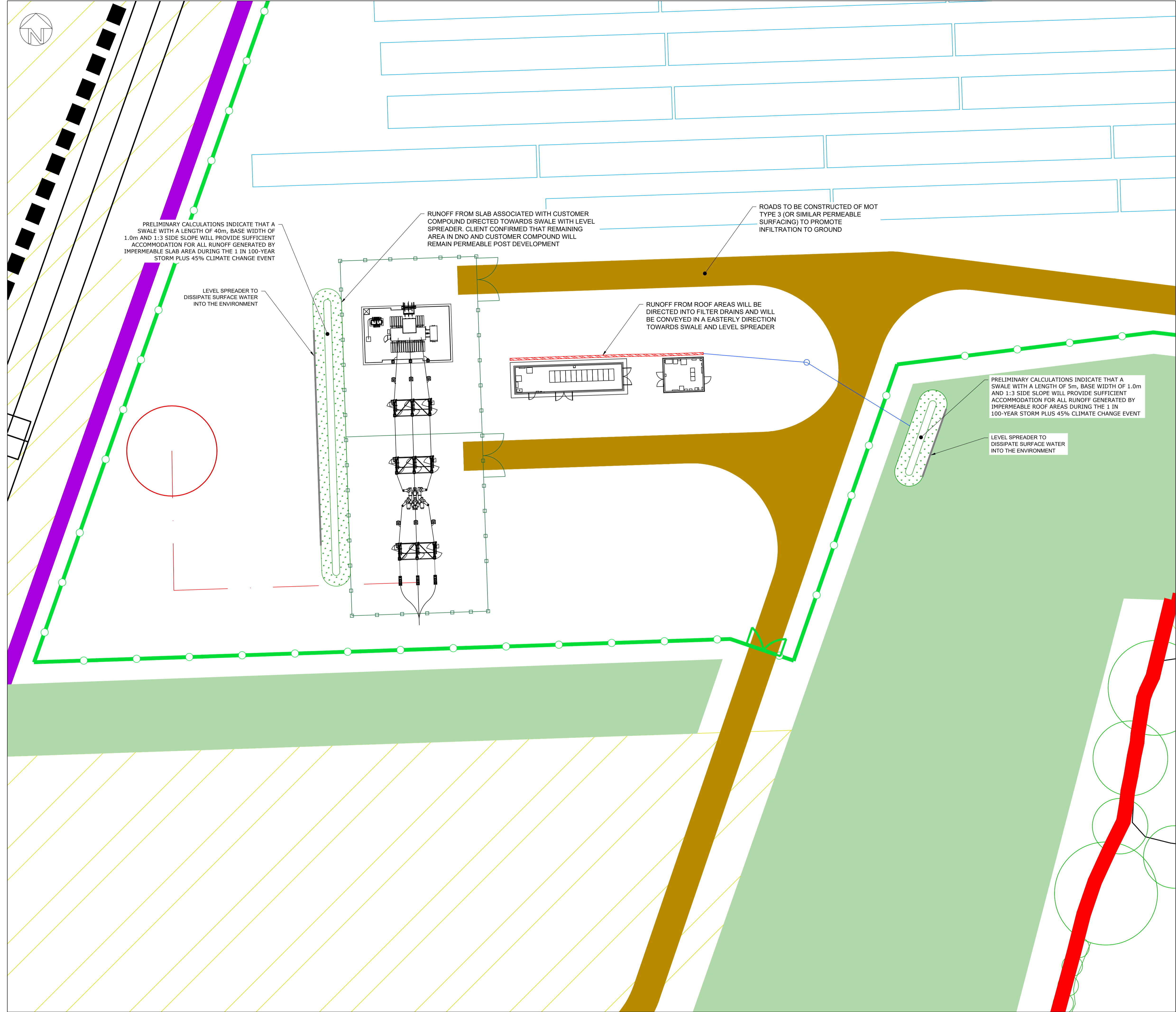
Sheepwash Solar Farm

Drawing Title

**Environment Agency
Modelled Fluvial and
Pluvial Flood Extents**

Drawing No. **S714/07** Rev A

Date: December 2023 Scale: 1:2000 @ AD
E-Mail: bfox@pfapl.com



PRELIMINARY CALCULATIONS INDICATE THAT A SWALE WITH A LENGTH OF 40m, BASE WIDTH OF 1.0m AND 1:3 SIDE SLOPE WILL PROVIDE SUFFICIENT ACCOMMODATION FOR ALL RUNOFF GENERATED BY IMPERMEABLE SLAB AREA DURING THE 1 IN 100-YEAR STORM PLUS 45% CLIMATE CHANGE EVENT

LEVEL SPREADER TO DISSIPATE SURFACE WATER INTO THE ENVIRONMENT

RUNOFF FROM SLAB ASSOCIATED WITH CUSTOMER COMPOUND DIRECTED TOWARDS SWALE WITH LEVEL SPREADER. CLIENT CONFIRMED THAT REMAINING AREA IN DNO AND CUSTOMER COMPOUND WILL REMAIN PERMEABLE POST DEVELOPMENT

ROADS TO BE CONSTRUCTED OF MOT TYPE 3 (OR SIMILAR PERMEABLE SURFACING) TO PROMOTE INFILTRATION TO GROUND

RUNOFF FROM ROOF AREAS WILL BE DIRECTED INTO FILTER DRAINS AND WILL BE CONVEYED IN A EASTERLY DIRECTION TOWARDS SWALE AND LEVEL SPREADER

PRELIMINARY CALCULATIONS INDICATE THAT A SWALE WITH A LENGTH OF 5m, BASE WIDTH OF 1.0m AND 1:3 SIDE SLOPE WILL PROVIDE SUFFICIENT ACCOMMODATION FOR ALL RUNOFF GENERATED BY IMPERMEABLE ROOF AREAS DURING THE 1 IN 100-YEAR STORM PLUS 45% CLIMATE CHANGE EVENT

LEVEL SPREADER TO DISSIPATE SURFACE WATER INTO THE ENVIRONMENT

1	Flood Risk	Vehicle/Pedestrian collision	Potential disturbance to protected species
2	Unknown existing services	Members of the public accessing site	Effects on drainage from tree roots and leaf litter
3	Ground Conditions possible instability, contamination and groundwater ingress		Pollution of surface water sewers/watercourses
4	Risk of UXOs on site		Fuel spillage
5	Working at height		
6	Working near water		
7	Confined spaces, asphyxiation		
No.	Construction Risk	Maintenance Risk	Demolition Risk

In addition to the hazards/risks normally associated with the types of work detailed on this drawing take note of the above.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

- Drawing Notes**
- All dimensions shown are in millimetres unless otherwise stated and levels in metres to Ordnance Datum.
 - Do not scale from this drawing. All dimensions must be checked/verified on site.
 - Any discrepancies noted on site are to be reported to the engineer immediately.
 - This drawing is based on the revised site layout titled SCUKX-SHEEP-000-100M Annotated DEC v1.1 External Release by Statkraft provided to JBA on 14/02/2023.
 - Surface water drainage strategy has been developed based on levels detailed within the topographic survey and watercourse survey. Details provided in drawing reference Sheepwash_UAV-TOPO_Linework_OSGB36_Rev1_20211008 and Sheepwash_DITCH-GROUND-SURVEY_Linework_OSGB36_Rev1_20211008.
 - No deep rooted trees to be planted in vicinity of any underground drainage elements.
 - No detailed modelling of the drainage system has been carried out at this stage and therefore the drainage layout should be read as indicative only.
 - Details of underground services provided within Landmark Information Group Utilities Report. However, final detailed survey of existing infrastructure on site should be undertaken prior to the detailed design stage. Presence and location of any other services is unknown at this stage.
 - It is proposed that runoff from the DNO/Customer HV Compound area will dissipate surface water into the environment.
 - The proposed surface water drainage scheme will not cross third-party land.
 - The electronic model of this drawing is not to be used for setting out.
 - The drawing is for approvals and consultations with third party only - not for construction.
 - All cover levels assumed pending external design levels by others.

Comments					
Rev.:	Date	Drawn	Designed	Checked	Approved
Client Approval					
A - Approved					
B - Approved with Revisions					
C - Do Not Use					

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Project: **Marden SWDS**

Title: **Surface Water Drainage Strategy DNO/Customer HV Compound for**

Client: **Origin Power Services Ltd**

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Drawn:	M. Morrison	23/03/2023	Designed:	M. Morrison	23/03/2023
Checked:	R. Dobson	23/03/2023	Approved:	R. Dobson	23/03/2023
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Drawing Number:	GGO-JBAU-XX-DR-D-0001	Status:	A1	Revision:	C02
		Sheet Size:	A1		

SHEEPWASH SOLAR FARM

FLOOD RISK SUMMARY TABLE

1. Introduction

1.1. The purpose of this Table is to compare the Flood Hazards for the 9 sites identified by Pegasus Group in the updated 'Sequential Analysis Study' to inform the application of the flood risk Sequential Test (paragraph 162 of the NPPF).

