

# **CONSTRUCTION OF A SOLAR FARM AND BATTERY STATIONS TOGETHER WITH ALL ASSOCIATED WORKS, EQUIPMENT AND NECESSARY INFRASTRUCTURE**

## **SITE SELECTION REPORT**

### **LAND NORTH OF HALLOUGHTON, SOUTHWELL, NOTTINGHAMSHIRE**

**ON BEHALF OF JBM SOLAR PROJECTS 6 LTD.**

#### **Pegasus Group**

Pegasus House | Querns Business Centre | Whitworth Road | Cirencester | Gloucestershire | GL7 1RT

**T** 01285 641717 | **F** 01285 642348 | **W** [www.pegasusgroup.co.uk](http://www.pegasusgroup.co.uk)

Birmingham | Bracknell | Bristol | Cambridge | Cirencester | East Midlands | Leeds | Liverpool | London | Manchester | Newcastle | Peterborough

**DESIGN** | **ENVIRONMENT** | **PLANNING** | **ECONOMICS** | **HERITAGE**

©Copyright Pegasus Planning Group Limited 2011. The contents of this document must not be copied or reproduced in whole or in part without the written consent of Pegasus Planning Group Limited

## **CONTENTS:**

Page No:

1.	INTRODUCTION	1
2.	SOLAR FARM REQUIREMENTS	2
	Fundamental Requirements	2
	Identification of Site Search Area	2
3.	SITE IDENTIFICATION CRITERIA	3
4.	SITE SELECTION CONSIDERATIONS	5
	Site Search Area	5
	Site Identification	5
5.	SELECTION OF COTMOOR SOLAR FARM SITE	8

## **APPENDICES:**

APPENDIX 1: SITE SEARCH AREA

APPENDIX 2: SITE SEARCH AREA CONSTRAINTS AND LANDOWNERSHIP

APPENDIX 3: SITE SEARCH AREA ROAD NETWORK

APPENDIX 4: SITE SEARCH AREA ALC MAPPING

## **1. INTRODUCTION**

- 1.1 This Site Selection Report has been prepared on behalf of JBM Solar Projects 6 Ltd. ('The Applicant') to support a planning application for the development of the Cotmoor Solar Farm ('Proposed Development') on land north of Halloughton ('Application Site'), currently under consideration by Newark and Sherwood District Council (LPA ref: ref: 20/01242/FULM).
- 1.2 This document summarises the process undertaken by the Applicant to select the Application Site for the Proposed Development and is provided at the request of case officer Honor Whitfield in an email received 6<sup>th</sup> January 2021.

### **Structure of Report**

- 1.3 This Report confirms the fundamental requirements and circumstances which need to be in place for a solar farm to be provided in order to determine a 'Site Search Area' and the detailed considerations undertaken to find suitable land within these identified areas.
- 1.4 The Report summarises the considerations which demonstrate the Application Site is most preferable to accommodate the Proposed Development in comparison to other possible locations when applying the site search methodology.

## 2. SOLAR FARM REQUIREMENTS

### **Fundamental Requirements**

- 2.1 The matters set out in this Section are those which are fundamental for the Applicant to understand the land on which a solar farm could be accommodated. This sets the context for detailed site analysis and defines the Site Search Area for which detailed site analysis will take place.

### **Capacity of Electricity Network and Ability to Connect**

- 2.2 The solar farm needs to be capable of connecting to the Electricity Network at a location where there is existing capacity.
- 2.3 Further, the Applicant is required to have agreement from the District Network Operator (DNO) to export electricity at that location.

### **Viable Connection**

- 2.4 A scheme of this scale is required to connect into a 132kV High Voltage line in order to export electricity. The cost of a 132kV cable to connect back to the Point of Connection (POC) to the Electricity Network is c.£1million per kilometre. As such, the substation allowing connection to the Electricity Network cannot be more than 1km from the point of connection, as any further distance would incur excessive connection costs make the scheme unviable.
- 2.5 The Applicant therefore considers land within 1km of locations at which there is sufficient capacity on the Electricity Network and to which they have legal right to export electricity.

