Great North Road Solar and Biodiversity Park

Design Approach Document - Part 1 of 4

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Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009, APFP Regulation 5(2)(q)

SCHEDULE OF REVISIONS

Date	Page Reference	Revisions

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EXECUTIVE SUMMARY

This Design Approach Document describes the design process and progress for Great North Road Solar and Biodiversity Park ('the Development') – a new solar, energy storage and biodiversity park, located to the north west of Newark-on-Trent, Nottinghamshire with a potential generation and storage capacity of around 800MW AC.

The project vision is that:

The Development will support the UK's clean power mission by providing secure and sustainable energy to help tackle the climate crisis. It will respond positively to its local context, delivering multiple benefits for the environment, meaningfully boosting biodiversity and community.

The design process and key principles relating to the development of the design have been, informed by national and local policy and guidance on good design. Project-specific design principles have been established, focusing on **Climate**, **People**, **Places** and **Value**.

The design has been informed from the earliest stages by environmental considerations. Site selection and early design has taken account of community, technical and environmental factors including:

- Identifying land that is physically and technically suitable for the Development;
- Avoiding development within designated landscapes, heritage assets and ecology designations and maintaining separation from these;
- Maintaining separation from settlements and homes;
- Avoiding development within Green Belt, Local Plan allocations and minimising use of land identified as being of the best agricultural quality;
- Limiting development within areas identified as having a higher risk of flooding, and
- Working with willing landowners to avoid the need for compulsory purchase.

As the design has developed from site selection, more detailed research and site surveys have been undertaken as part of the Environmental Impact Assessment (EIA); technical design, and input from Statutory Consultees and local communities has shaped the locations identified for solar panels, substations, cable routes and BESS and for construction (traffic routes and compound locations). Changes have been made to the design between the EIA Scoping, PEIR and Submission to take account of the more detailed information now available.

The design set out within the masterplan includes measures to both mitigate impacts and provide enhancements. These measures include extensive planting; the provision of new permissive routes and a long distance circular walking route to enhance recreational opportunities; new woodlands and extensive areas of land managed for ecological benefit to provide biodiversity net gain.

In addition, projects to alleviate existing local flooding are being developed as part of the NG+ community benefits programme associated with the Development. These projects are intended to require separate planning permissions as they are not directly functionally associated with the solar farm.

The Design Approach Document has taken account of consultation feedback; further development of the technical design, and continued research and survey work as part of the EIA process.

Solar &
Biodiversity Park

June 2025

Solar panels from above (image by Red Zeppelin via Pexels)

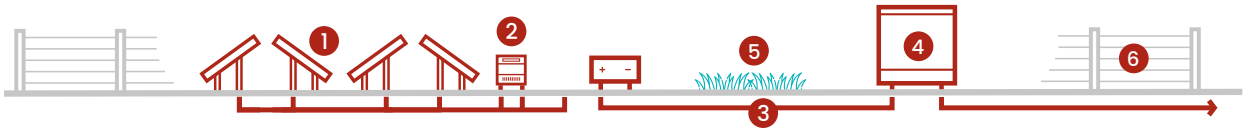
1 INTRODUCTION

1.1 OVERVIEW

1 This Design Approach Document (DAD) has been prepared to describe the process of design of the Great North Road (GNR) Solar and Biodiversity Park ('the Development'). This would entail the construction, operation, maintenance and decommissioning of a new solar, energy storage and biodiversity park, located to the north west of Newark-on-Trent, Nottinghamshire. With a potential generation capacity of around 800 megawatts (MW) AC of solar energy, the Development has the potential to provide enough clean, affordable energy to meet the power needs of approximately 400,000 homes while avoiding many thousands of tonnes of CO_2 emissions every year.

2 The Development would comprise ground mounted solar panels alongside an on-site Battery Energy Storage System (BESS), substations and associated infrastructure required to connect the scheme into the national grid at the existing Staythorpe Substation. The overall Order Limits (OL), currently extending to approximately 1,765 ha, also incorporate extensive areas which would remain undeveloped and areas which would be used for landscape and ecological mitigation and enhancement along with improvements to public access. Collectively these elements are described as 'the Development' and the scheme is known as the Great North Road (GNR) Solar and Biodiversity Park.

3 The principal components of the Development are illustrated in the diagram below.



Solar array

1. Solar panels

Electrical connection infrastructure

2. Inverter
3. Underground cable
4. Substation/BESS

Mitigation and enhancement measures

5. Landscape area

Ancillary works

6. Fencing

4 GNR Solar and Biodiversity Park is classified as a Nationally Significant Infrastructure Project (NSIP) as it would generate more than 50 MW of electricity. The Planning Act 2008 defines the consent regime for a NSIP and requires a Development Consent Order (DCO) application to be submitted through the Planning Inspectorate (PINS). The application will be submitted to PINS by Elements Green Trent Ltd ('the Applicant') and will be determined by the relevant Secretary of State.

1.2 SCOPE AND PURPOSE

5 The National Design Guide[1] notes that:

> *"Well-designed places and buildings come about when there is a clearly expressed 'story' for the design concept and how it has evolved into a design proposal. This explains how the concept influences the layout, form, appearance and details of the proposed development."* (Para. 16)

6 This Design Approach Document has been prepared to tell the design story of the GNR Solar and Biodiversity Park, drawing together information relating to the design of the Development and explaining in an accessible, non-technical manner what physical, environmental, human, technical and commercial factors have fed into the overall project design and how they have shaped it. It also sets out the national policy context and guidance that has informed the early design of the Development. It does not provide a full appraisal against current planning policy, which is set out within the Planning Statement.

7 The level of detail provided within this document sets out the process and story of the design to date and is based on information currently available. Environmental and technical work has informed the iterative process of consultation, design and appraisal to shape the proposals between PEIR and the submission of the DCO application.

8 In order to maintain flexibility within the design whilst providing an adequate degree of certainty in relation to potential effects for ongoing assessment work, a range of development parameters have been fixed, as set out in Chapter 5 of the PEIR, which align with the principles and descriptions set out within this document.

9 Other documents relating to the design, construction, management and decommissioning of the Development are encompassed within the Environmental Statement and should be read in conjunction with this Design Approach Document, including:

- Chapter 5, Development Description;
- Technical Appendix A5.1, Draft Outline Landscape and Ecological Management Plan (LEMP);
- Technical Appendix A5.2, Draft Outline Construction Traffic Management Plan (CTMP);
- Technical Appendix A5.3, Draft Outline Construction Environmental Management Plan (CEMP); and
- Technical Appendix A5.4, Draft Outline Fire Safety Management Plan (FSMP).

1 Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2021). National Design Guide: Planning practice guidance for beautiful, enduring and successful places. Available at: https://www.gov.uk/government/publications/national-design-guide.

1.3 GOOD DESIGN

10 Overarching National Policy Statement (NPS) for Energy (EN-1)[2] sets out expectations with respect to good design for energy infrastructure at section 4.7. It states (inter alia) that:

> *"Applying good design to energy projects should produce sustainable infrastructure sensitive to place, including impacts on heritage, efficient in the use of natural resources, including land-use, and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. It is acknowledged, however that the nature of energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area."* (Para. 4.7.2)

11 Government guidance[3] on the pre-application stage for NSIPs expands on this and sets out what is needed for consideration of good design and notes that:

> *"Good design is not simply about the look of a project; it is about the whole process of putting a project together so that it achieves the elements of good design including choice of location, vision, narrative, design principles and consultation programme."* (Para. 014)

12 The guidance goes on to note that applicants should explain how the design of a project responds to the overarching design principles for national infrastructure[4] as set out by the National Infrastructure Commission (NIC). These are defined as:

- **Climate** – mitigate greenhouse gas emissions and adapt to climate change;
- **People** – reflect what society wants and share benefits widely;
- **Places** – provide a sense of identity and improve our environment; and
- **Value** – achieve multiple benefits and solve problems well.

13 The concept of good design has been integral to the project from the outset. The following sections of this Design Approach Document set out the overarching vision for the project and the design principles that have guided its development before setting out the site context and describing the development of the design at each key stage of the project.

2 Department for Energy Security and Net Zero (2023). Overarching National Policy Statement for energy (EN-1). Available at: https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1.

3 Department for Levelling Up, Housing and Communities (2024). Planning Act 2008: Pre-application stage for Nationally Significant Infrastructure Projects. Available at https://www.gov.uk/guidance/planning-act-2008-pre-application-stage-for-nationally-significant-infrastructure-projects.

4 National Infrastructure Commission (No Date). Design Principles for National Infrastructure. Available at: https://nic.org.uk/studies-reports/design-principles-for-national-infrastructure/#tab-summary.

2 THE GNR VISION AND DESIGN PRINCIPLES

2.1 PROJECT VISION

14 ***The Development will support the UK's clean power mission by providing secure and sustainable energy to help tackle the climate crisis. It will respond positively to its local context, delivering multiple benefits for the environment, meaningfully boosting biodiversity and community.***

2.2 PROJECT SPECIFIC DESIGN PRINCIPLES

15 Using the framework set out by the NIC's[5] overarching design principles and drawing on good design criteria set out in NPS EN-1[6] and technology specific guidance provided in NPS for Renewable Energy Infrastructure (EN-3)[7], the following project specific design principles have been adopted:

- **Climate**
  - **CL1** - make an important contribution to achieving net zero greenhouse gas emissions by 2050 or sooner;
  - **CL2** - seek to minimise whole life emissions of the project; and
  - **CL3** - ensure the project can adapt flexibly to climate change.
- **People**
  - **PE1** - communicate openly with local communities and stakeholders;
  - **PE2** - minimise the need to use compulsory purchase powers;
  - **PE3** - seek local knowledge and views to inform and improve the project;
  - **PE4** - deliver wider societal benefit by funding the NG+ Community Benefit Fund;
  - **PE5** - be a good neighbour to local residents and businesses.
- **Places**
  - **PL1** - design at a human scale and embed nature-based solutions;
  - **PL2** - seek opportunities to enhance access and recreation to improve health and well-being;
  - **PL3** - deliver biodiversity net gain that exceeds mandatory requirements;
  - **PL4** - facilitate understanding and appreciation of local cultural heritage throughout the life of the project; and
  - **PL5** - design with local landscape character in mind, providing a legacy of landscape enhancement.
- **Value**
  - **VA1** - seek opportunities to grow planting materials within the site and nearby, for example, seed mixes and hedgerow plants;
  - **VA2** - measure performance of all aspects of the project against its objectives and use lessons learned to improve; and
  - **VA3** - encourage engagement and provide learning opportunities.

5 National Infrastructure Commission (No Date). Design Principles for National Infrastructure. Available at: https://nic.org.uk/studies-reports/design-principles-for-national-infrastructure/#tab-summary.

6 Department for Energy Security and Net Zero (2024). Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/media/64252f3b60a35e00120cb158/NPS_EN-1.pdf.