Table 1: Flood Risk Summary

Site	Watercourse Flooding			Surface Water Flooding				Groundwater Flood Risk					Sewer Flooding	Reservoir Flooding	
	Flood Zone 3	Flood Zone 2	Flood Zone 1	High Risk	Medium Risk	Low Risk	Very Low Risk	No Risk	Levels are at least 5m bgl	Levels are between 0.5m & 5m bgl	Levels are between 0.025m & 0.5m bgl	Levels are either at or very near (within 0.025m of) the ground surface		Dry & Wet Day	No Risk
Original site boundary	YES (Significant)	YES (Minor)	YES (Negligible)	YES (Negligible)	YES (Negligible)	YES (Major)	YES (Major)	YES (Entire)	NO (None)	NO (None)	NO (None)	NO (None)	Assumed Low*	YES (Entire)	NO (None)
1	YES (Negligible)	NO (None)	YES (Significant)	YES (Negligible)	YES (Negligible)	YES (Minor)	YES (Significant)	YES (Entire)	NO (None)	NO (None)	NO (None)	NO (None)	Assumed Low	YES (Minor)	YES (Significant)
2	YES (Significant)	YES (Minor)	YES (Minor)	YES (Major)	YES (Minor)	YES (Minor)	YES (Major)	YES (Entire)	NO (None)	NO (None)	NO (None)	NO (None)	Assumed Low	YES (Significant)	YES (Minor)
3	YES (Significant)	YES (Minor)	YES (Minor)	YES (Negligible)	YES (Negligible)	YES (Minor)	YES (Significant)	YES (Entire)	NO (None)	NO (None)	NO (None)	NO (None)	Assumed Low	YES (Significant)	YES (Negligible)
4	YES (Significant)	YES (Minor)	NO (None)	YES (Negligible)	YES (Negligible)	YES (Negligible)	YES (Significant)	YES (Entire)	NO (None)	NO (None)	NO (None)	NO (None)	Assumed Low	YES (Entire)	NO (None)
5	YES (Major)	YES (Minor)	YES (Minor)	YES (Negligible)	YES (Negligible)	YES (Minor)	YES (Significant)	YES (Entire)	NO (None)	NO (None)	NO (None)	NO (None)	Assumed Low	YES (Significant)	YES (Minor)
6	YES (Major)	YES (Minor)	YES (Major)	YES (Negligible)	YES (Negligible)	YES (Minor)	YES (Significant)	YES (Entire)	NO (None)	NO (None)	NO (None)	NO (None)	Assumed Low	YES (Significant)	YES (Minor)
7	NO (None)	YES (Minor)	YES (Significant)	YES (Minor)	YES (Negligible)	YES (Minor)	YES (Major)	YES (Entire)	NO (None)	NO (None)	NO (None)	NO (None)	Assumed Low	NO (None)	YES (Entire)
8	YES (Significant)	YES (Minor)	YES (Negligible)	YES (Minor)	YES (Minor)	YES (Major)	YES (Major)	YES (Entire)	NO (None)	NO (None)	NO (None)	NO (None)	Assumed Low	YES (Significant)	YES (Negligible)
9	NO (None)	NO (None)	YES (Entire)	YES (Negligible)	YES (Negligible)	YES (Minor)	YES (Major)	YES (Significant)	NO (None)	YES (Negligible)	NO (None)	NO (None)	Assumed Low	YES (Minor)	YES (Significant)

Notes:

- Entire – Whole site affected
- Significant – Very large % of site affected.
- Major – Large % of site affected.
- Minor – Small % of site affected
- Negligible – Very small % of site affected
- None – No flood risk present

Assumed Low – sewer flooding typically occurs in urban areas. The Site and Potential Sites are located in rural areas and it is unlikely to be a significant flood hazard. The postcode information contained in Table 7-2 of the SFRA is not detailed enough to inform this assessment. The levels of flooding incidences are limited in Maidstone Borough.

*from FRA

Reservoir flooding includes dry day and wet day extents. The risk of reservoir flooding is very unlikely.



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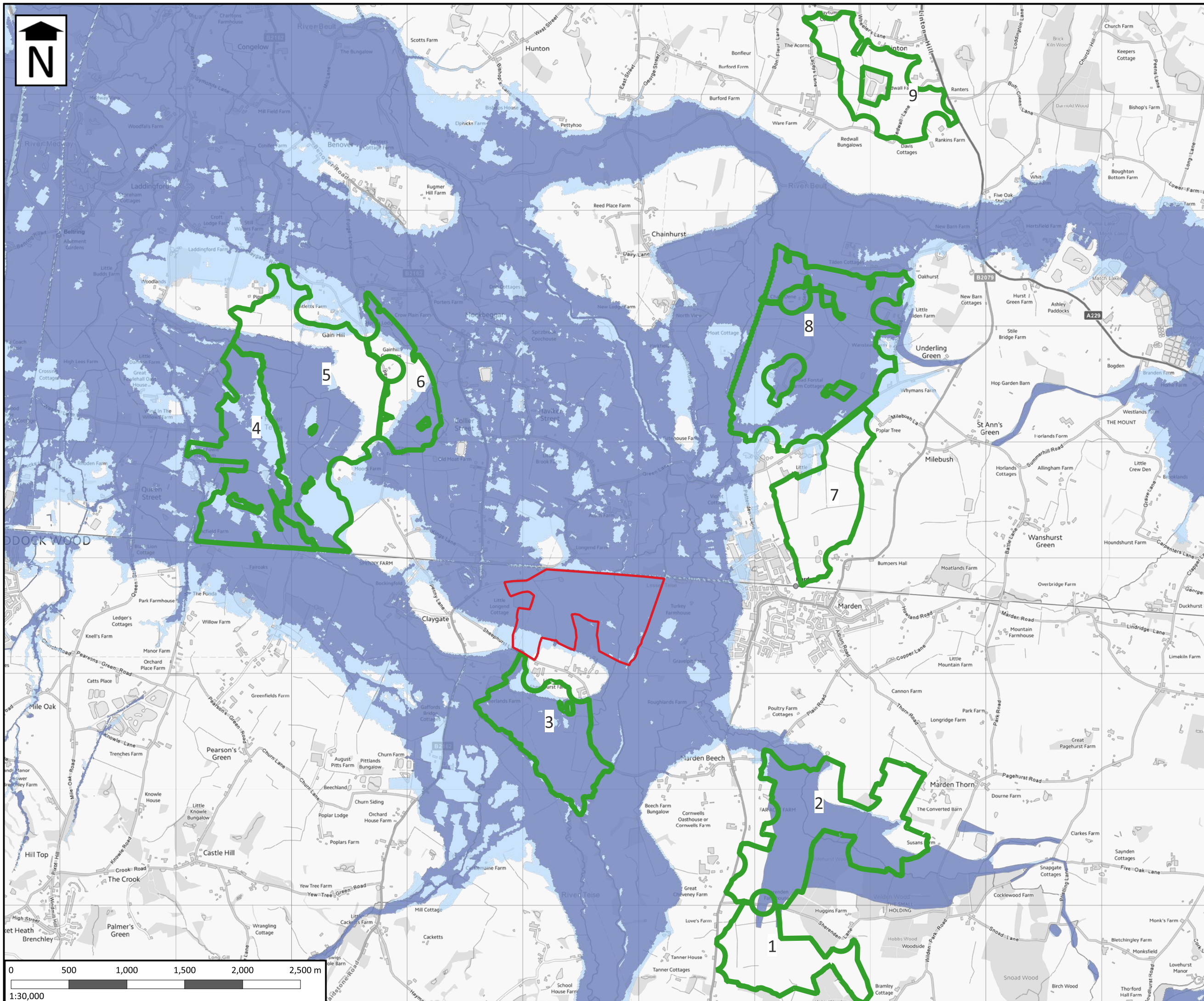
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KEY

- Site Boundary (Appeal Scheme)
- Potential Site
- Flood Zone 2
- Flood Zone 3

NOTES

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2. Drawing should be read in conjunction with Sequential Analysis Study produced by Pegasus Group (Ref: P21-1517).
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1	29/11/23	First issue.	SJC	BF

Status **FOR PLANNING**

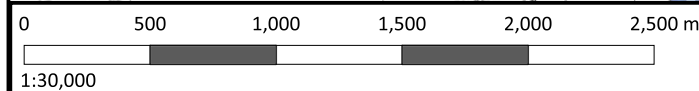
Client **Statkraft UK LTD**

Project **Sheepwash Solar Farm**

Drawing Title **Flood Zones**

Drawing No. **S714/02** REV

Date: November 2023 Scale: As Shown
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KEY

— Site Boundary (Appeal Scheme)

— Potential Site

Risk of Flooding from Surface Water

High Risk Extent (1in30 RP)

Medium Risk Extent (1in100 RP)

Low Risk Extent (1in1000 RP)

NOTES

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1	29/11/23	First Issue.	SJC	BF

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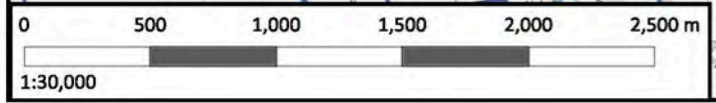
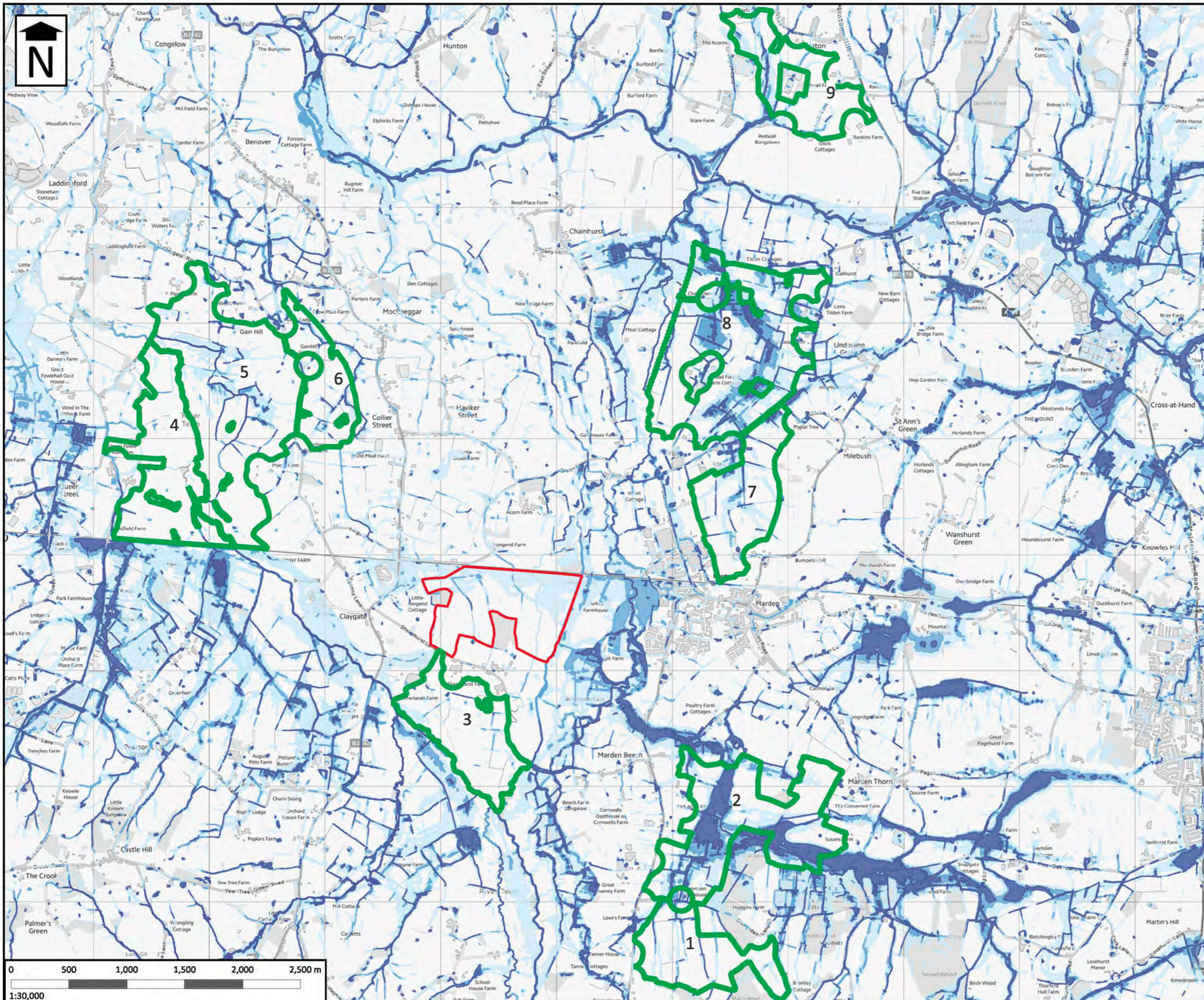
Client **Statkraft UK LTD**