### **Identification of Site Search Area**

- 2.6 In order to undertake site selection, it is necessary to define an appropriate and reasonable area in which to perform a detailed consideration of sites (the 'Site Search Area'). However, there is no national or local guidance regarding the definition of a suitable area for this analysis.
- 2.7 It is considered that a 10km radius from the Application Site is a reasonable extent and land within this range which is also within 1km from the 132kV High Voltage line. Such an area forms the Site Search Area, which the Applicant uses to focus on potential sites and more detailed analysis.

### 3. SITE IDENTIFICATION CRITERIA

- 3.1 In order to identify potential locations for the solar farm within the Site Search Area, the matters outlined below are considered.

#### Environmental and Planning Constraints

- 3.2 The Applicant considers the presence of designations and constraints which would mean the principle of a solar farm would unlikely be acceptable or be less preferable than in other locations. Such designations include:

- Planning designations, including Green Belt land.
- Landscape designations, including Areas of Outstanding Natural Beauty.
- Ecological designations, including SACs, SPAs, SSSIs and Local nature Reserves.
- Heritage designations, including scheduled monuments, listed buildings, conservation areas and Ancient Woodland.
- Environment Agency defined Flood Zone 2 and 3 land.

#### Achieving a Viable Scale and Land Ownership

- 3.3 The UK Government's Renewables Obligation Certificate scheme to subsidise solar PV development ended in April 2017. In the absence of subsidy, the scale of solar farms is required to be larger in capacity in order to achieve a viable scheme and economies of scale.
- 3.4 The Applicant requires sufficient land to accommodate a solar PV development with a capacity of 49.9MW in order to achieve viability. The land requirements vary depending on various matters, however a significant area of land, normally c.80ha, is required to maximise efficiency and yield of the solar farm to maximise renewable energy benefits.
- 3.5 In order to find land of sufficient size to accommodate the required capacity, the Applicant focuses on large landholdings within the Site Search Area to limit the potential number of landowners required to achieve a viable-scale solar farm scheme.
- 3.6 Landholdings of 50 acres or more within the Site Search Area are therefore identified.

---

Availability of Non-Agricultural Land / Previously Developed Land

- 3.7 In recognition of national Planning Practice Guidance relating to large-scale solar PV, land which is not in agricultural use and/or previously developed is prioritised.
- 3.8 The Natural England Provisional Agricultural land Classification (ALC) Map identifies land which is non-agricultural, supported by analysis of aerial photography.
- 3.9 The relevant Brownfield Land Register is consulted for details of potentially available previously developed land within the Site Search Area along with aerial photography analysis.
- 3.10 Note that deployment on rooftops is not considered feasible or viable at the proposed scale.

Agricultural Land Quality

- 3.11 In circumstances where no non-agricultural or previously developed land is identified in the Site Search Area, and use of agricultural land is therefore necessary, consideration is given to the Natural England Provisional ALC Maps to consider the agricultural land quality.
- 3.12 The ALC maps define agricultural land quality as being Grades 1-5 (1 being 'Excellent' and 5 'Very Poor'). Note that the mapping does not distinguish between Grade 3a 'Good' and Grade 3b 'Moderate' land.
- 3.13 Preference is given to the use of poorer quality agricultural land over higher quality land.

## **4. SITE SELECTION CONSIDERATIONS**

### **Site Search Area**

- 4.1 In the context of the fundamental matters relevant to identifying a potential location for a solar farm outlined in Section 2 (Electricity Network capacity and export offer and viable connection) the Applicant identified a Site Search Area for this project, which is shown on the plan attached at Appendix 1.

### **APPENDIX 1: SITE SEARCH AREA**

- 4.2 This Site Search Area is a 10km corridor along the section of 132kV overhead line to the south-west of Newark. A 2km corridor (1km either side of the overhead line) was defined for detailed site analysis and consideration along the length of this 10km section.

- 4.3 This area was defined because:

- The 132kV line has sufficient capacity for the export of electricity compared to lower voltage lines such as 66kV, 33kV or 11kV.
- The Applicant secured a connection agreement from the DNO to connect to the Electricity Network via this 132kV line.
- The 1km buffer either side of the 132kV line ensures a viable connection would be possible.
- An initial high-level sifting exercise determined this area as a preferable location to locate a solar farm, subject to detailed analysis.