7 Department for Energy Security and Net Zero (2024). National Policy Statement for renewable energy infrastructure (EN-3). Available at: https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3.

16 As set out in NIC guidance on Project Level Design Principles[8], development of design principles is an ongoing and iterative process and these may evolve through the pre-consent stages of the project.

2.3 THE DESIGN PROCESS

17 Planning Practice Guidance (PPG) on Design: Process and Tools[9] and the National Design Guide both place a clear emphasis on the role of local communities in achieving good design with the PPG highlighting that:

> *"Early engagement and linking engagement activities to key stages of design decision-making and plan-making can empower people to inform the vision* […] *and the design of schemes."* (Para. 19)

18 Separately from government policy and guidance, the Institute of Environmental Management and Assessment (IEMA) has produced guidance on Shaping Quality Development[10] which considers the role of Environmental Impact Assessment (EIA) in shaping the design of projects. It sets out four principles to assist in shaping the design via the EIA process:

> *"**Early, effective and ongoing interaction** – occurs between environmental thinking and the design process;*
>
> ***Appropriate stakeholder engagement** – is used to gather external views on the approaches that could be taken, before a decision is made and only where the opportunity to actually influence the decision exists;*
>
> ***Consenting risk is managed** – saving time and costs by taking effective account of environmental issues within a responsive design process;*
>
> ***A clear narrative** – is developed that provides a record of how the project's design has responded to the environmental issues identified..."*

19 Both government and industry guidance establish these clear themes of people/community and environmental considerations as being critical to the design process and achieving good design.

20 More recently, in 2024, further guidance on design and process specifically relating to NSIPs has been set out in the NIC Project Level Design Principles[11] guidance and PINS have also set out their own guidance in NSIPs: Advice on Good Design[12]. These both note the inherent complexity and challenges involved in development of large scale

8 National Infrastructure Commission (2024). Project Level Design Principles. Available at https://nic.org.uk/app/uploads/NIC-Design-Principles-Handbook-Digital-PDF.pdf.

9 Department for Levelling Up, Housing and Communities (2019). Design: Process and Tools. Available at: https://www.gov.uk/guidance/design.

10 IEMA (2015). Environmental Impact Assessment Guide to Shaping Quality Development. Available at: https://www.iema.net/download-document/328273.

11 National Infrastructure Commission (2024). Project Level Design Principles. Available at: https://nic.org.uk/app/uploads/NIC-Design-Principles-Handbook-Digital-PDF.pdf

12 Planning Inspectorate (2025). Nationally Significant Infrastructure Projects: Advice on Good Design. Available at https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-good-design#design-principles-parameters-and-codes

infrastructure and place an emphasis on a structured design process, proportionate to the size and complexity of the development, being key to achieving desired outcomes, reducing risk and delivering multiple benefits for communities and the environment.

21 The PINS guidance illustrates the iterative design process as shown in the diagram below. To date the project has progressed through the 'Assemble', 'Research' and 'Co-ordinate' cycles through scoping, consultation and the production of the Preliminary Environmental Information Report (PEIR) and PEIR stage design, and the production of the Environmental Statement (ES) and the ES Design. This iterative process will continue past the EIA Stage, into the pre-construction stage of the Development.

22 The diagram overpage illustrates the design process for the Development, showing how design, consultation and the EIA interact and influence each other. It does not set out every detail of the process but sets out key stages where community/stakeholder consultation and environmental information feed into the ongoing design process. Technical and commercial factors also have an influence on the design process and feed into the design at every stage.

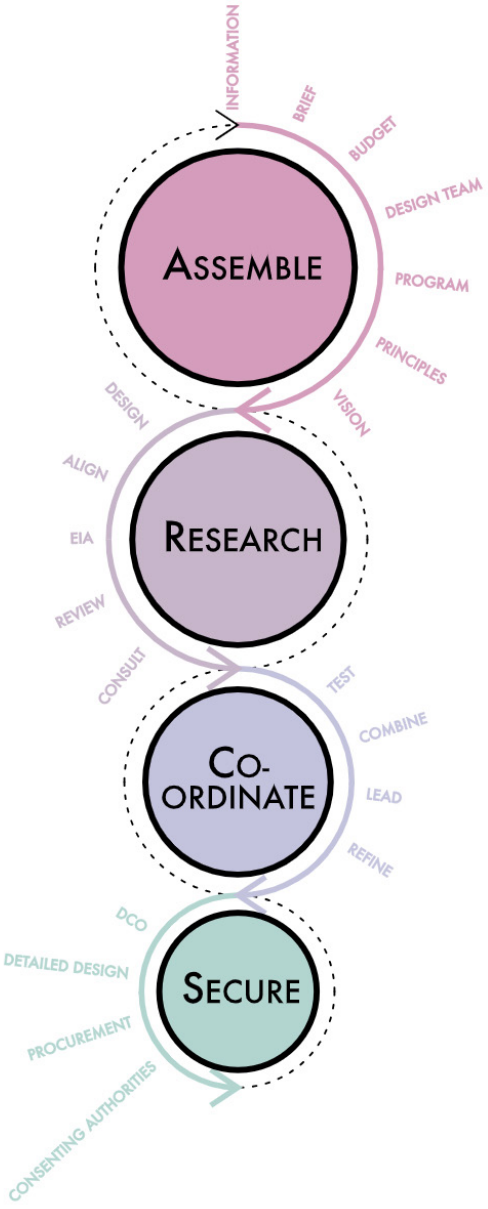
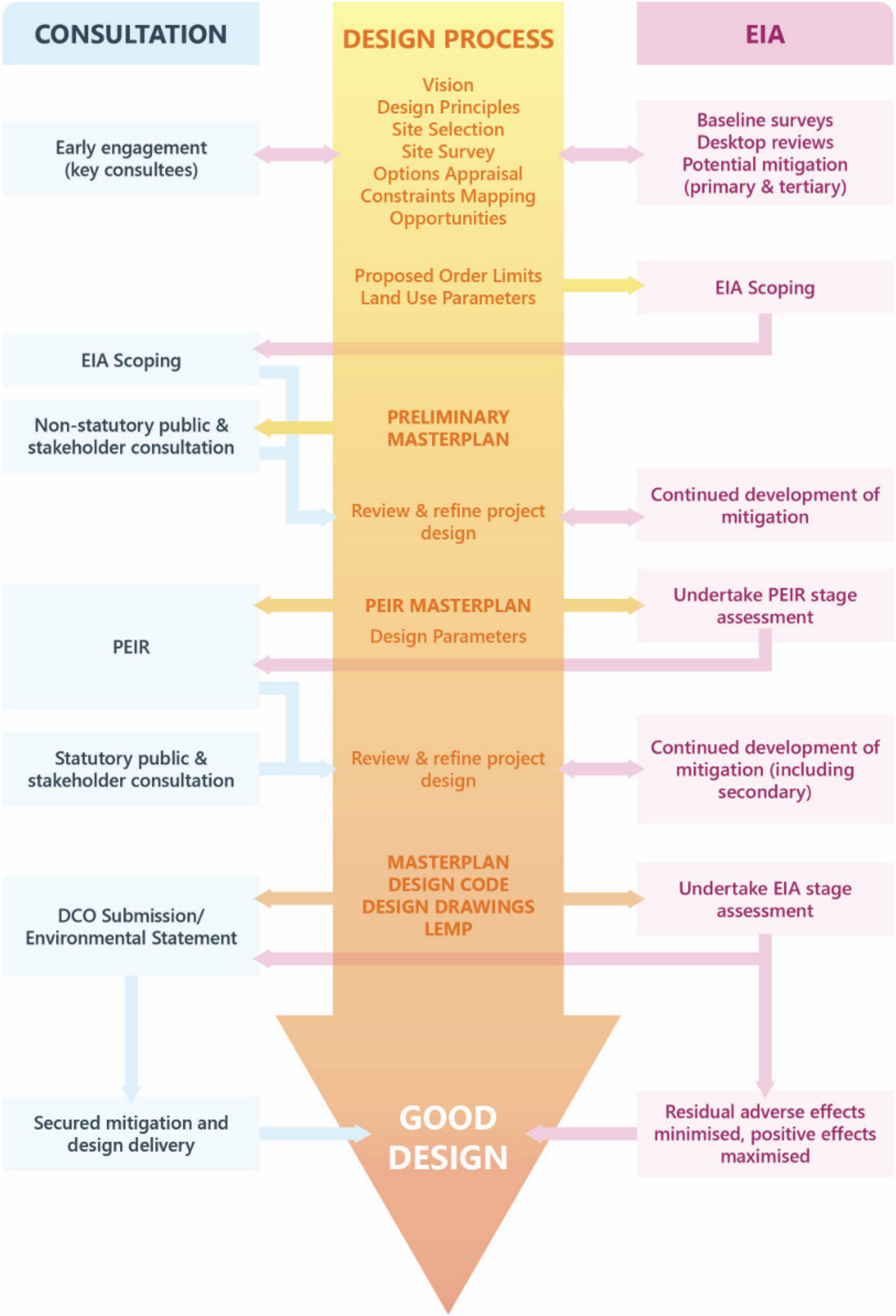


Diagram of design process from PINS guidance



GNR design process

3 SITE SELECTION

3.1 INTRODUCTION

23 The starting point of the site selection process was the acceptance of the Development to connect the project to the National Grid at Staythorpe substation and defining a site search area as set out in Section 4.3 of Chapter 4 Alternatives [EN010162/APP/6.2.4]. Once the site search rea was identified the project design principles, environmental factors, physical constraints to solar development and developer considerations all informed the site selection process.

24 The outcome of this process is shown on Figure 1 which illustrates the way in which those factors combine, showing the scoping stage Order Limits (Scoping Order Limits) and development areas, overlaid on a 'heat map' that shows the most suitable areas shaded green, through yellow to orange areas which are least suitable (all subject to detailed professional review). Areas shown in white are not suitable.

25 Factors included within the analysis meet the following criteria:

- **Readily available data** - downloadable national data or shown on local plans.
- **Likely to influence the extent or performance of the development** - factors easily designed around and likely to affect any site (e.g. hedgerows) are not included.