Project **Sheepwash Solar Farm**

Drawing Title **Risk of Flooding from Surface Water**

Drawing No. **S714/04** REV

Date: November 2023 Scale: As Shown
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Appendix 2 – Flood Sequential Test Statement

Flood Sequential Test Statement

Project name: Sheepwash Solar Farm
Author: Chris Cox
Date: 13 December 2023
Project number: P22-2992

Introduction

Flooding is not a matter raised as a concern by the Council, nor subject to a reason for refusal. Both Kent County Council and the Environment Agency have no objection in terms of flooding.

Nevertheless, a number of third party comments raise concerns and objections around matters relating to flooding. At the Case Management Conference, the Inspector requested that the Appellant provide information to address these concerns. An Addendum Flood Risk Assessment is therefore being submitted, together with this note that has been prepared to provide further clarity with regard to flood risk matters in the context of site selection in particular.

The solar farm is categorised as 'essential infrastructure' by the NPPF and can be acceptably located in flood areas (Flood Zones 2 and 3) and poses limited risk compared to other development, such as residential development.

The planning application was supported by a Flood Risk Assessment that established the flood risk of the site and the surrounding area and considered the sequential and exception tests. The planning application was also supported by a Sequential Analysis Study that sought to consider whether reasonably available alternative sites appropriate for the proposed development existed but concluded that there were none. The appeal site therefore satisfied the sequential test. In the context of the conclusions reached in the Sequential Analysis Study (which meant there were no potential alternative sites to assess from a flood risk perspective) the Flood Risk Assessment itself focused instead on the sequential approach to locating development within the appeal site itself. For example, the layout and siting of the proposal has been informed by the flood risk maps and Flood Risk Assessment, with the HV compound being located in an area of lower risk.

This statement is provided both for completeness and clarity to explain the application of the sequential test here, and to provide an update in light of the search area sensitivity test prepared for a wider search area in response to the Council's Reason for Refusal relating to the use of Best and Most Versatile agricultural land.

Planning Policy

National Planning Policy Framework

Paragraph 162 confirms the aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. Development should not be allocated or permitted if there are "*reasonably available sites appropriate for the proposed development*" in areas with a lower risk of flooding.

Reference:

The same paragraph confirms the strategic flood risk assessment will provide the basis for applying this test.

Paragraph 163 says that if it is not possible for development to be located in areas with a lower risk of flooding (taking into account wider sustainable development objectives), the exception test may have to be applied.

Planning Practice Guidance

Guidance is provided (Paragraph: O28 Reference ID: 7-O28-20220825) on what constitutes a “reasonably available” site:

“Reasonably available sites’ are those in a suitable location for the type of development with a reasonable prospect that the site is available to be developed at the point in time envisaged for the development.

These could include a series of smaller sites and/or part of a larger site if these would be capable of accommodating the proposed development. Such lower-risk sites do not need to be owned by the applicant to be considered ‘reasonably available’.

The absence of a 5-year land supply is not a relevant consideration for the sequential test for individual applications” (our emphasis).

Maidstone Level 1 Strategic Flood Risk Assessment (2020)

The SFRA, prepared by JBA Consulting, confirms that local circumstances must be used to define the appropriate area of the Sequential Test and may ‘relate to the catchment area for the type of development being proposed’.

The SFRA doesn’t define ‘reasonably available’ sites, but page 27 says they may include:

- Site allocations in Local Plans
- Site with Planning Permission but not yet built out
- Strategic Housing and Economic Land Availability Assessments (SHELAAs)/five-year land supply/ annual monitoring reports
- Locally listed sites for sale.

The Sequential Test

Section 3.4.1 on page 7 of the Flood Risk Assessment supporting the planning application, prepared by JBA Consulting states:

“When planning a development, a sequential approach should be applied to identify suitable sites which are at minimal risk from fluvial flooding, avoiding Flood Zones 2 and 3 where possible. If no suitable areas can be identified in Flood Zone 1 then sites with the lowest flood risk should be considered next. If development is necessary within a medium or high risk zone an exception test may be required to demonstrate the need for the development in that location and plans to mitigate the flood risk.

The site is located within Flood Zone 2 and 3 therefore the risk of flooding to the site is considered to be 'Medium to High'. Table 3 of the NPPF suggests that development classified as 'Essential Infrastructure' is appropriate within Flood Zone 2 and is considered appropriate in Flood Zone 3 subject to passing the Exception Test".

Page 24 states:

"It is recommended that a sequential approach to site layout is adopted whereby the most vulnerable elements of the proposal (such as the compound, the battery storage units and the substations) are located within the lower flood risk areas, upon land in the south west of the site".

This advice has been followed and the proposed HV compound is situated toward the south west of the site, away from the areas of greater predicted flood depths and outside the modelled extents of the 1 in 100 year flood event.

Reasonably Available Alternative Sites?

The appellant has considered whether there are any reasonable available alternative sites. In doing so, some flexibility has been considered, but when considering the level of flexibility that is appropriate in this case it is highly relevant that the applicant benefits from a grid offer that would enable them to connect the proposed development to the grid without delay. This is very unusual given grid capacity constraints and availability in the UK.

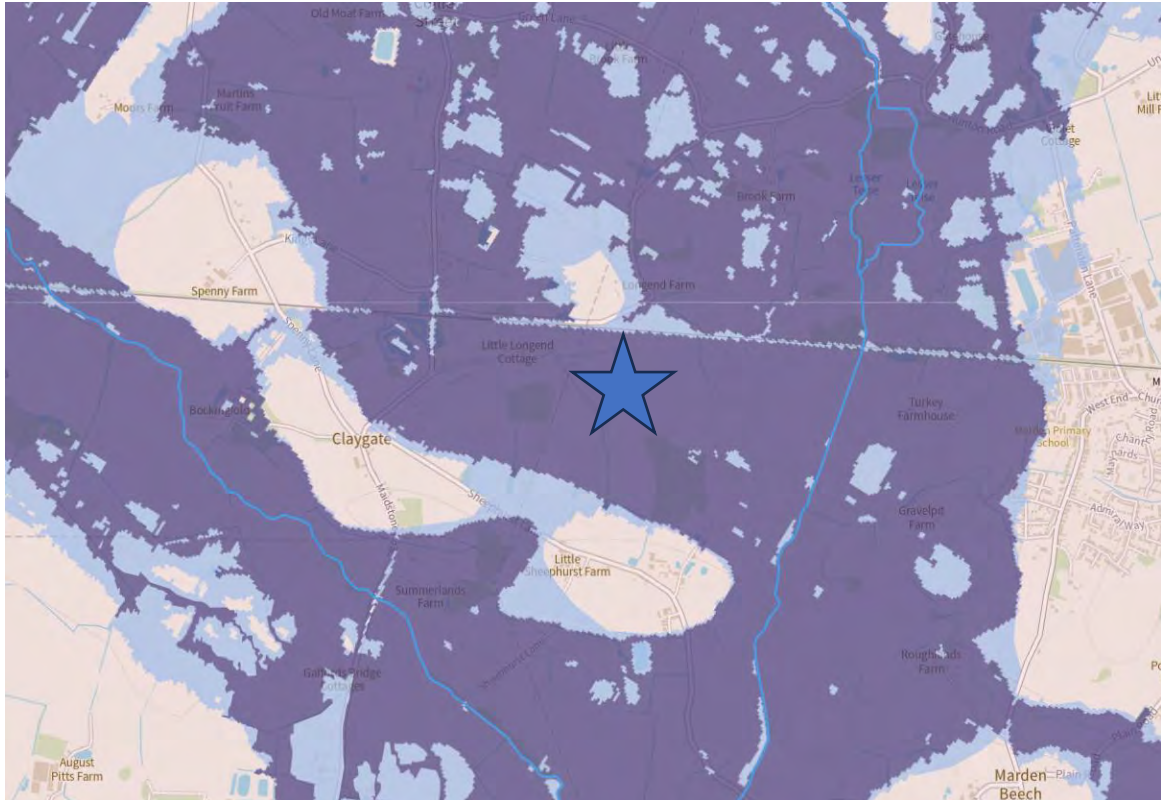
The guidance provided in EN-3 regarding a grid connection being a valid locational factor for developers, and the above mentioned PPG guidance regarding the point in time of being developed are highly relevant here. Thus, having regard to the guidance in the SFRA referred to above regarding determining an area of search that is relevant to the proposed development, the search area used in the Sequential Analysis Study and its Addendum relating to an enlarged area of search is relevant and appropriate for the purpose of the flood sequential test.