### **Site Identification**

- 4.4 The below text describes the relevant considerations to site identification within the defined Site Search Area. These are the considerations which resulted in the Application Site being progressed.

### **Environmental and Planning Constraints**

- 4.5 The relevant designations and constraints within the Site Search Area are shown on the plan attached at Appendix 2.

### **APPENDIX 2: SITE SEARCH AREA CONSTRAINTS AND LANDOWNERSHIP**

- 4.6 The western extent of the Site Search Area is within designated Green Belt. The NPPF confirms that a solar farm on this land would likely constitute 'inappropriate'

development and only be permitted where very special circumstances apply. Given the presence of non-green belt land, land within the green belt was not considered further.

- 4.7 The eastern extent of the Site Search Area is within Environment Agency Flood Zone 2 and 3 and is therefore deemed as being at risk of flooding. The NPPF advises that development outside of such areas is sequentially preferable. The availability of other land within the area not at risk of flooding means that this land was also omitted.
- 4.8 The central section of the Site Search Area is less constrained, although several heritage assets are present as per all of the Site Search Area. The central area was therefore the focus for a detailed site search.

#### Site Access

- 4.9 The construction and decommissioning phases of the development require access by HGVs to the site to transport solar panels and supporting equipment. It is necessary for any land to be accessible from the highway network from roads capable of accommodating such vehicles.
- 4.10 Attached at Appendix 3 is a plan of the Site Search Area with the network of 'A' and 'B' roads shown. These roads are identified as being of suitable scale to accommodate construction and decommissioning vehicles.

### **APPENDIX 3: SITE SEARCH AREA ROAD NETWORK**

- 4.11 These roads are identified as being of suitable scale to accommodate construction and decommissioning vehicles and, therefore, focus is given to land in proximity of them. Such roads within the Site Search Area outside of the Green belt comprise the A612 which runs in a broadly north to south direction, between Southwell and junction with the A6097 at Lowdham, and the B6386 which runs in a north-east to south-west direction between Southwell and junction with the A6097 at Oxtun.

#### Land Ownership

- 4.12 Landholdings of more than 50 acres are shown in the plan at Appendix 2. This identifies areas within the central area that predominantly avoid the statutory designations.



- 4.13 These details form the basis of the Applicant approaches to landowners to determine if they would be interested in their land being used for a solar farm development. Only land which the owner is amenable to accommodating a solar farm can be considered to be available for such development.

Non-Agricultural Land / Previously Developed Land and Agricultural Land Quality

- 4.14 Attached at Appendix 3 is a plan with the Natural England Provisional ALC Mapping shown within the Site Search Area.

**APPENDIX 4: SITE SEARCH AREA ALC MAPPING**

- 4.15 This demonstrates that the only non-agricultural land within the Site Search Area is within designated green belt and was therefore not considered preferable in this context. In any case, review of aerial photography indicates this is a wooded area and would therefore not be capable of accommodating a solar farm. A further section of such land is located to the south, but this is too far from the 132kV line to achieve a viable connection to the Electricity Network.
- 4.16 A review of the Newark and Sherwood brownfield Land Register has been undertaken and it is confirmed this includes no land within the Site Search Area.
- 4.17 The agricultural land quality within the Site Search Area predominantly comprises undifferentiated Grade 3 quality land, with areas of Grade 2 land. There is no land defined by the Provisional maps as being Grade 1, 4 or 5.
- 4.18 Given that the use of agricultural land is necessary, the focus of the site search was on Grade 3 quality land, as the lowest quality in the Site Search Area. While Grade 3a and 3b land is undifferentiated on the Provisional ALC maps, detailed soil surveys are undertaken on such land to specify the actual grading on the selected site. The site specific ALC report in this instance determined that all of the Application Site is Grade 3b land which is of 'Moderate' quality, which, unlike Grade 3a 'Good' quality land, is not defined as being best and most versatile (BMV) land.