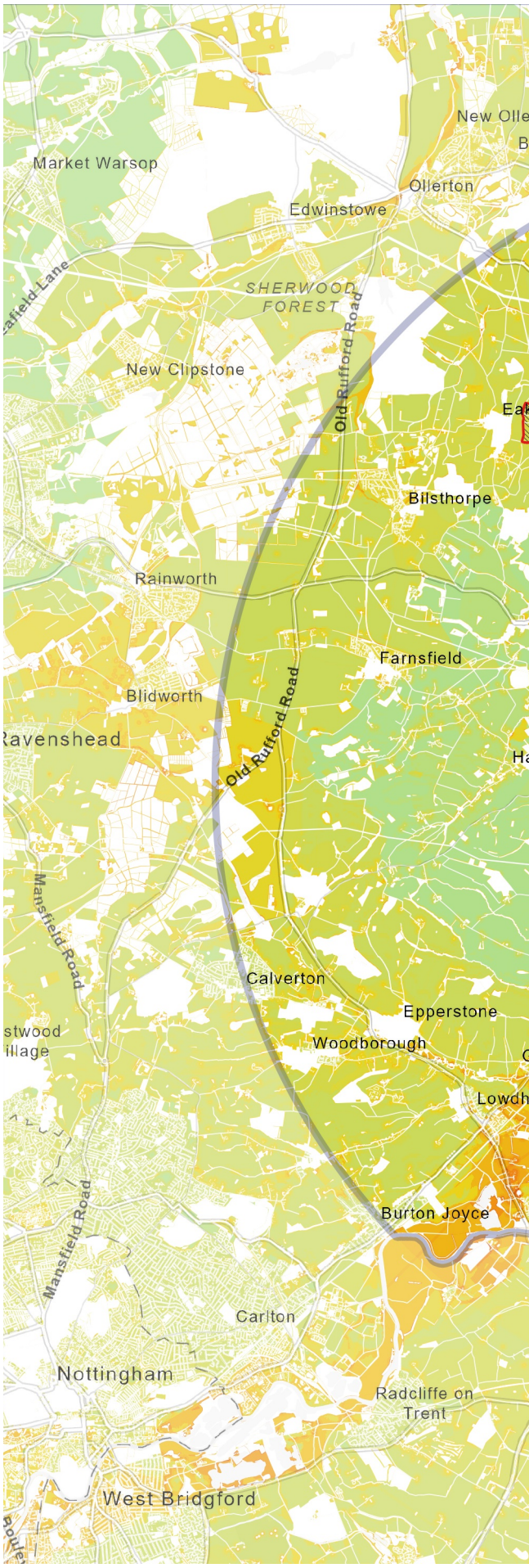
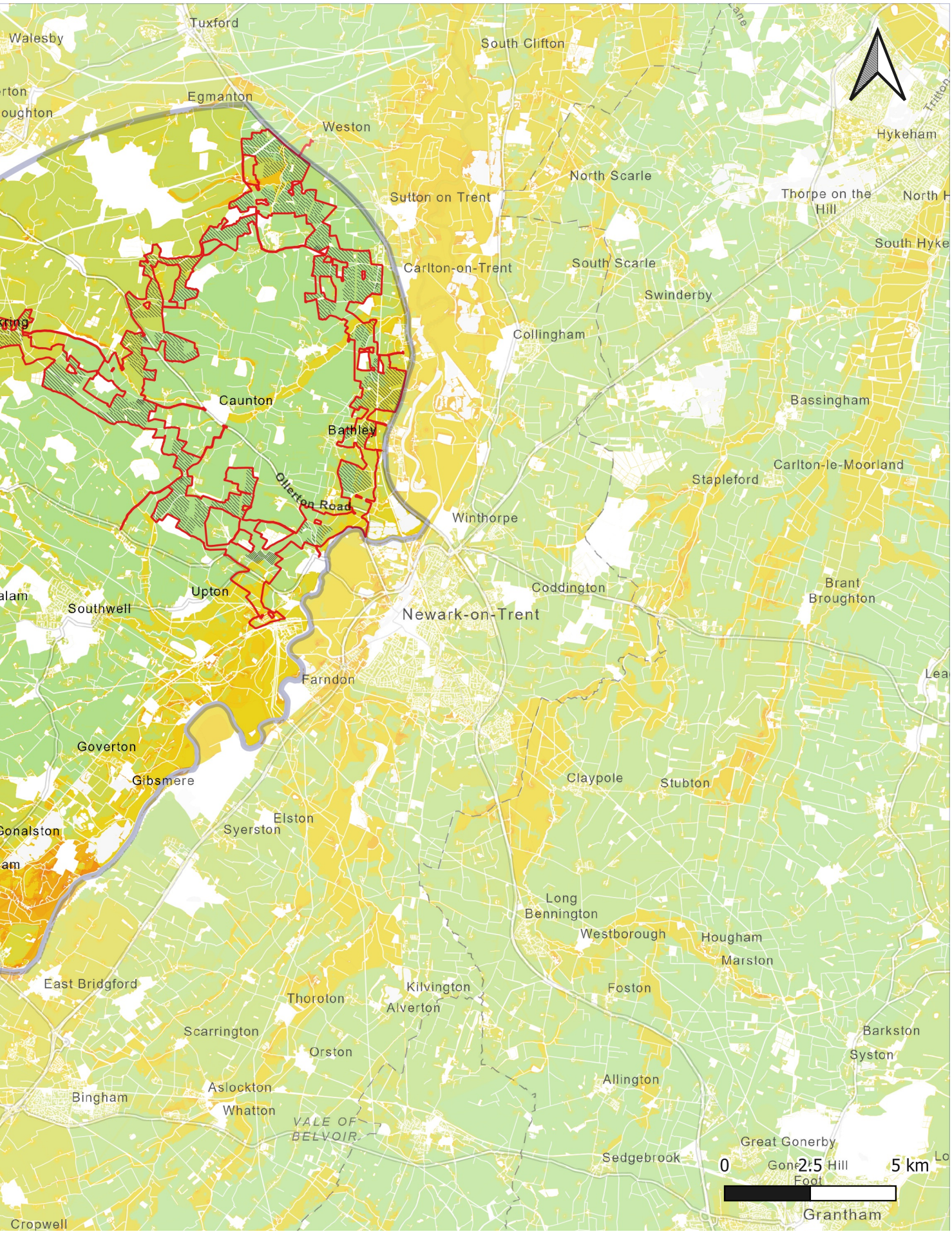


Figure 1: Site Selection Outcomes


Tuxford
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Sutton on Trent
Thorpe on the Hill
Carlton-on-Trent
South Scarle
Swinderby
Collingham
Caunton
Bathley
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Stapleford
Ollerton Road
Winthorpe
Upton
Southwell
Coddington
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Newark-on-Trent
Farndon
Goverton
Gibsmere
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Stubton
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Syerston
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Westborough
Hougham
Marston
East Bridgford
Thoroton
Kilvington
Alverton
Foston
Scarrington
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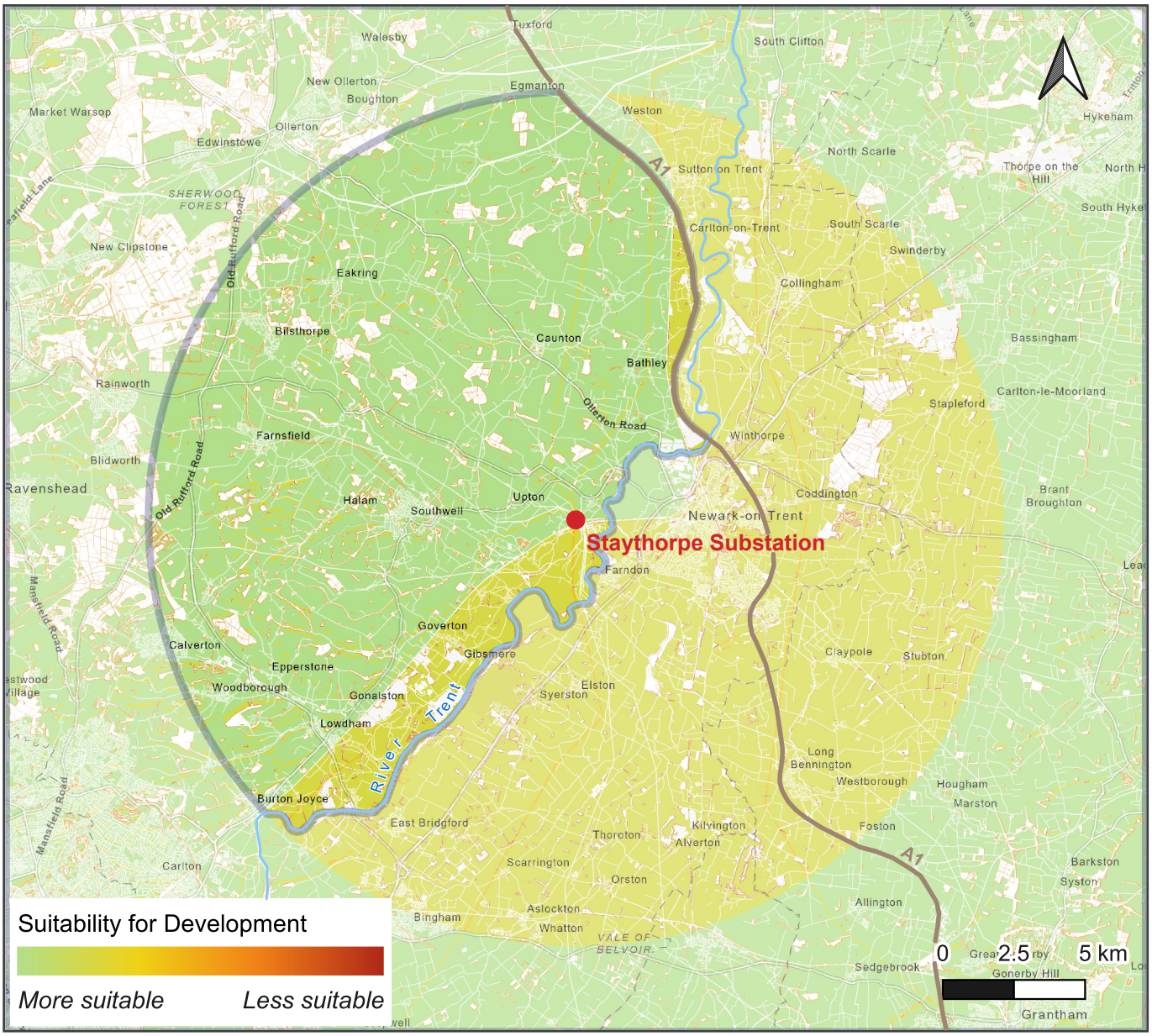


Figure 2: Physical and Developer Considerations

26 Figures 2-6 show the factors included in the 'heat map' analysis. In the analysis, areas identified as 'best avoided' carry greater weight than those identified as 'not preferred'.

27 The area of search shown on Figure 2 was identified as 15 km from the Staythorpe substation where the Development will connect to the National Grid. Greater distances involve the laying of longer cables resulting in additional costs, transmission losses and potential for increased environmental effects. The area south and east of the A1 and River Trent were also excluded due to the multiple environmental factors affecting the road and river corridor and the additional costs of crossing the Trent. The physical and developer considerations included in the analysis are as follows:

- **Areas not suitable for development** - buildings and woodlands;
- **Areas identified as best avoided** - land within 15 m of woodland land within 50 m of motorways, 20 m of A roads, 10 m of other roads and within 15 m of railway lines; land within 10 m of water bodies/courses; land within 11m of 132 kV overhead lines (OHLs) 275 kV OHLs; slopes steeper than 14°.