With regard to the question of whether any alternative sites exist:

- The SFRA does not consider locations for solar farms, or any renewable energy projects;
- The Local Plan does not allocate any sites for solar farms, or any renewable energy projects;
- The Local Plan does not contain policies that identify suitable areas or areas of search for solar farms or any renewable energy projects;
- The appellant is not aware of any sites with planning permission that could accommodate the proposed development that would be available;

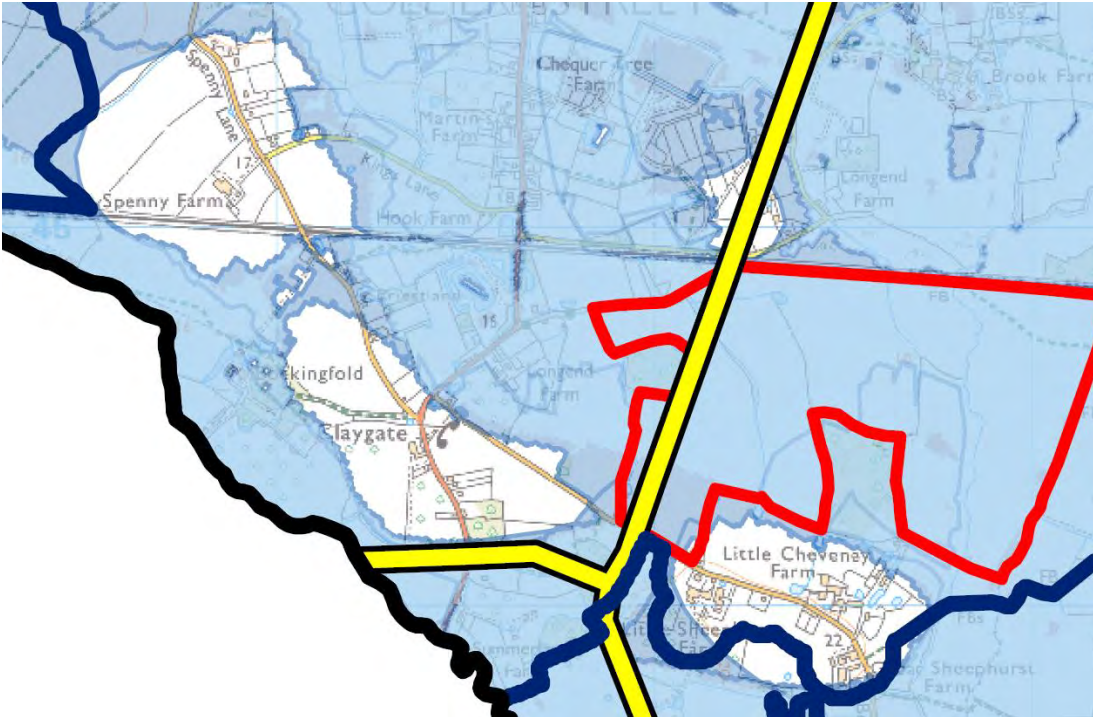
It should be noted that all of the above points are true at Borough wide level.

In terms of the area immediately surrounding the appeal site, the below extract from the Environment Agency Flood Map demonstrates that the majority of the land around the appeal site (identified by the blue star) is in flood zone 3 (dark blue). The site includes land falling in both zones 2 (light blue) and 3. The areas outside zones 2 and 3 are relatively small and, perhaps unsurprisingly, are areas that tend to accommodate residential (and other) development. As such, it is demonstrated that there is no land around the site that is of lower flood risk that forms a practical alternative to accommodate the proposal.



In summary, there are no reasonably available sites that could accommodate the proposed development, or indeed a similar development in the area immediately surrounding the grid connection point and appeal site.

The image above does highlight three broad areas close to the appeal site that are not in a flood zone. However, the extract from Appendix 2 of the updated Sequential Analysis Study below demonstrates that these areas are not large enough to accommodate the proposed development and are further constrained by roads, the railway line, dwellings, Public Rights of Way and also listed buildings near Little Cheveney Farm. They are therefore not suitable alternatives capable of accommodating the proposed development.



Crucially, the appellant has a grid offer in this location that can be implemented quickly. Even if a future grid connection could be available elsewhere along the electricity line, it is very likely that an agreed connection date could be 5 or more years into the future. As any other grid connection offer would not be deliverable in the same timeframe, having regard to the urgency of the need and to the above mentioned guidance in the PPG, it would not be appropriate or necessary to consider any other sites.

Notwithstanding, the updated Sequential Analysis Study has considered an enlarged area of search in direct response to criticism from the Council. This sensitivity exercise has identified 9 possible alternative sites for further assessment. Of these 9 sites reviewed, sites 1, 7 and 9 are predominantly located in Flood Zone 1. However, sites 1, 7 and 9 have all been discounted as not being available or suitable and the reasons supporting that conclusion are set out in that report. Thus they do not represent reasonably available alternatives for the purposes of the sequential flood test.

Exception Test

Table 3 of the NPPF confirms that development classified as ‘Essential Infrastructure’ is appropriate within Flood Zone 2 and is considered appropriate in Flood Zone 3 subject to passing the Exception Test.

To pass the exception test, it must be demonstrated that the proposed development will:

- *Provide wider sustainability benefits to the community that outweigh the flood risk; and*
- *That the development will be safe throughout its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall.*

The FRA demonstrates that the development will be safe throughout its lifetime without increasing flood risk elsewhere, thereby satisfying the second requirement of the exception test.

With regard to the first part of the test, the wider sustainability benefits (provision of renewable energy, addressing climate change and its consequences for future flooding and biodiversity net gain) far outweigh the flood risk. The exception test is therefore passed.

Conclusion

This statement demonstrates that both the sequential and exception tests are passed, having regard both to the evidence submitted with the application and appeal, and the further update provided in response to the Council's reason for refusal concerning use of best and most versatile agricultural land and the area of search employed. There are no "*reasonably available sites appropriate for the proposed development*", and the proposal will be safe and not increase flood risk elsewhere.



Appendix 3 – Updated Sequential Analysis Study

Planning Appeal for Proposed Solar Farm.

Addendum Note – Updated Sequential Analysis Study (2km study search area).

Sheepwash Solar Farm, Little Cheveney Farm, Marden, Kent.

On behalf of Statkraft UK Ltd.

Date: 8th December 2023 | Pegasus Ref: P22-2992

LPA Ref: Maidstone Borough Council 22/501335/FULL

Author: James Sutton



Document Management.

Version	Date	Author	Checked/ Approved by:	Reason revision for
V1	22 nd November	JS	CC	
V2	4 th December	JS	CC	Team comments
V3	8 th December	JS	CC	Further comments



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Appendices contents.

APPENDIX 1: 2KM SEQUENTIAL ANALYSIS UNCONSTRAINED AREAS PLAN

APPENDIX 2: FLOOD MAPPING FOR ALTERNATIVE SITES ASSESSED

APPENDIX 3: LAND REGISTRY DETAILS FOR ALTERNATIVE SITES 3, 5, 6 AND 8



1. INTRODUCTION

- 1.1. This addendum note has been prepared to supplement the previous Sequential Analysis Study (SAS) undertaken by Pegasus Group in April 2023 on behalf of Statkraft UK Ltd. It relates to a planning appeal for the following description of development on Land North of Little Cheveney Farm, Sheephurst Farm, Marden, Kent (the Development Proposal):

“Installation of a renewable energy led generating station comprising of ground-mounted PV solar arrays, associated electricity generating infrastructure and other ancillary equipment comprising of storage containers, access tracks, fencing, gates and CCTV together with the creation of woodland and biodiversity enhancements.”

- 1.2. The Development Proposal comprises of a solar PV farm with an installed generation capacity of up to 46.97MW.
- 1.3. The planning permission sought is for a temporary period 37 years, after which the development will be fully decommissioned and returned to agriculture.
- 1.4. The works include a connection adjacent to the Point of Connection (‘PoC’) at the 132kV overhead line which crosses the appeal site.
- 1.5. The Development Proposals were refused for five reasons, including the following;

“(1) The site includes a significant proportion of the best and most versatile agricultural land which has economic and other benefits that NPPF requires to be recognised. The proposal is also contrary to National Energy policies and Planning Practice Guidance and policy DM24 of the Maidstone Borough Local Plan 2017 which direct solar farms towards lower grade agricultural land. The proposed use of the best and most versatile agricultural land has not been adequately demonstrated to be necessary.”

- 1.6. Pegasus Group was previously instructed to provide an updated Sequential Analysis Study (SAS) to support a planning application and subsequent appeal made pursuant to s.78 of the Town and Country Planning Act 1990 against the refusal of planning application reference 22/501335/FULL.
- 1.7. The updated SAS was prepared in April 2023 with its overarching purpose to demonstrate that the use of agricultural land for solar farm development has been properly considered in relation to relevant planning policy and material considerations.



- 1.8. This addendum report should be read in conjunction with the SAS dated April 2023 as the information previously submitted remains valid and relevant. This addendum provides an update where appropriate to ensure the assessment remains current and a sensitivity test to assess an enlarged search or 'study area' in response to criticisms of the extent of the search area made in the Council's Statement of Case. This sensitivity test has been undertaken, despite 500m remaining the optimum and realistic maximum distance for a grid connection in this case. As explained in the submitted Grid Connection Assessment by Artios Energy, a distance beyond 500m will result in increased capital costs, distribution losses and inefficiencies as well as, most likely, the requirement for easements for access over third-party land. In addition, it is a fundamental necessity to be able to make a physical connection to the 132kVA overhead line via an existing pylon, so land around a pylon to accommodate the proposed switch gear station is required in addition to any site for arrays elsewhere.