## **5. SELECTION OF COTMOOR SOLAR FARM SITE**

5.1 The Application Site is considered to be the most preferable having regard to the relevant matters set out in Section 4 and was therefore progressed to a planning application. In summary, the reasons for this are:

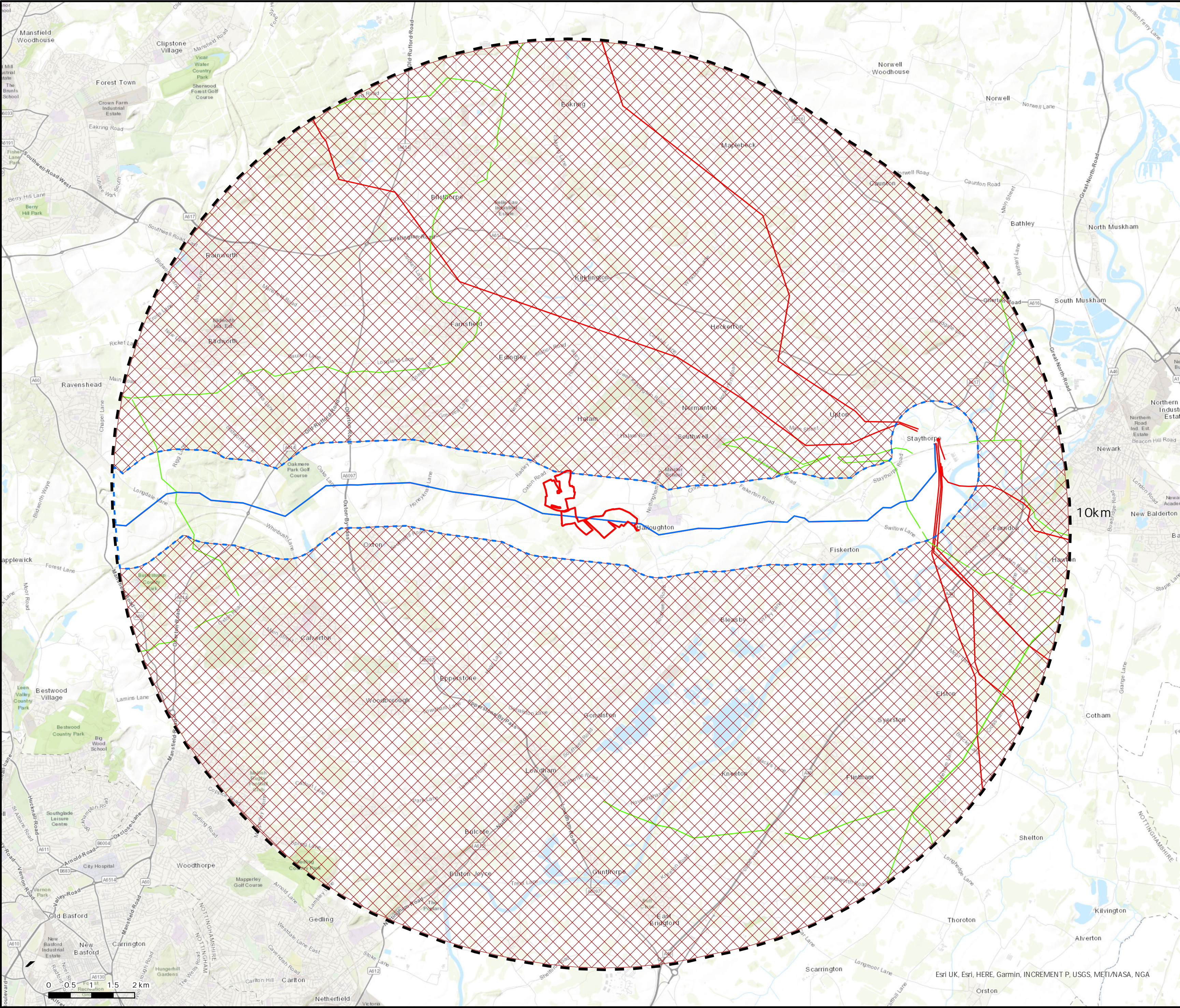
- The Application Site allows for a viable connection to the Electricity Network. The 132kV line crosses the site and therefore has an on-site or infield connection.
- The landowner is willing to enter into an agreement to promote the land for a solar farm and the Application Site is therefore available to accommodate this development.
- Other landholdings of appropriate size are not available for a solar farm development as owners of these titles were approached by the Applicant but did not wish to engage.
- The available land and large landholding on which the Application Site is located means that a scheme of a viable scale can be achieved.
- The Application Site avoids any statutory environmental and planning designations, including designated green belt land to the west of the Site Search Area and Flood Zone 2 and 3 areas to the east.
- The Application Site can be accessed using roads of sufficient capacity to accommodate vehicles for construction and decommissioning, with site access being adjacent to the A612.
- There is no unconstrained non-agricultural land or any previously developed land within the Site Search Area on which the scheme could alternatively be provided. It is therefore necessary for this development to be located on agricultural land.
- The Application Site has been subject to a detailed agricultural land classification study which confirms it is Grade 3b 'moderate' quality land, which is not classed as BMV land and subject to protection in planning policy. In the absence of any Grade 4 or 5 quality land in the Site Search Area, lower quality agricultural land has been used in preference to higher quality land.