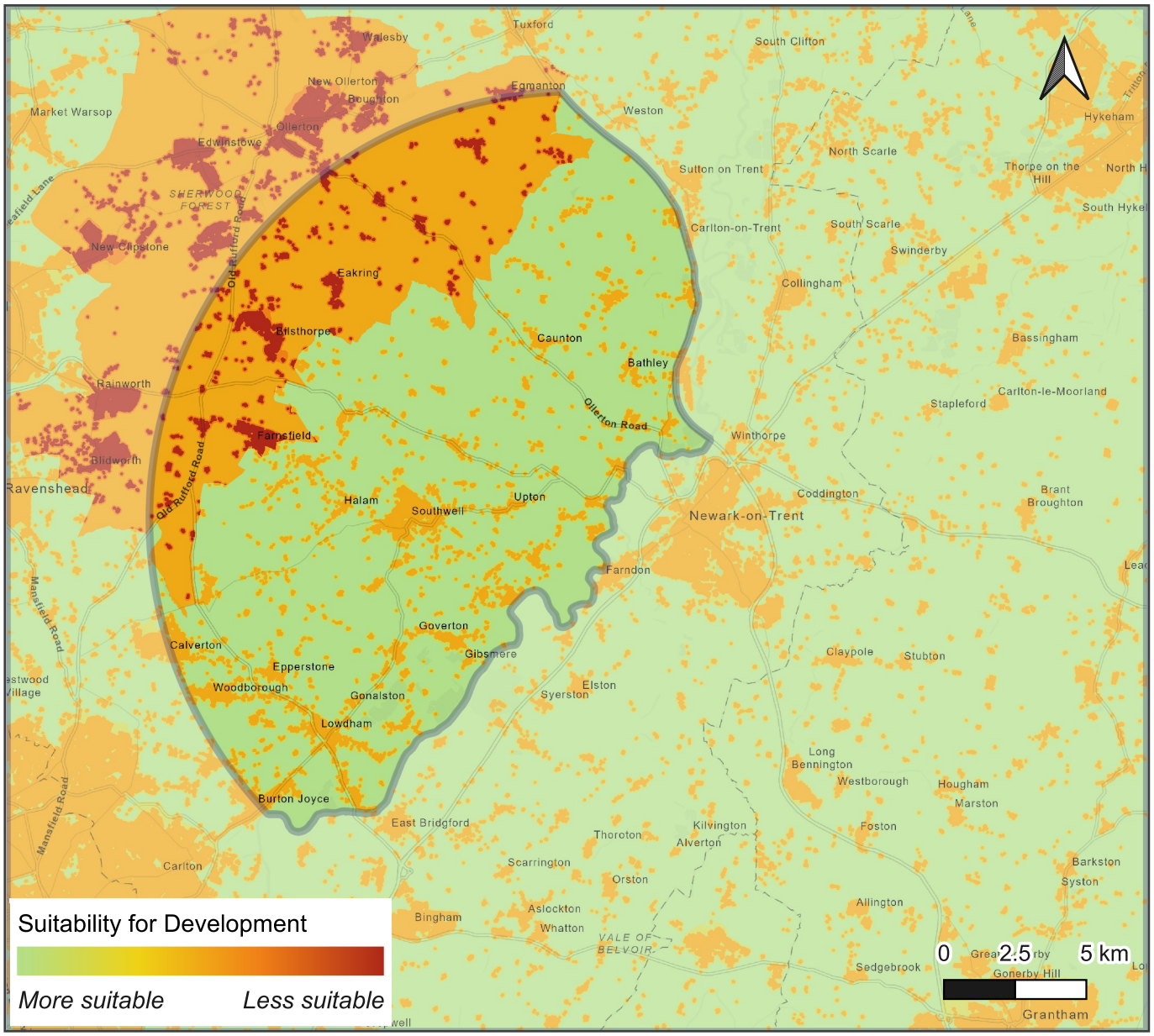


Figure 3: Landscape and Visual Considerations

- **Areas identified as not preferred** - north facing slopes with a gradient steeper than 5°; areas within 30 m of 400kV pylons and land to the south and east of the railway lines (reflecting potential difficulties with cable connections across the railway).

28 There are no World Heritage Sites in the area of search. Heritage factors included within the analysis are as follows:

- **Areas not suitable for development** - listed buildings; scheduled monuments; conservation areas; historic parks and gardens; and battlefields.
- **Areas identified as best avoided** - local heritage designations (Historic landscape at Laxton and Sherwood Forest Heritage Area); land within 50 m of scheduled monuments, and land within 50 m of listed buildings.

29 Land use factors have been included in the analysis as follows:

- **Areas not suitable for development** - parks and recreation areas.
- **Areas identified as best avoided** - local plan allocated development sites; local

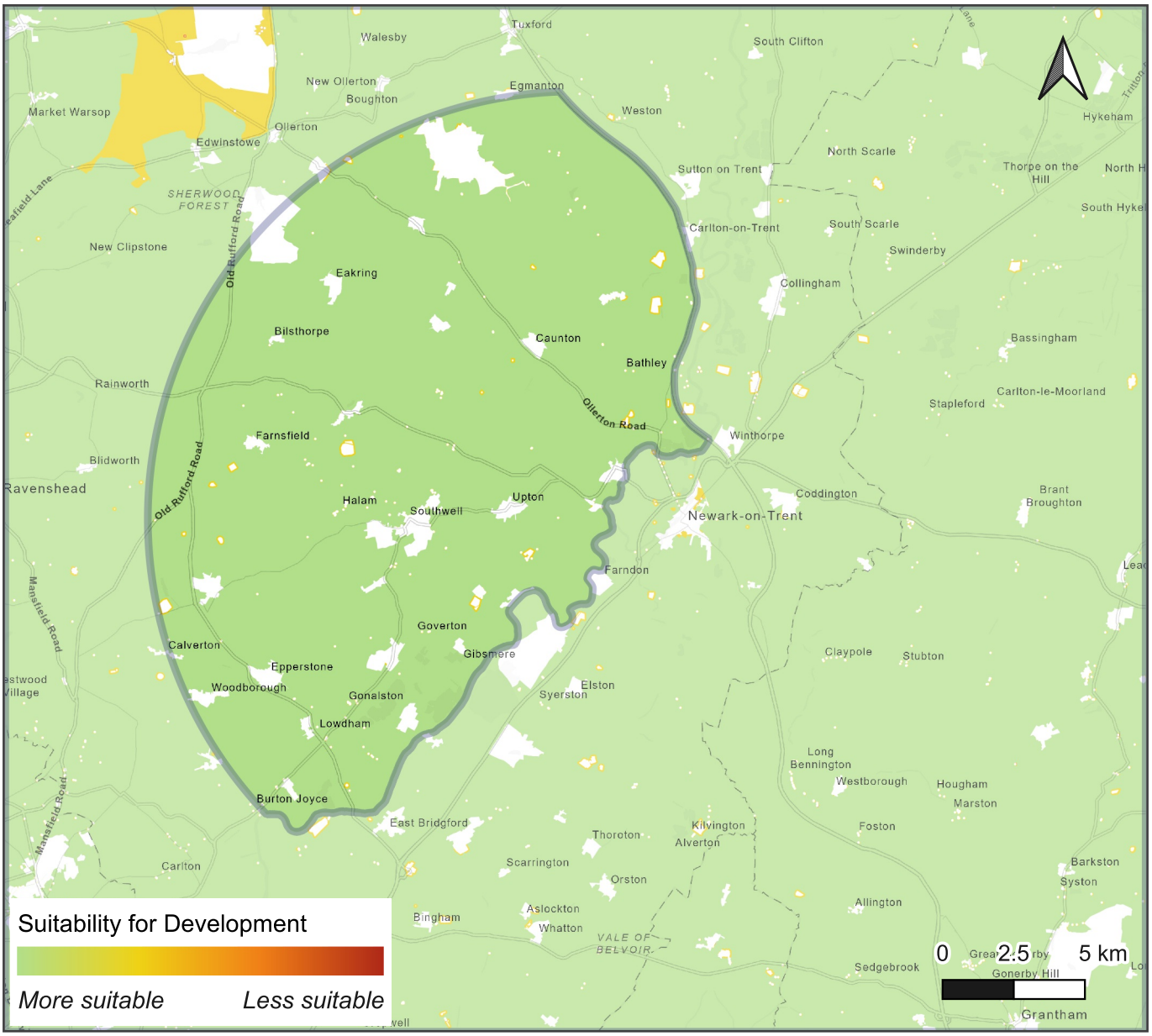


Figure 4: Heritage Considerations

plan safeguarded areas; Agricultural Land Classification (ALC) Grade 1 land; and Green Belt.

- **Areas identified as not preferred** - minerals safeguarded areas; ALC Grade 2 land; land within 5 m of a Public Right of Way; open access land (including commons).

30 There are no Ramsar or proposed Ramsar sites, Special Protection Areas (SPAs) or 'potential' SPAs, or 'possible' Special Areas of Conservation (SACs), in the area of search which would all have been unsuitable for development. Hydrology, ecology and geology factors have been included in the analysis as follows:

- **Areas not suitable for development** - Sites of Special Scientific Interest (SSSIs); Special Areas of Conservation (SACs); National Nature Reserves (NNRs); ancient woodland; and Local Nature Reserves (LNRs).
- **Areas identified as best avoided** - flood zones 2 and 3; local wildlife sites; irreplaceable habitats (as identified within the Priority Habitat Inventory) and Local Geological Sites.