- 1.9. Nevertheless, to address the Council's criticism, the Appellant has undertaken a further sensitivity analysis to understand the implications of significantly increasing the site search area to 2km either side of the 132kVA overhead line (resulting in the search area totalling a 4km corridor, 2km either side). The original assessment looked at 500m either side (1km total corridor), and therefore this addendum assesses an additional 1.5km beyond the initial 500m.



2. PLANNING POLICY UPDATE

- 2.1. The planning context provided in the Sequential Analysis Study (SAS) dated April 2023 is approximately 7 months old and subject to the updates below remains valid and therefore should be read in conjunction with this SAS addendum in relation to extending the search area to 2km in each direction of the existing 132kVA overhead line or point of connection.

National Planning Policy Framework ('NPPF') (September 2023)

- 2.2. There were minor changes to the National Planning Policy Framework (NPPF) in September 2023 under the section entitled 'Meeting the challenge of climate change, flooding and coastal change'.
- 2.3. The revisions are intended to make the planning process more flexible and therefore quicker and easier to increase wind farms producing renewable or low carbon energy. As such, whilst they relate to renewable energy policies, the changes are specifically in relation to wind energy as opposed to solar and are therefore not relevant to the Development Proposal at the Application Site.

The Development Plan

- 2.4. The Maidstone Borough Local Plan adopted 25th October 2017, remains unchanged since the previous SAS was submitted in April 2023 and therefore 'Policy DM24 Renewable and Low Carbon Energy Schemes' remains applicable to the Development Proposal.
- 2.5. To summarise, Policy DM24 does not prohibit the use of 'Best and Most Versatile Agricultural Land' (BMVAL) for renewable and low carbon energy generation and does not stipulate any need to demonstrate that the appeal site is the best, sequentially preferable or only site available. It neither refers to nor requires a sequential test to be applied.

National Planning Policy Statements (NPS)

Overarching National Policy Statement for Energy (EN-1)

- 2.6. NPS EN-1 was published in November 2023 and sets out national policy for nationally significant energy infrastructure and explains the urgent need for significant amounts of large-scale energy infrastructure in meeting government's energy objectives.



2.7. The primary purpose is to be applied to decisions for Nationally Significant Infrastructure Projects (“NSIP”), which the proposals subject to this application are not. Nevertheless, it is confirmed at paragraph 1.2.1 of EN-1 that this document can be a material consideration in the determination of planning applications that fall under the Town and Country Planning Act 1990 (as amended).

National Policy Statement for Renewable Energy Infrastructure (EN-3)

2.8. NPS EN-3 was published in November 2023 and sets out the national policy for nationally significant renewable energy projects in the UK.

2.9. The above recently published NPS’s do not make substantive changes to the previous versions with regard to factors influencing site selection and design for solar development.

2.10. Paragraph 1.2.1 of EN-1 confirms that any relevant technology specific NPSs, may be a material consideration in decision making on applications that fall under the Town and Country Planning Act 1990 (as amended).



3. THE EXTENDED 2KM SEARCH AREA – METHODOLOGY AND SEQUENTIAL ANALYSIS

3.1. The methodology for this sensitivity test follows the one used for the previous ASA which was submitted in April 2023. This is to ensure consistency between the two reports. As such, they should be read in conjunction together.

3.2. The following parameters were used for the sequential analysis for both the previous ASA and this addendum for the revised search area;

- Agricultural Land Classification
- Environmental / heritage / landscape designations
- Flood Zone
- Topography
- Fragmentation of array blocks (including overhead lines)
- Vehicle Accessibility
- Open / common land access and rights of way
- Constructability of connection route

3.3. The parameters used for the initial 500m search area have been replicated for the new 2km search area (see above) meaning that this report assesses a further 1.5km of land either side of the 132kVA overhead line. As such, the plan attached at **Appendix 1** uses agricultural land classification, statutory designations in relation to landscape, nature conservation and heritage to filter out potential alternative sites that are 'unconstrained' within the extended study or search area.

3.4. The remaining 'unconstrained areas' are then subject to further analysis and evaluation to identify whether these areas offer any potential non-agricultural or previously developed land for the development and to inform the second phase of site design. This phase considers



the site-specific circumstances, the existing use, and the potential for placement of panels and other solar infrastructure.

Sequential Analysis

- 3.5. The original ASA used an assessment of Previously Developed Land (PDL) within the study area (500m either side of the 132kVA overhead line) as a starting point for the sequential test analysis. This essentially reviews all PDL within the study area which meets the deliverability parameters required to deliver a solar farm development at the scale required and is unaffected by environmental constraints.
- 3.6. To ensure that no new brownfield sites had been recently allocated, another review of PDL within Maidstone was undertaken as part of this ASA. This was principally achieved through a careful review of the Brownfield Land Register, which was obtained from Maidstone Borough Council's website. This document was filtered to identify sites within the revised designated search area. Upon evaluation based on their size, it was determined that there are no brownfield sites within this search area that are large enough to accommodate the proposed development.
- 3.7. Therefore, the conclusions of the original assessment remained robust as no new brownfield sites had been identified. As such, no further GIS assessment is required to assess any of the undeveloped and previously developed land within Maidstone.
- 3.8. Similarly, there were no commercial roof tops with sufficient space within the revised study area (2km either side of the 132kVA overhead line) to deliver utility scale solar PV development. This was confirmed through the utilisation of Ordnance Survey OpenMap Local data, which successfully identified and calculated the roof space of all buildings within the revised search area. However, it was evident that none of the buildings assessed were adequately sized to accommodate the Development Proposals. Therefore, the conclusions of the original assessment remained robust in relation to commercial rooftop space.
- 3.9. There is no brownfield land available to accommodate the Proposals. Indeed, in Statement of Case for the appeal, the Council acknowledges that greenfield land is required to accommodate the proposed development.



- 3.10. However, the revised study area for this addendum has identified nine potential alternative sites that could have the potential to support the Development Proposals. The nine alternative sites are shown on the plan attached at **Appendix 1** and are assessed in turn below as part of the sequential analysis.

Conclusions of Extended Search Area

- 3.11. The principal concern underlying the first reason for refusal relates to the potential effects on best and most versatile agricultural land with regard to relevant policies that seek the use of poorer quality agricultural land in preference to higher quality land. As such, the original ASA and this sensitivity test primarily focus on the potential for alternative sites that have a lower quality grade of land, when compared to the Appeal Site. However, it is apparent that, similar to the conclusion of the April 2023 sequential analysis assessments, Appendix 1 of this report demonstrates that there is no land lower than provisional Grade 3, within the revised 2km search area. As such, it is concluded that there is no agricultural land of poorer quality available, even on the basis of the extended search area.
- 3.12. Grade 3 is split into sub-categories 3a and 3b, with only 3a being Best and Most Versatile Land. The recognised method for establishing the sub-categories of Grade 3 is through soil sampling and assessment. This is a relatively costly, intrusive and time consuming process. For example, the submitted Agricultural Land Classification and Soil Resource Pit (APP 1.21) confirms that in order to test the Appeal Site, 93 soil profiles were examined and 5 soil pits were excavated.
- 3.13. From a practical perspective, it is not reasonable or proportionate to expect those seeking to develop urgently needed renewable energy schemes to sample all Grade 3 land in an entire area of search, let alone the cross local planning authority search area that the Council suggests should have been adopted.
- 3.14. In addition, land owner permission is of course required to access and survey the land. Landowners and farmers are likely to refuse access for this scale of surveying where they may have crops or stock on the land, and where they have no financial interest in the proposed development. They would also likely seek financial compensation for testing of their land, adding further cost and time to agree scopes of works on their land and compensation.

- 3.15. It is therefore appropriate and proportionate that the consideration of land as part of this exercise does not go on to distinguish between sub-grades of Grade 3 land.
- 3.16. However, for robustness, and in line with the Study methodology, this addendum also reviews other material factors that are relevant whether potential alternative sites may be suitable for the Development Proposals. The nine potential alternative sites are assessed individually below.
- 3.17. It must however be noted that the Appellant's position is that in this case, sites beyond 500m are unsuitable for the reasons summarised above. It is therefore emphasised that other potential alternative sites are considered below notwithstanding that requirement and only to address and examine the implications of the Council's criticism.

Site 1

- 3.18. Site 1 is provisional Grade 3 land quality and is therefore not preferable to the Appeal Site in terms of agricultural land classification.
- 3.19. Furthermore, Site 1 only measures 57ha, which is already smaller than the recommended minimum size of approximately 70 – 100ha that is required for commercial scale solar farms proposed for 132kVA connections to the main grid as per the Development Proposals.



Figure 1



- 3.20. As **Figure 1** above demonstrates, this site area is likely to be reduced further due to the presence of fruit bearing plants, which will likely prevent any solar infrastructure from being installed in these areas, due to their commercial value. However, the site is adjacent to Site 2 and so is not ruled out on the basis of its site area alone.
- 3.21. Whilst this site is within the 2km revised study area, ultimately its distance from the 132kVA overhead line would involve crossing multiple fields of third-party land as well as a public highway (B2079). Developers prefer to avoid this situation, as even if all private landowners are on board, the financial implications of agreeing multiple commercial leases can be further exacerbated by the costs associated with a long distance connection and crossing public highways. The closest pylon on the 132kVA line seems to be at Ladysden farm to the southwest, but this is immediately adjacent to glass houses and planted vines. There would seem limited prospect of siting a switch gear station in this location given the existing structure and use, even if connection is technically possible.
- 3.22. To summarise, it is evident that this site is provisional Grade 3 land quality and therefore not preferable to the Appeal Site in terms of agricultural land classification. Its only advantage is the fact it lies outside the Flood Zone but ultimately, Site 1 is positioned too far from the overhead cable required for connection to the main grid.