- 5.2 The Application Site is partially in close proximity to several heritage assets in the form of Halloughton Conservation Area and listed buildings within this Conservation Area. However, the Heritage Desk-Based Assessment dated July 2020 supporting the application demonstrates that there would only be a very small degree of harm to the heritage significance of the conservation area and no harm to the individual significances of its listed buildings. As confirmed in the LVIA Addendum dated December 2020, inter-visibility between the site and publicly accessible locations within the Conservation Area is limited. It is considered unlikely that a scheme of this scale will avoid any harm to heritage assets.
- 5.3 The Landscape and Visual Impact Assessment dated July 2020 and Addendum dated December 2020 confirm that, while the character of the Application Site would be changed by the development, landscape character would remain predominantly unchanged by the Proposed Development. The assessment also finds that impacts on visual amenity would be limited as there are a limited number of locations where the development would be experienced.
- 5.4 In the context of the other considerations relevant to site selection, the Application Site would allow for a viable scheme on land which is available for a solar farm development which is preferable in planning terms to other land in the Site Search Area to achieve the substantial public benefits of renewable energy generation.
- 5.5 The Application Site is therefore considered to represent an appropriate location for the Proposed Development. Any heritage or landscape and visual effects considered must be judged in this context.

## **APPENDIX 1**

### **SITE SEARCH AREA**





**Legend**

- Site Boundary
- Site Boundary 10km Study Area
- Nonviable Grid Costs
- Landscape Character Area
- Local Authority Boundary
- 132kV Line - Grid Capacity Secured
- 132kV Grid 1km Search Corridor
- Western Power Distribution
  - 132kV
  - 33kV