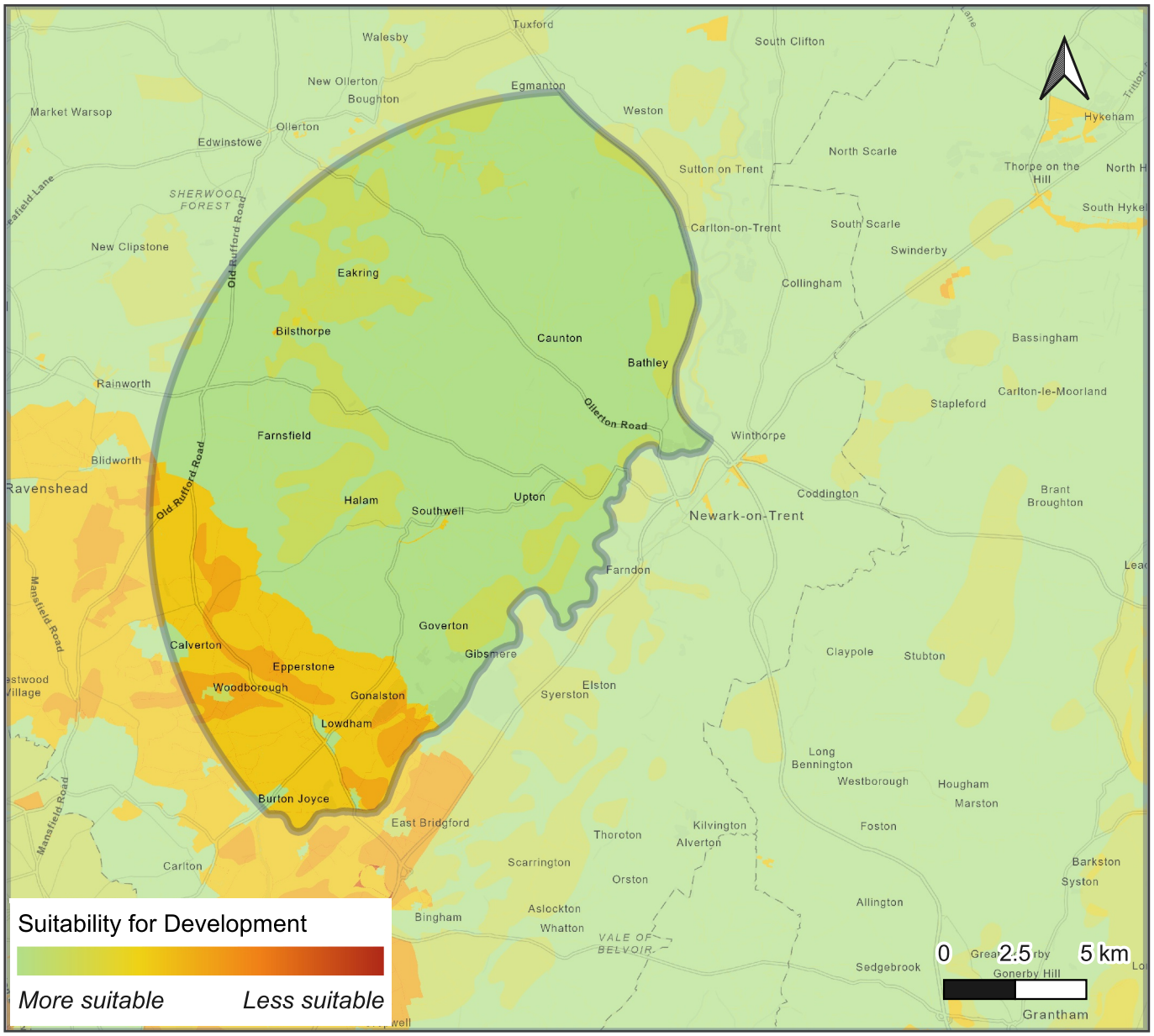


Figure 5: Land Use Considerations

3.2 IDENTIFYING DEVELOPMENT AREAS

3.2.1 Land Assembly

31 The ownership of larger parcels of land within the parts of the search area with fewer constraints were identified. The land assembly involved a combination of assessment of landholdings introduced to the Applicant by land agents and land that the Applicant pursued by actively approaching landowners. This process worked outwards from the accepted grid connection point at Staythorpe substation, favouring lower constraint / more suitable areas and with a stronger preference placed on land parcels closer to the substation. This ensured efficiency in terms of the future electrical design and use of materials for the project.

32 As potentially available land was identified, high level technical and environmental reviews were undertaken to establish potential constraints to development with more suitable land parcels retained and obviously constrained land discarded. As this process

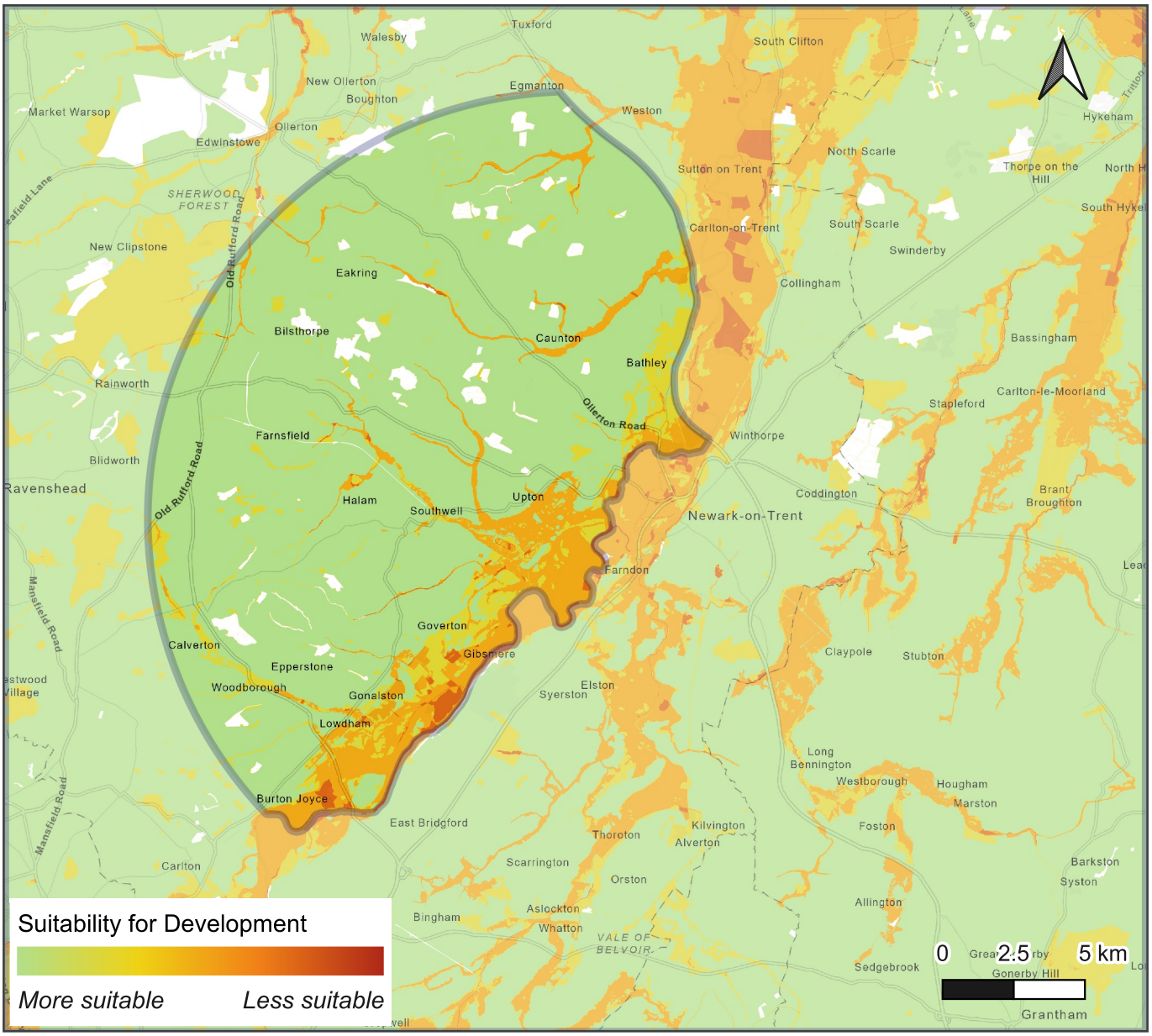


Figure 6: Hydrology, Ecology and Geology Considerations

progressed, further landowners were approached and the project team was also directly approached by other landowners wishing to be involved in the project.

33 Early on in the land assembly process it was decided that strong preference would be given to minimising the use of compulsory acquisition powers in order to secure land for the Development. Although this falls within the scope of NSIPs and the DCO process, the potential for adverse impacts on unwilling participants was recognised and the Applicant has made good progress on private treaty agreements to minimise this necessity. Further details relating to the land assembly are set out in Section 4.4 of Chapter 4 Alternatives [EN010162/APP/6.2.4].

3.2.2 Defining Draft Order Limits and Potential Development Areas

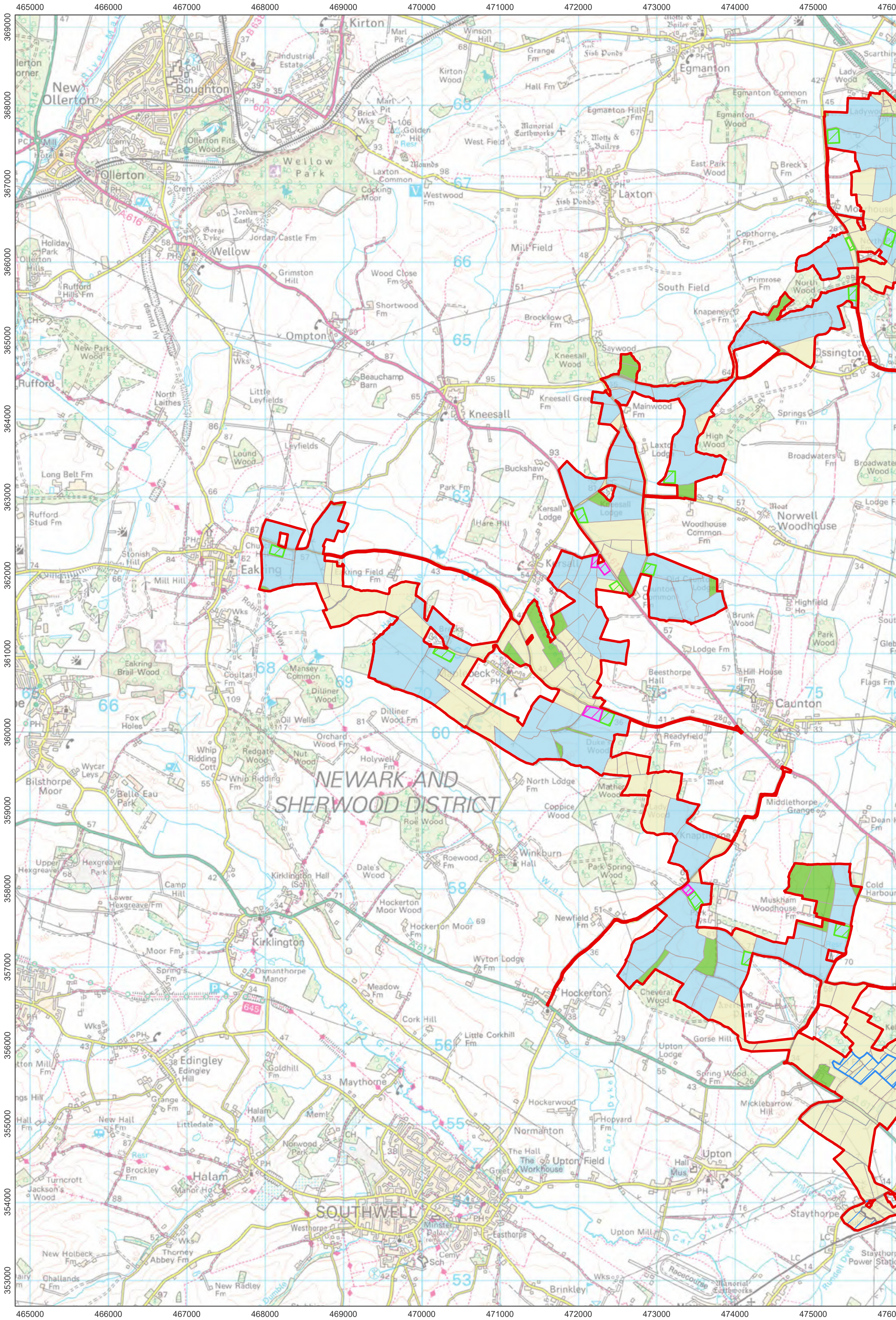
34 Once sufficient available land was identified to allow development of a project that would maximise utilisation of the grid connection available, a more detailed review was undertaken by environmental specialists to identify areas more and less suited for solar

PV, cable routes (to link different solar PV areas and connect to the grid), access (for construction and maintenance), mitigation and enhancement.