Site 2

- 3.23. Site 2 covers some 114ha of land of provisional Grade 3 land quality and is therefore not preferable to the Appeal Site in terms of agricultural land classification. It lies adjacent to 'Site 1' and therefore many of the constraints as outlined above are also applicable to this site. These include the distance from the 132kVA overhead line and the need to cross several areas of third-party land and the B2079. It also lies at the very extremes of the search area. The shortest route to the point of connection would be from the far western boundary of the site but this is not achievable, as it is if too far and would need to cross multiple ownerships and through large areas of Grade 2 agricultural land.
- 3.24. The eastern and southern margins of Site 2 are bordered by two large areas of Ancient Woodland. This will require a stand-off of at least 15m, and given the shape of Site 2, could result in an inefficient layout of panels and supporting equipment, although this has not been tested. The majority of the site lies in Flood Zones 2 and 3.



3.25. In summary, Site 2 is land of provisional Grade 3 land quality and is not therefore preferable to the Appeal Site in terms of agricultural classification.

Site 3

3.26. Site 3 covers 147ha of agricultural land and lies to the immediate south of the Site that is the subject of the appeal. As such, there are similar advantageous characteristics that make this site suitable for the Development Proposals. These include the location of the 132kVA overhead line that passes through the site, which makes the point of connection favourable, as there is no need to access third party land and therefore infrastructure costs associated with the connection to the main grid are significantly reduced. Site 3 also has the potential for good site access due to the existing agricultural access from Sheephurst Lane, which links to the wider strategic network.

3.27. However, a review of the Land Registry (see **Appendix 3** for further details) has confirmed that the site is owned by several different private landowners and therefore agreeing multiple commercial leases is unlikely to be achievable in a reasonable timescale especially when compared to the Application Site. The east part of Site 3 (the land in shown in blue on the map in Appendix 3) is owned by the same person as the Appeal Site. This area of land was not offered to the Appellant and is not available.

3.28. The site is also closer to a number of listed buildings and a small number of fields in the land ownership west of Sheephurst Lane that splits Site 3 contain fruit bearing trees (see **Figure 2** below). In addition, the site (the eastern of Sheephurst Lane land ownership) is dissected by the Lesser Teise (again refer to **Figure 2** below) which would likely to be a physical constraint that restricts site assembly for the solar farm. All of the site lies in Flood Zones 2 and 3.



Figure 2

- 3.29. It should be emphasised that this potential alternative site is also provisional Grade 3 land quality and is therefore not preferable to the Appeal Site in terms of agricultural land classification in any case.

Site 4

- 3.30. Site 4 represents 86ha of land to the northwest of the Appeal Site. Its shortest route to the proposed and agreed connection point would be directly to the south but this direct route is constrained by the South Eastern Main Line, which forms the southern boundary of the site as well as areas of Grade 2 agricultural land to the south and east. The River Teise forms the eastern boundary of the site which would need to be crossed to access a grid connection. This would not be achievable, particularly given the distance from the connection point.
- 3.31. All of the site lies in Flood Zones 2 and 3.
- 3.32. The distance from the connection point means that even without the constraints to the south and east, several landowners would need to be onboard with the proposals and financial settlements agreed for the use of their land. As such, the proposed connection point to the 132kVA overhead line is not geographically or economically viable from Site 4.
- 3.33. Furthermore, within the southern half of the site, there is also a storage / recycling facility that appears to process agricultural materials / waste as well as general agricultural vehicle and machinery storage. This facility includes two access points from Willow Lane via Upper



Fowle Hall Farm. These facilities may influence the development of an efficient scheme but given the above constraints this addendum does not consider Site 4 suitable for the Development Proposals.

- 3.34. It should be emphasised that this site is provisional Grade 3 land quality and is therefore not preferable to the Appeal Site in terms of agricultural land classification.

Site 5

- 3.35. Site 5 represents the largest area of the potential alternative sites available within the revised 2km study area and covers approximately 161ha.
- 3.36. The majority of the site lies in Flood Zones 2 and 3.
- 3.37. Many of the individual fields that comprise the site (mainly in the north of the site) have irregular shaped boundaries with many of these margins distinguished through dense woodland and well-established vegetation. There are also large, isolated trees positioned sporadically within the centre of fields as well as copse of trees which in places, extend into the arable fields. Whilst not ruled out for this reason, this is in direct comparison to the Appeal Site, where large areas of vegetation are excluded from the site boundary and the field boundaries are generally straight or symmetrical. The vegetation within the appeal site is also restricted to linear strips and is therefore more suitable for solar development and providing the ancillary infrastructure such as internal access tracks.
- 3.38. Claygate Road runs north to south, whereas the overhead line is to the east and so a connection utilising the highway would be very long and costly. Glasshouses and development located on Collier Street would limit any opportunity to lay an underground connection directly to the east.
- 3.39. Site 5 is a good example of why distance to a point of connection is important, and how neighbouring land can restrict the most direct route to the proposed grid connection. Practically, economically, commercially and technically, the further a site is toward the edge of the 4km corridor, the more unlikely it is to be viable.
- 3.40. It should also be emphasised that this site is provisional Grade 3 land quality and is therefore not preferable to the Appeal Site in terms of agricultural land classification.



Site 6

- 3.41. Site 6 covers approximately 43ha of land, which is ultimately too small for the Development Proposals, as reiterated throughout this report, a minimum of 70ha is required for this commercial solar development. Consideration has been given to whether Sites 5 and 6 could be assembled together, but they are owned by two different landowners (see **Appendix 3** for further details) which naturally makes it harder to agree commercial leases required to facilitate an option on the land for the Development Proposals.
- 3.42. It should also be emphasised that this site is provisional Grade 3 land quality and is therefore not preferable to the Appeal Site in terms of agricultural land classification.

Site 7

- 3.43. Site 7 covers 66ha of land, which is below the minimum threshold for a commercial solar scheme that matches the scale of the Development Proposals. It is further constrained due to the distance between the 132kVA connection point and the western site boundary of the area.
- 3.44. The site cannot utilise a connection route via the south due to the South Eastern Main Line. A connection to the west is constrained by built development and orchards along Pattenden Lane. Two ponds on the site and 2 PRoW that cross through the site one which cuts through the middle of the site, will further reduce the developable area.
- 3.45. The built development and proximity to Marden might mean that the owner has other residential or commercial development aspirations for the site, which would be significantly more financially attractive to the owner than solar development, but given this is an assumption based on professional experience only, the site would not be ruled out for this reason.
- 3.46. Most of the site lies in Flood Zone 1.
- 3.47. It should also be emphasised that this site is provisional Grade 3 land quality and is therefore not preferable to the Appeal Site in terms of agricultural land classification.



Site 8

- 3.48. Site 8 is one of the largest sites considered and comprises approximately 149ha of agricultural land. However, as can be seen on the plan attached at **Appendix 1** the site consists of lots of smaller fields and through a check on Land Registry, it is clear that Site 8 is owned by up to eight individual landowners. As such, agreeing multiple commercial leases is unlikely to be achievable. Competing landowners can also restrict access throughout the site due to the need to cross through neighbouring land as well as the physical barrier of features such as ditches and dense vegetated field boundaries.
- 3.49. Similar to the other potential alternative sites assessed, an underground cable would need to cross public highways in order to connect into a pylon along the 132kVA overhead line. To the west of the site lies Hunton Road, which physically separates the site from the nearest pylon. As such and in order to make a physical connection into the grid, the costs and complexity of the construction operations involved are much higher when compared to using the appeal site.
- 3.50. All of the site lies in Flood Zones 2 and 3.
- 3.51. There are also numerous public rights of way routed through this site that will need retaining and mitigating accordingly, and this may reduce the level of solar panels across the site, which ultimately lowers the economic viability of the site to support the Development Proposals. Similarly, there are groups of dwellings within the site.
- 3.52. It should also be emphasised that this site is provisional Grade 3 land quality and is therefore not preferable to the Appeal Site in terms of agricultural land classification.

Site 9

- 3.53. Site 9 represents 56ha of agricultural land and as reiterated above, is therefore far too small to accommodate the Development Proposals.
- 3.54. Areas of woodland and a reservoir mean that the Site is an awkward shape for delivering an efficient solar farm layout.
- 3.55. It should be emphasised that this potential alternative site is provisional Grade 3 land quality and is therefore not preferable to the Appeal Site in terms of agricultural land classification.



4. SUMMARY AND CONCLUSIONS

- 4.1. This addendum to the original Sequential Analysis Study (SAS) dated April 2023 has been prepared on behalf of Statkraft UK Ltd to support a planning appeal for the construction of a solar farm on land at Little Cheveney Farm, Marden, Kent.
- 4.2. This addendum has been carried out to support the assessment of compliance with planning policy, and other material considerations, specifically National Planning Practice Guidance (PPG): Renewable and Low Carbon Energy, Paragraph 013 which sets out a number of factors that should be considered as part of the determining a planning application for a large-scale solar farm.
- 4.3. The original SAS describes the site selection parameters applied by the Appellant to identify a suitable solar farm development site that can accommodate a 46.97MW ground-mounted solar farm.
- 4.4. The site needs to be located proximate to a suitable point of connection to the grid which has available capacity which should not be constrained or result in significant power curtailment.
- 4.5. Once available grid capacity has been identified the next stage in the process is to identify a suitable site in proximity to the Point of Connection.
- 4.6. The 132kV overhead line which provides the Point of Connection for the Proposed Development crosses through the site and has a connection date in 2025 thus offering an effective and efficient means of connection to the grid.
- 4.7. This addendum as well as the previous SAS submitted in April 2023, describe the site selection criteria applied to the siting of the Development Proposal which has included consideration of the need to preferentially site large scale solar farm development on non-agricultural and land which is not Best and Most Versatile where possible.
- 4.8. The content of both this addendum and the original SAS report demonstrates compliance with relevant planning considerations relating to agricultural land for the following reasons:



- There is no suitable previously developed land or roof tops which could accommodate the scale of development required and consequently that the use of agricultural land will be necessary. This is now common ground with the Council.
- Most of the land within the Study Area comprises of higher quality agricultural land with agricultural land grading of 1, 2, and 3 with relatively high levels of Grades 1 and 2 land within the administrative district of Maidstone Borough Council. There is no grade 4 land in the area, and it is evident that, generally, all agricultural land in the area is of a good quality. Consequently, it is inevitable that the development of solar farm development within this area will need to utilise areas of higher quality agricultural land, with land at Grade 3 representing the preferable option as it represents the lowest land classification grade, as there is no lower Grade land available within the extended search area (see **Appendix 1** for further details).
- Further to site specific evaluation the Agricultural Land Classification at the site has been assessed as predominantly comprising of land which is not BMVAL (Grade 3b 53%). The largest proportion of the remaining area (38%) comprises of land with an agricultural land classification of Subgrade 3a which is the lowest category of 'Best and Most Versatile Land'.
- Both sequential analysis assessments undertaken demonstrate that no preferable or potential unconstrained sites have been identified within the Study Area (both 500m and 2km) which have a lower agricultural land quality than the site.
- The Development Proposals are proposed to be sited on land currently used for agriculture. The development will enable the continuation of agricultural use at the site and support the economic sustainability of the agricultural use on the wider estate.
- The Development Proposals will deliver significant biodiversity net gain enhancements.