**Sequential Analysis Assessment Plan**

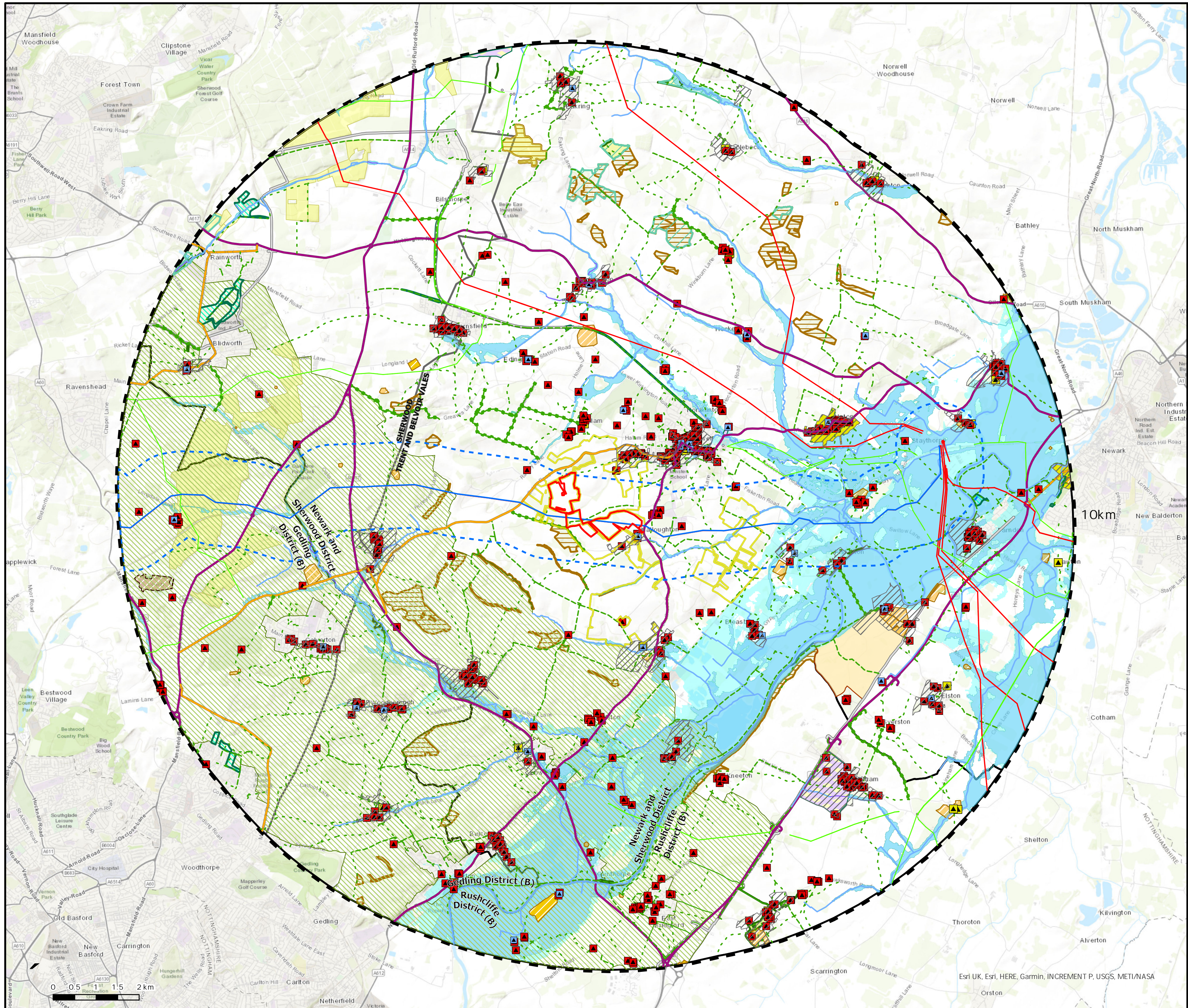
Project: A019 Cotmoor  
Drawing No: SAAP1-A019-4  
Drawn By: Ben Foster  
Date: 20/01/2021  
Scale: 1:60,000 @ A1



## **APPENDIX 2**

### **SITE SEARCH AREA CONSTRAINTS, HIGHWAYS AND LAND OWNERSHIP**





**Legend**

Site Boundary

Titles (50+ acres)

Site Boundary 10km Study Area

132kV Line - Grid Capacity Secured

132kV Grid 1km Search Corridor

Landscape Character Area

Local Authority Boundary

Listed Buildings

Grade I

Grade II

Grade II\*

Western Power Distribution

132kV

33kV

Rights of Way

Boat

Bridleway

Footpath

Roads

A Road

B Road

Watercourses

Inland River

Lake

Ancient Woodlands

Battlefields

Conservation Area

Countryside Right of Way - Access

Flood Zone 3

Flood Zone 2

Greenbelt

HAR Register

Local Nature Reserves

National Cycle Network

Parks and Gardens

Registered Common Land

Scheduled Monuments

SSSI

Sequential Analysis Assessment Plan

Project:

A019 Cotmoor

Drawing No:

SAAP1-A019-2

Drawn By:

Ben Foster

Date:

20/01/2021

Scale

1:60,000 @ A1





## **APPENDIX 3**

### **SITE SEARCH AREA ROAD NETWORK**



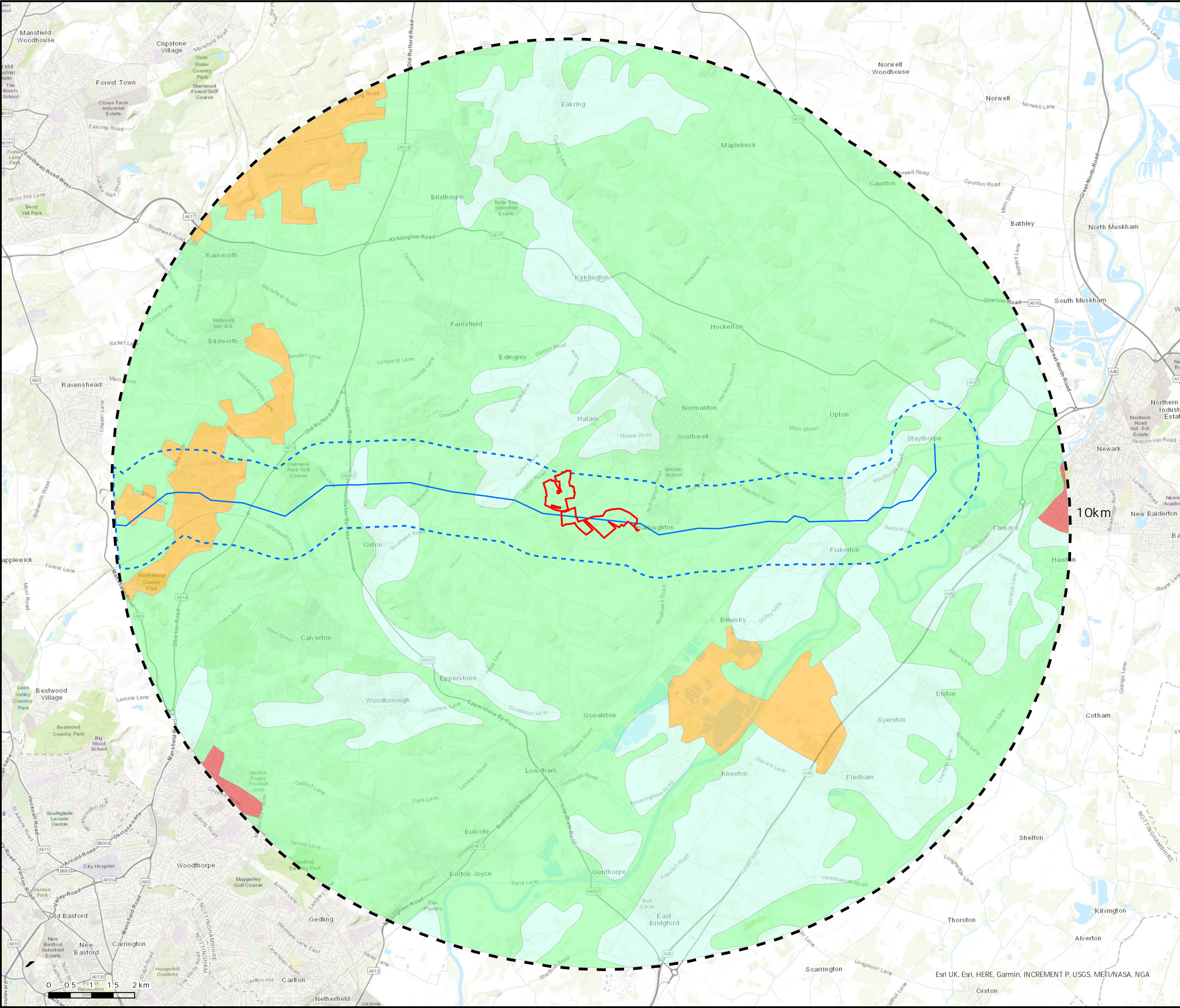




## **APPENDIX 4**

### **SITE SEARCH AREA ALC MAPPING**





**Legend**

- Site Boundary
- Site Boundary 10km Study Area
- 132kV Line - Grid Capacity Secured
- 132kV Grid 1km Search Corridor
- Landscape Character Area
- Local Authority Boundary

Agricultural Land Classification

- Grade 2
- Grade 3
- Non Agricultural

Sequential Analysis Assessment Plan

Project: A019 Cotmoor

Drawing No: SAAP1-A019-3

Drawn By: Ben Foster

Date: 20/01/2021

Scale: 1:60,000 @ A1

Sequential Analysis Assessment Plan

Project: A019 Cotmoor

Drawing No: SAAP1-A019-3

Drawn By: Ben Foster

Date: 20/01/2021

Scale: 1:60,000 @ A1