35 This was complemented by a technical review where engineering specialists ensured that the areas identified for solar PV were viable, could be connected electrically and locations were proposed for other key infrastructure including the BESS, substations and compounds. This was an iterative process with environmental and technical teams working in conjunction to define the broad development parameters of the Development and ultimately the Scoping Order Limits required to accommodate it. Within the Scoping Order Limits, broad development areas were defined as follows:

- **Solar Areas** - encompassing the solar PV array and associated infrastructure elements; including transformers, inverters, access tracks, fences, etc.
- **Compounds** - comprising permanent compound areas within which the BESS and substations would be built and temporary compounds used during construction.
- **Cable Areas** - available for underground cables and access.
- **Other Areas** - available for environmental mitigation and enhancement (noting that this may also be included within any of the above areas) along with minor ancillary infrastructure such as access tracks.

36 These areas formed the basis of the EIA scoping process and are described in detail within the EIA Scoping Report and illustrated by EIA Scoping Report Figure 2.2 which is included on the following page.



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Egmanton
Kirton Wood
Hall Fm
New Ollerton
Boughton
Ollerton
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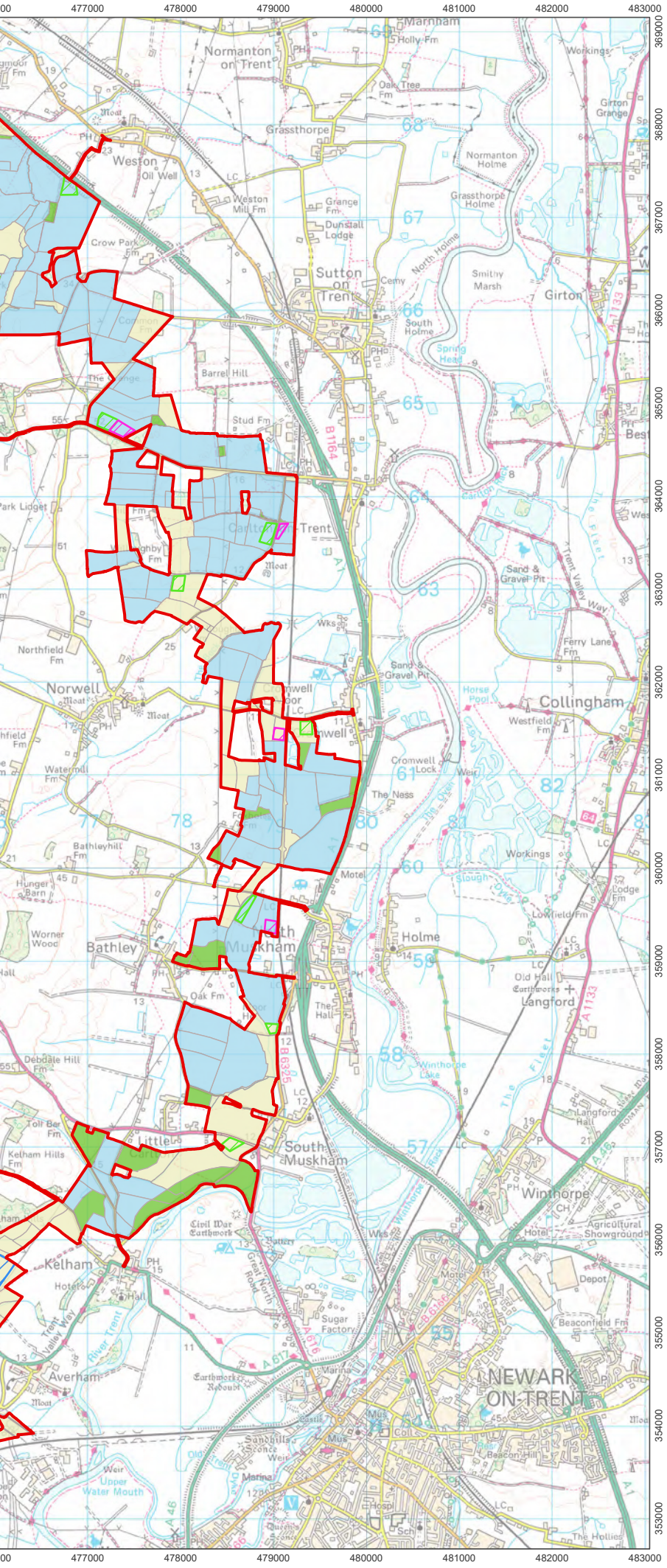
Wellow Park
Laxton Common
Cocking Moor
Westwood Fm
Laxton
West Field
Manorial Earthworks
Egmanton Hill Fm
Egmanton Wood
Egmanton Common Fm
Lady Wood
East Park Wood
Breck's Fm
Jordan Castle
Jordan Castle Fm
Wellow
Grimston Hill
Wood Close Fm
Mill Field
Copthorne Fm
South Field
Primrose Fm
North Wood
Holiday Park
Ollerton Hills
Rufford Hills Fm
Shortwood Fm
Ompton
Brocklow Fm
Knapeney Fm
Saywood
Ossington
New Park Wood
Kneesall Wood
Rufford
Beauchamp Barn
Little Leyfields
North Laithes
Kneesall
Kneesall Green Fm
Mainwood Fm
Springs Fm
High Wood
Laxton Lodge
Leyfields
Lound Wood
Buckshaw Fm
Broadwaters Fm
Broadwater Wood
Long Belt Fm
Park Fm
Kersall Lodge
Norwell Woodhouse
Woodhouse Common Fm
Rufford Stud Fm
Hare Hill
Eakring
Stonish Hill
Mill Hill
Eakring Field Fm
Kersall
Old Caunton Lodge
Caunton Common
Highfield Ho
Brunk Wood
Park Wood
Robin Hood Way
Lodge Fm
Eakring Brail Wood
Coultas Fm
Mansey Common
Dilliner Wood
Beesthorpe Hall
Hill House Fm
Caunton
Flags Fm
Fox Holes
Oil Wells
Dilliner Wood Fm
Orchard Wood Fm
Readyfield Fm
Whip Ridding Cott
Redgate Wood
Nut Wood
Holywell Fm
Duke's Wood
Bilsthorpe Moor
Belle Eau Park
Whip Ridding Fm
NEWARK AND SHERWOOD DISTRICT
North Lodge Fm
Mather Wood
Coppice Wood
Middlethorpe Grange
Dean Hall Fm
Roe Wood
Winkburn Hall
Upper Hexgreave
Hexgreave Park
Camp Hill
Lower Hexgreave Fm
Dale's Wood
Roewood Fm
Park Spring Wood
Kirklington Hall (Sch)
Hockerton Moor Wood
Muskham Woodhouse Fm
Cold Harbour
Newfield Fm
Kirklington
Hockerton Moor
Moor Fm
Spring's Fm
Osmanthorpe Manor
Wyton Lodge Fm
Meadow Fm
Hockerton
Cheveral Wood
Cork Hill
Little Corkhill Fm
Gorse Hill
Edingley
Edingley Hill
Goldhill Fm
Upton Lodge
Spring Wood Fm
Maythorne
Grange Fm
Halam Mill
Hockerwood
Micklebarrow Hill
New Hall Fm
Littledale
Normanton
Hopyard Fm
Norwood Park
The Hall
The Workhouse
Upton Field
Upton
Turncroft
Brockley Fm
Halam
Manor Ho
Jackson's Wood
SOUTHWELL
Westhorpe
Minster
Easthorpe
Staythorpe
New Holbeck Fm
Thorney Abbey Fm
Upton Mill
Racecourse
Manorial Earthworks
Challands Fm
New Radley Fm
Brinkley
Staythorpe Power Station



Order Limits

Staythorpe National Grid Substation

BESS 400kV Compound

Substation Areas

Construction Compound Areas

Development Areas

Cable Area

Other Area

Solar Area

1:60,000 Scale @ A3

0 0.5 1 2 km

Ref:

Date: 07/11/2023

Indicative Developable Areas
Figure 2.2 - Overview

Great North Road Solar Park
Scoping Report


NEWARK AND SHERWOOD DISTRICT
0
1
2 km

4 SITE CONTEXT

4.1 INTRODUCTION

37 This section provides an overview of the environmental context within and around the ES Order Limits.

4.1.1 Site Context and Order Limits

38 The ES Order Limits cover a ring of land parcels that broadly extends from the A1/ village of Egmanton in the north to the village of Staythorpe in the south, and from the Cromwell in the east to Eakring in the west.

39 The ES Order Limits cover approximately 1,765 ha, of which approximately 1,025 ha are solar PV fields.

40 The wider area within the ES Order Limits is generally composed of agricultural land, interspersed with occasional woodlands. Villages and hamlets are connected by rural roads and Public Rights of Way (PRoW), some of which are located within the ES Order Limits. Smaller fields and tree cover are more common close to the villages and along watercourses, with larger and more open fields set further away.

41 Topographically land within the ES Order Limits ranges from 10m Above Ordnance Datum (AOD) to 60 m AOD, across a gently undulating landscape and is generally lower lying in the east towards the River Trent.

42 Main transport routes in the local area include the A1 and East Coast Main Line railway which run adjacent to and through the eastern edge of the ES Order Limits, and the A616 and A617 which head northwest from Newark-upon-Trent which lies around 1 km to the southeast of the ES Order Limits.

Order Limits

Order Limits

4.2 LOCAL LANDSCAPE CHARACTER

43 At a local level Landscape Character Types (LCTs) within the PEIR Order Limits are defined within Newark and Sherwood's Landscape Character Assessment[13]. The majority of the Development would lie within the Village Farmlands with Ancient Woodland LCT within the Mid Nottinghamshire Farmland Regional Character Area (RCA), with areas to the east mostly within the Village Farmlands LCT within the Trent Washlands RCA. Small parts of the Development would be within the Meadowlands/ River Meadowlands LCTs.