4.9. The findings of both SAS reports demonstrate that the use of agricultural land for this development has been found to be necessary, that no previously developed land has been identified to accommodate the scale of development proposed, and that lower grade land has been used in preference to higher.

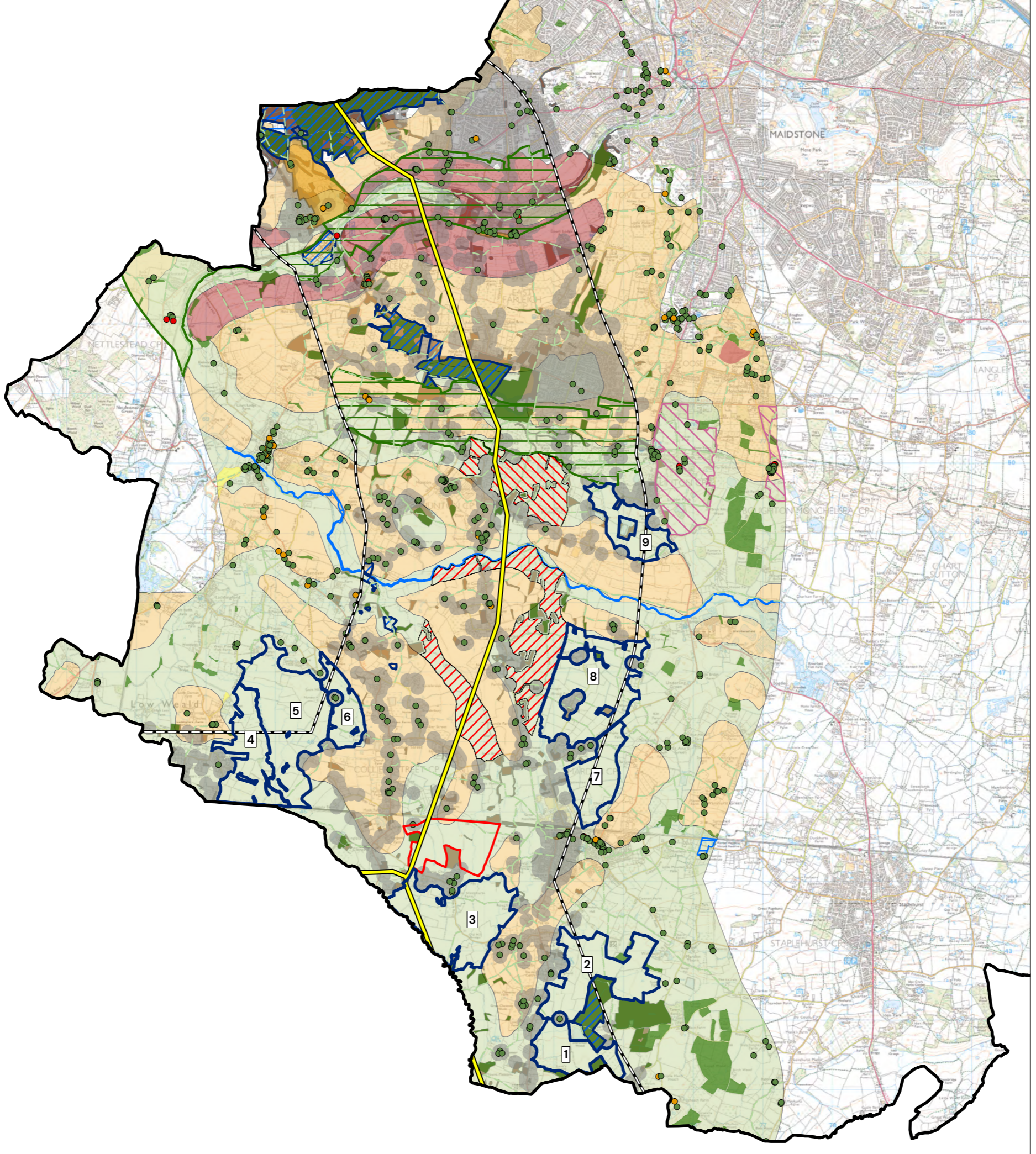


- 4.10. For clarity, it is evident that all of the potential alternative sites assessed within the extended search area are provisional Grade 3 land quality and therefore none of these sites are sequentially preferable to the Application Site in terms of Agricultural Land Classification.
- 4.11. Furthermore, agricultural use will continue at the site throughout the duration of the operational phase and the scheme will also deliver biodiversity enhancements in accordance with relevant planning policy and guidance.
- 4.12. In conclusion, the site selection and use of agricultural land for delivery has been fully justified in relation to relevant planning policy and guidance for both study areas i.e. the original 500m assessed and this sensitivity test which assesses 2km.



APPENDIX 1: 2KM SEQUENTIAL ANALYSIS UNCONSTRAINED AREAS PLAN

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- KEY**
- SITE BOUNDARY
 - POTENTIAL SITE
 - MAIDSTONE LPA
 - AREA OF SEARCH (2KM)
 - 132KV OVERHEAD LINE
 - UNCONSTRAINED AREA A (84.94 HECTARES) COVERED IN PREVIOUS REPORT
 - UNCONSTRAINED AREA B (188.6 HECTARES) COVERED IN PREVIOUS REPORT
 - OS OPENMAP LOCAL WOODLAND
 - RESIDENTIAL BUFFER (100M)
- LISTED BUILDING GRADE**
- I
 - II
 - II*
- PROW
 - NATIONAL CYCLE NETWORK
 - LANDSCAPES OF LOCAL VALUE
 - LOCAL WILDLIFE SITE
 - ANCIENT WOODLAND
 - SITES OF SPECIAL SCIENTIFIC INTEREST
 - CROW ACCESS LAND
 - SCHEDULED MONUMENTS
 - PARKS AND GARDENS
 - COUNTRY PARKS
 - CONSERVATION AREA
 - GREEN BELT
- PROVISIONAL AGRICULTURAL LAND CLASSIFICATION**
- GRADE 1
 - GRADE 2
 - GRADE 3

REV	DATE	DESCRIPTION	DRAWN	APPROVED

APPENDIX 1: 2KM SEQUENTIAL ANALYSIS UNCONSTRAINED AREAS PLAN

SHEEPWASH SOLAR FARM

CLIENT
STATKRAFT UK LTD

DATE	SCALE	TEAM/DRAWN	APPROVED
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SHEET	REV	N	O	1KM
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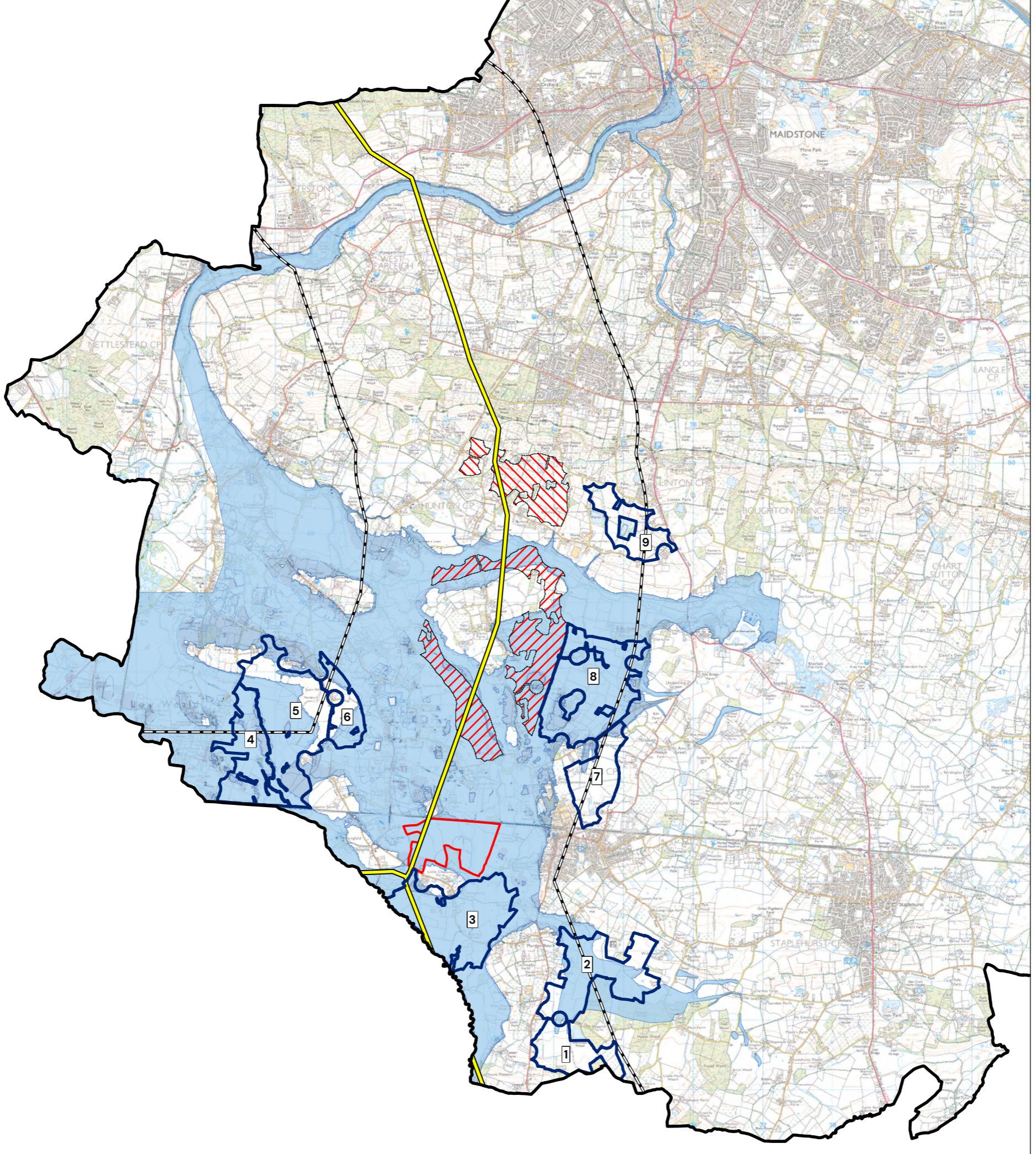
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P22-2992_PR_0018