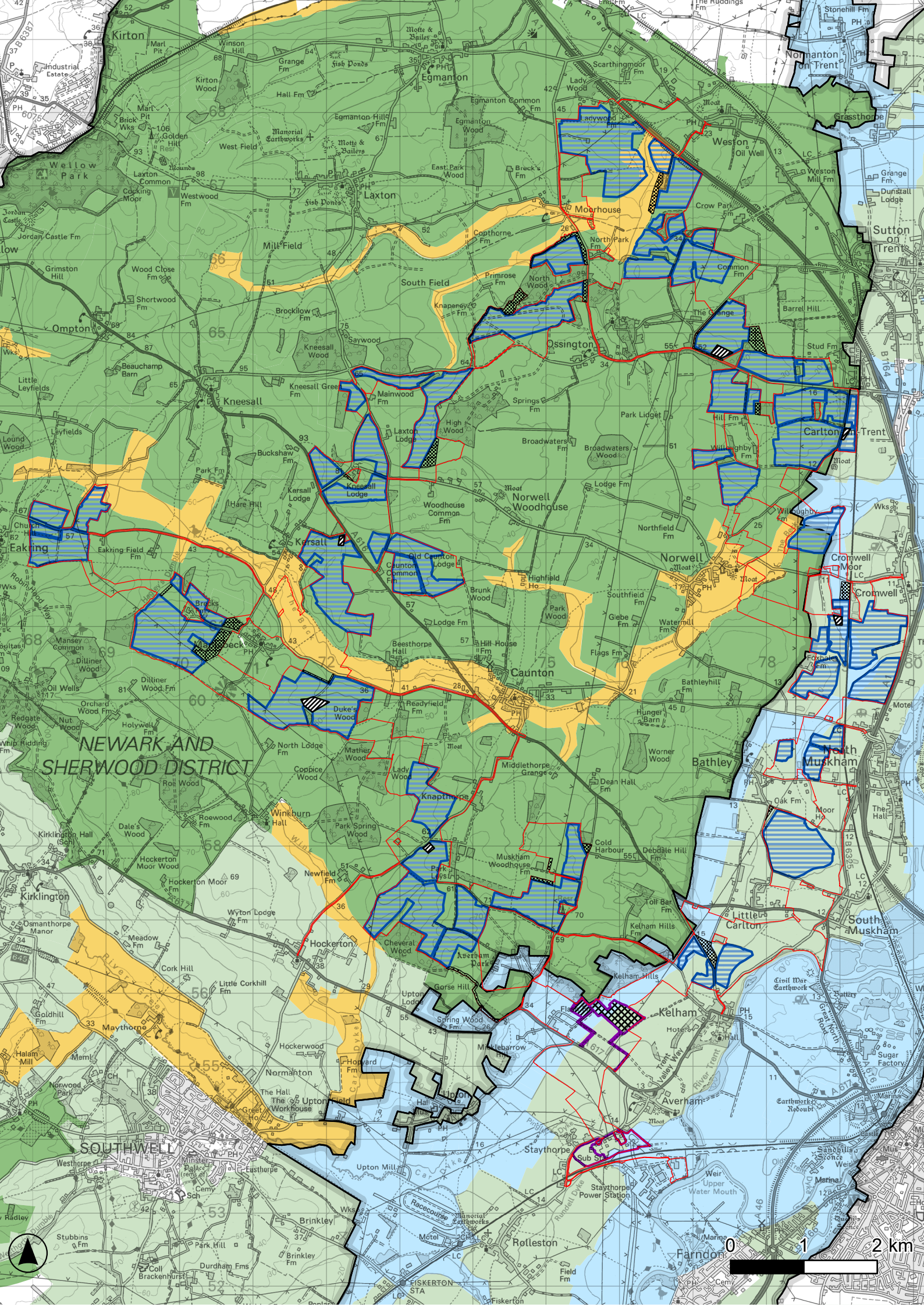
44 The Village Farmlands LCTs within the two adjacent Regional Character Areas have characteristics in common and form the larger scale, mostly rectilinear, primarily arable, gently undulating fields between the River Trent and the more wooded Sherwood area to the west. The Meadowlands LCT is associated with water courses and has a less rectilinear pattern with smaller pastoral fields and greater tree cover. The River Meadowlands are largely flat and have fewer hedgerows, but have trees along watercourses and transport corridors. Given these character differences, the Village Farmlands LCTs form the focus for the Development, with limited development within the more sensitive Meadowlands LCTs.

13 Newark and Sherwood District Council (2013). Newark and Sherwood Landscape Character Assessment. Available at: https://www.newark-sherwooddc.gov.uk/lcaspd/

Local Landscape Character

Order Limits
Proposed Solar Array Areas
BESS and 400kV Substation Development Areas
Substations (400kV & intermediate)
BESS
Proposed Woodland

Landscape Character
Regional Character Areas
Newark & Sherwood Landscape Character Types
Meadowlands
River Meadowlands
Village Farmlands
Village Farmlands with Ancient Woodlands


NEWARK AND SHERWOOD DISTRICT
Kirton
Egmanton
Laxton
Wellow Park
Moorhouse
Ossington
Kneesall
Ompton
Eakring
Kersall
Norwell Woodhouse
Norwell
Caunton
Carlton on Trent
Sutton on Trent
Cromwell
Bathley
North Muskham
South Muskham
Little Carlton
Kelham
Averham
Staythorpe
Rolleston
Farndon
Hockerton
Winkburn
Kirklington
Normanton
SOUTHWELL
Upton
0
1
2 km

4.2.1 Village Farmlands Character

Undulating larger scale arable landscape with fields divided by hedges and trees

Red brick and pantile villages, barns, and infrastructure form part of the character

5.2.1 Meadowlands Character

Smaller scale lower-lying pastoral landscape with trees along field boundaries within the Mid Nottinghamshire Farmlands RCA

More open, flatter landscape influenced by the A1 and railway line in the Trent Washlands RCA

4.3 SENSITIVE VISUAL RECEPTORS

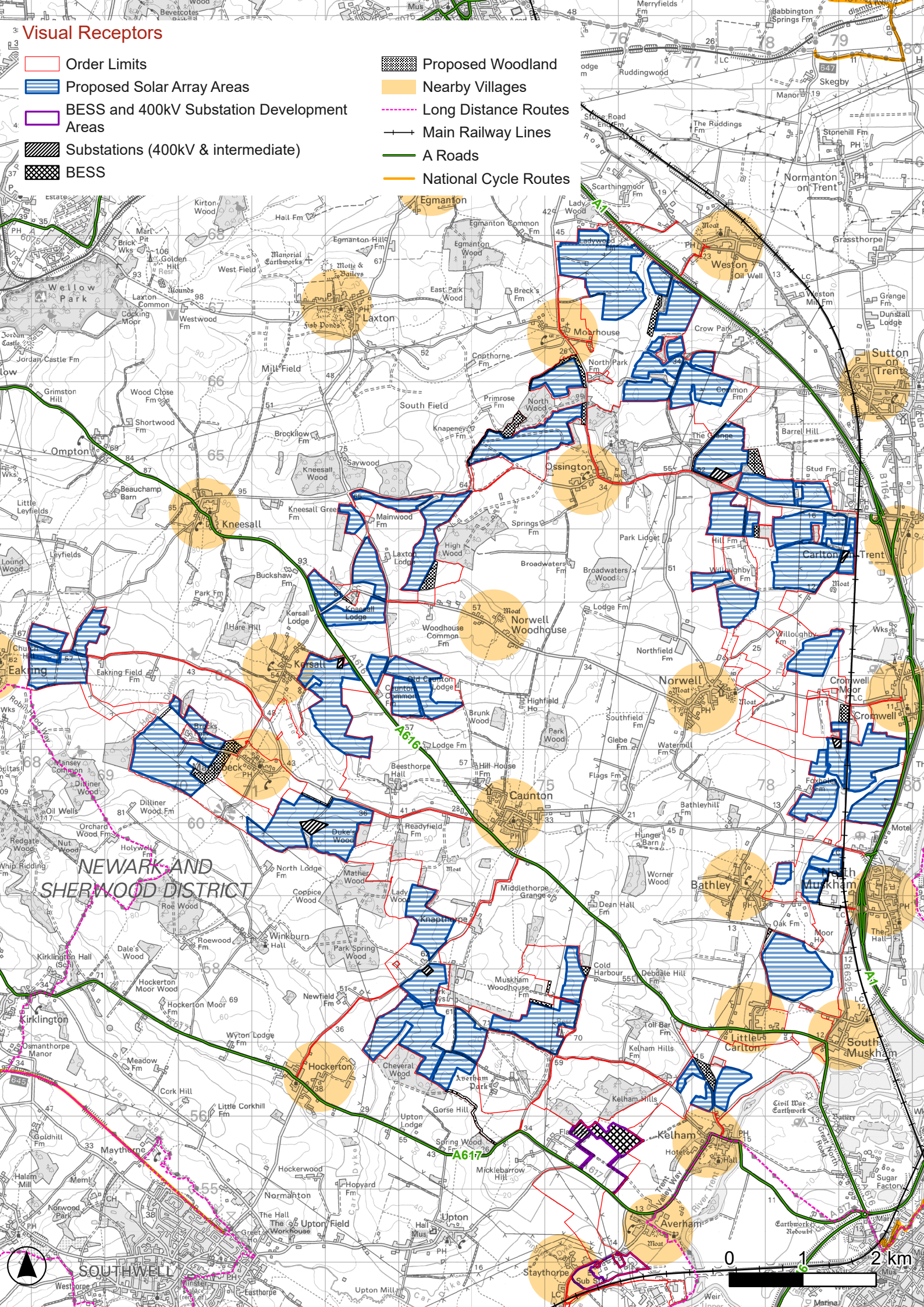
45 Sensitive visual receptors in the local area include residents of nearby villages, people living in rural properties outside of the villages, users of long distance footpaths and Public Rights of Way, and local road users.

46 Views out from streets and public places within villages are often contained by buildings and vegetation and the Development has been designed to minimise visibility from villages, avoiding fields which were more openly visible.

47 Footpaths have a mix of more contained and open views, with some paths running through woodlands and between hedges and others across open fields with wide vistas. Views from local roads are often constrained by roadside hedges and trees, although there are also more open vistas where roadside vegetation is absent.