APPENDIX 2: FLOOD MAPPING FOR ALTERNATIVE SITES ASSESSED

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- KEY**
- SITE BOUNDARY
 - POTENTIAL SITE
 - MAIDSTONE LPA
 - AREA OF SEARCH (2KM)
 - 132KV OVERHEAD LINE
 - UNCONSTRAINED AREA A (84.94 HECTARES) COVERED IN PREVIOUS REPORT
 - UNCONSTRAINED AREA B (188.6 HECTARES) COVERED IN PREVIOUS REPORT
 - FLOOD ZONE 3
 - FLOOD ZONE 2

REV	DATE	DESCRIPTION	DRAWN	APPROVED

APPENDIX 2: 2KM FLOOD ZONE AREAS PLAN

SHEEPWASH SOLAR FARM

CLIENT
STATKRAFT UK LTD

DATE	SCALE	TEAM/DRAWN	APPROVED
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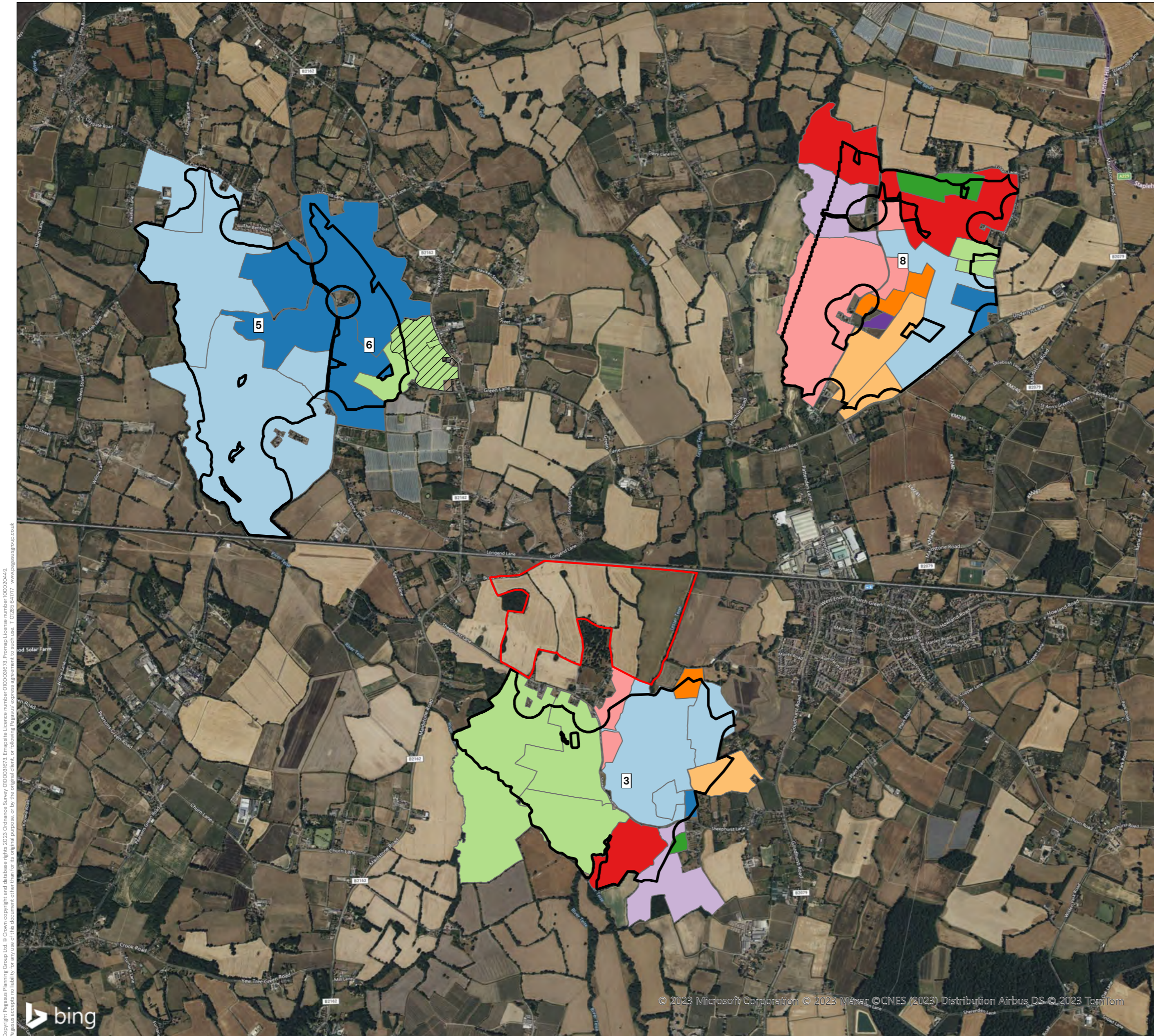
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DRAWING NUMBER
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APPENDIX 3: LAND REGISTRY DETAILS FOR ALTERNATIVE SITES 3, 5, 6 AND 8



KEY

SITE BOUNDARY

POTENTIAL SITE

LAND REGISTRY

SITE 8

- LANDOWNER 1
- LANDOWNER 2
- LANDOWNER 3
- LANDOWNER 4
- LANDOWNER 5
- LANDOWNER 6
- LANDOWNER 7
- LANDOWNER 8
- LANDOWNER 9
- LANDOWNER 10

SITE 5 AND 6

- LANDOWNER 1
- LANDOWNER 2
- LANDOWNER 3
- LANDOWNER 4

SITE 3

- LANDOWNER 1
- LANDOWNER 2
- LANDOWNER 3
- LANDOWNER 4
- LANDOWNER 5
- LANDOWNER 6
- LANDOWNER 7
- LANDOWNER 8
- LANDOWNER 9

REV	DATE	DESCRIPTION	DRAWN	APPROVED

APPENDIX 3: LAND REGISTRY DETAILS FOR ALTERNATIVE SITES 3, 5, 6 AND 8

SHEEPWASH SOLAR FARM

CLIENT
STATKRAFT UK LTD

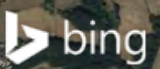
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DRAWING NUMBER
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Appendix 4 – Noise Position Statement

Noise Position Statement

Land North of Little Cheveney Farm, Sheephurst Lane, Marden (22/501335/FULL; APP/U2235/W/23/3321094) - noise

Suitably Qualified Person

Mick Lane, Acoustic Director of dB Consultation Limited BSc(Hons) DipIOA MIOA

I can confirm that I am the Suitably Qualified Person to undertake a noise impact assessment of the development.

I hold a recognised acoustic qualification and membership of an appropriate professional body.

Degree: Environmental Studies 2:1 Open University 2003 BSc (Hons)

Post Graduate Diploma in Acoustics and Noise Control 2006 DipIOA

Full Member of The Institute of Acoustics MIOA since 2009, membership number 44030

I have worked in acoustics for over 17 years and undertaken numerous assessments across many different sectors for residential, commercial and industrial development.

Proof of Evidence

Report document reference: **dBc/Origin/10253/ML/04 Core Document number CD1.39** issued on the 25th April 2023 by dB Consultation Limited used BS 4142:2014 A1-2019 methodology to assess the noise emission from the plant and equipment installed as part of the 'Appeal Amendments scheme' related to planning application 22/501335/FULL.

The report concluded that the noise emission from the plant and equipment would have a low impact on the nearest noise sensitive receptors to the development.

Following discussions with Mid Kent Local Authority noise expert, the methodology, assessment and conclusion of the report has been agreed.

The Local Authority and the Applicant have agreed to the following condition relating to noise.

- (a) *Within 1 month of first use of the Solar Energy Generating Station, post installation sound level assessments shall be undertaken and the results submitted to the local planning authority.*
- (b) *If the results of the post installation sound level assessments show the specified sound levels at the specified receptors of the dBc Consultation Ltd Report (Document Reference: dBc/Origin/10253/ML/04) are exceeded, details of proposed mitigation and a timetable of implementation shall be submitted for the approval of the Local Planning Authority within 2 months of the first use of the Solar Energy Generating Station. The approved mitigation details shall be installed to the approved timetable and retained thereafter.*

To implement part (a) of the condition, a suitably qualified person in environmental sound measurements, would take on site measurements of the noise emission from the plant and equipment, as discrete entities, installed as part of the Appeal Amendments scheme. A technical report would be submitted to the Local Authority detailing the measurements taken, locations and comparison of the measured to the calculated noise levels at the specified receptors as detailed in document reference: **dBc/Origin/10253/ML/04 Core Document number CD1.39**.

Condition (b) would only be actioned if the specified receptor noise levels exceed the calculated noise levels assessed in document reference: **DBC/Origin/10253/ML/04 Core Document number CD1.39**.

In the event that Condition (b) is actioned, the Applicant would propose and submit, for approval of the Local Authority, a scheme of mitigation to reduce noise emission from the plant and equipment at the specified receptors. Following Local Authority approval the applicant would implement the mitigation measures and they will be retained thereafter.

Town & Country Planning Act 1990 (as amended)
Planning and Compulsory Purchase Act 2004

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