Roadside hedges often constrain views

Occasional open vistas


Visual Receptors
Order Limits
Proposed Solar Array Areas
BESS and 400kV Substation Development Areas
Substations (400kV & intermediate)
BESS
Proposed Woodland
Nearby Villages
Long Distance Routes
Main Railway Lines
A Roads
National Cycle Routes
NEWARK AND SHERWOOD DISTRICT
SOUTHWELL
Egmanton
Laxton
Moorhouse
Weston
Grassthorpe
Sutton on Trent
Ossington
Kneesall
Ompton
Norwell
Norwell Woodhouse
Carlton on Trent
Kersall
Eakring
Caunton
Bathley
North Muskham
South Muskham
Little Carlton
Cromwell
Hockerton
Kirklington
Kelham
Averham
Upton
Staythorpe
Normanton on Trent
Scarthingmoor
Skegby
Ruddingwood
Wellow Park
A1
A616
A617
0
1
2 km

5 DESIGN DEVELOPMENT: SCOPING TO PEIR

5.1 INTRODUCTION

48 Following submission of the EIA Scoping request, a Preliminary Masterplan was developed based on the development areas set out for scoping. This included some initial refinements to solar areas arising due to technical and landowner factors and illustrated:

- Scoping Order Limits
- Above ground energy infrastructure
- Proposed landscape and ecological mitigation areas
- Proposed public access enhancements, visitor facilities and interpretation

49 The Preliminary Masterplan, as illustrated on the following page, identified the broad scope of the Development and key project elements in a simple and accessible format to enable early stage communication with the local community and stakeholders.

5.1.1 Non-Statutory Consultation

50 An initial 6-week period of non-statutory community consultation was undertaken over January and February 2024 to introduce the project to the public, during which the preliminary masterplan was presented along with a range of other environmental and technical information relating to the Development. This included a series of public information events held in the local area and online, launch of the project website and initial engagement with a range of local organisations and public interest groups.

51 Feedback was collated through this period, as summarised in the Phase One Consultation Summary Report[14], and a proactive approach to comments was taken. Wherever direct requests were made for design changes, these were considered by the project team and provisional amendments were identified where these were proportionate and appropriate. Following the initial consultation period an updated interim masterplan was produced to illustrate potential changes arising from feedback at this stage which was published on the project website.

52 Engagement with local communities and stakeholders has remained ongoing following the initial 6-week non-statutory consultation period through a range of different forums, including:

- Parish Councils - attending and presenting at local meetings
- Local interest groups, including:
  - Local wildlife trusts
  - Sherwood Forest Trust
  - Trent River Trust
  - British Horse Society
  - YMCA
  - Local cycling, walking and other sports groups
  - Local businesses

14 Elements Green (2024). Community Newsletter and Phase One Consultation Summary Report. Available at https://static1.squarespace.com/static/63f72e89a711f627aa3bed70/t/66aa25a9441f413b3ef5894b/1722426797456/240731_Great+North+Road+Phase+One+Consultation+Summary+Report.pdf

5.1.2 Environmental Survey and Assessments

53 Environmental survey and assessment work has been ongoing throughout the project, increasing in intensity and focus following EIA scoping and taking on board feedback from statutory consultees. Environmental survey and baseline assessment outcomes have fed back into the design process, generally resulting in gradual reductions of the solar development areas as new constraints have been identified or areas required for specific environmental mitigations have been allocated.

5.1.3 Technical Design

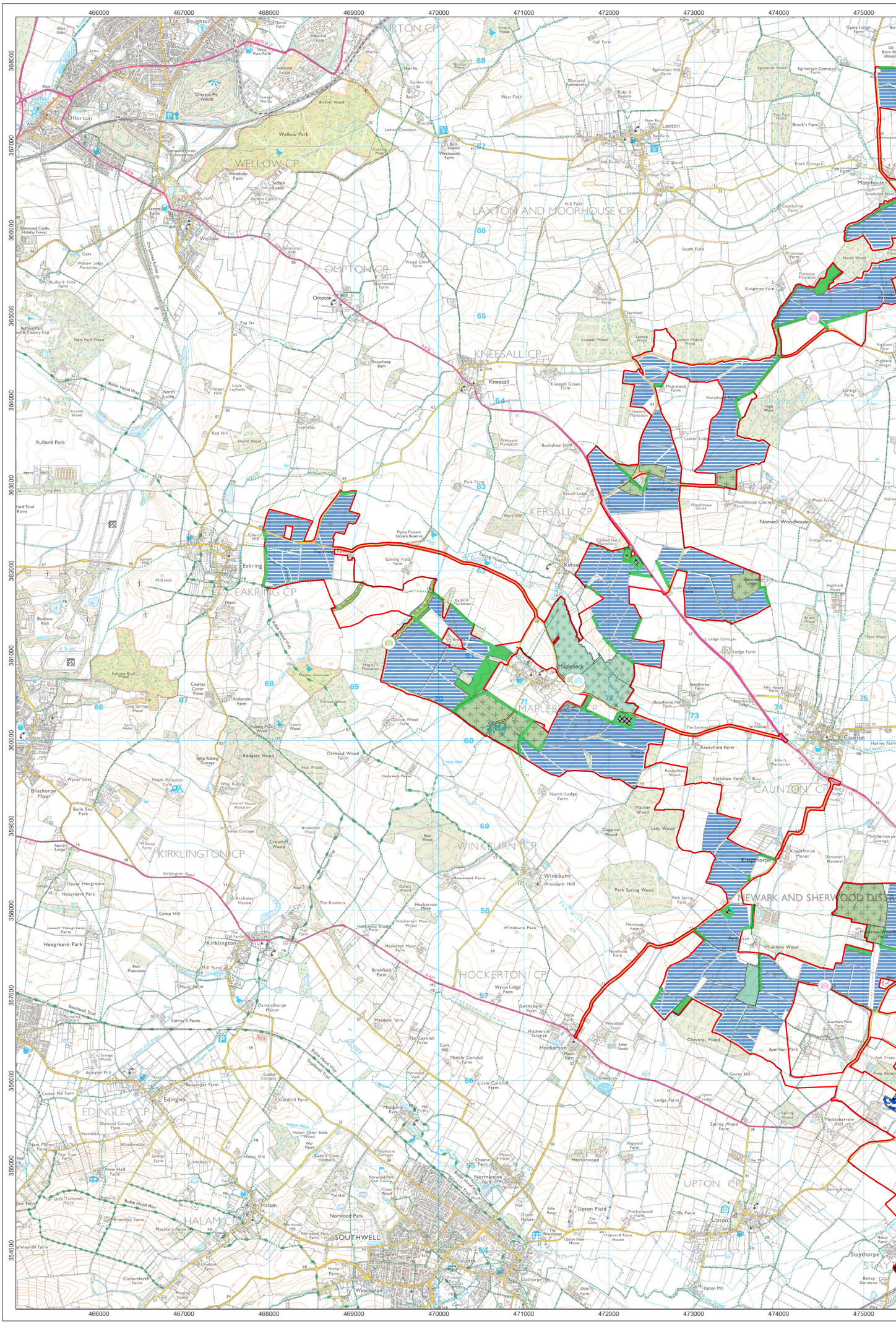
54 Technical design work, particularly in relation to the overall electrical system, has been ongoing through this stage which has built upon the broad parameters which informed the site selection process and initial definition of the Scoping Order Limits. This ongoing technical design has allowed rationalisation of cable routes and infrastructure, including the locations and number of substations.

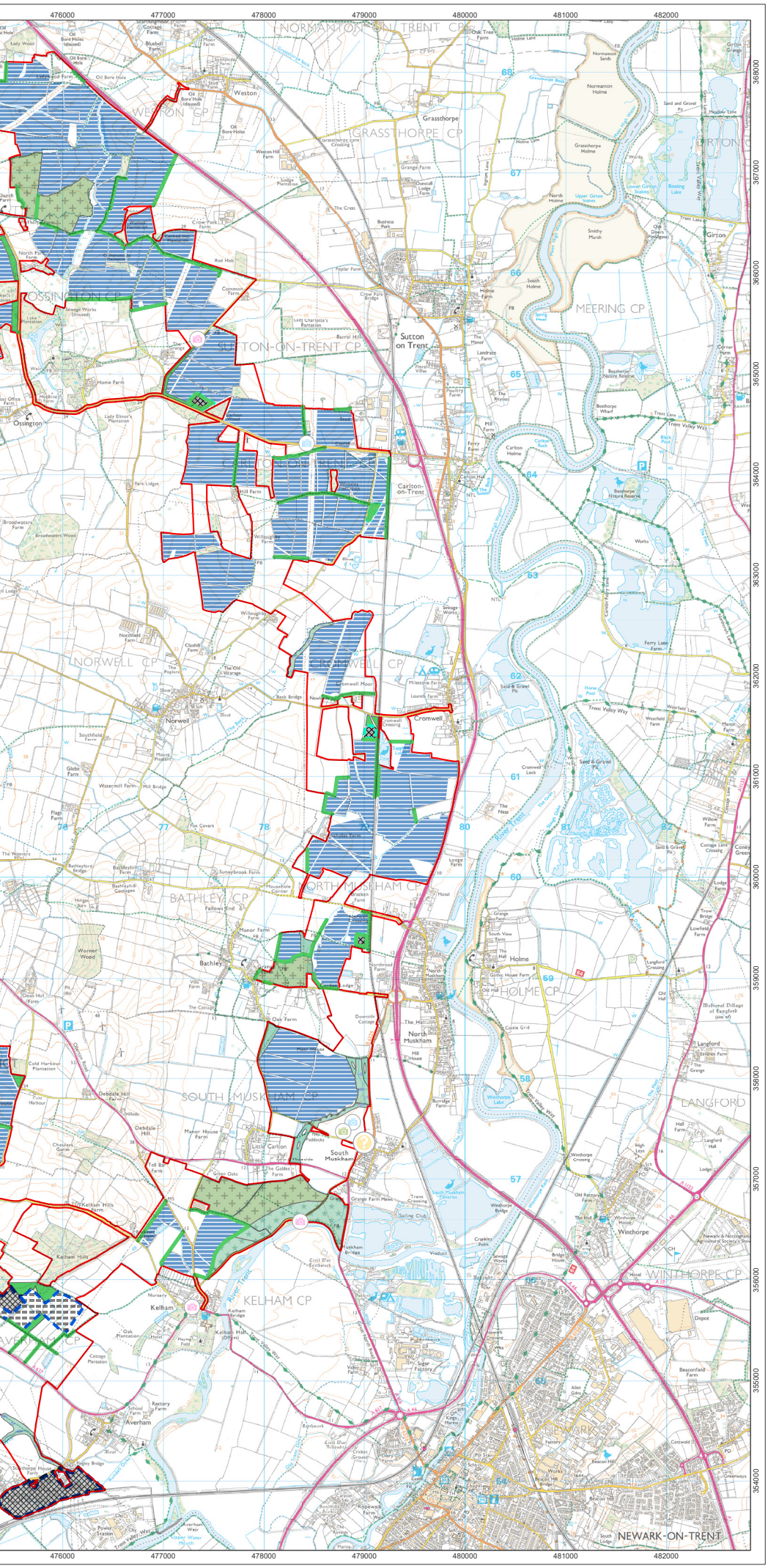
5.2 DESIGN REFINEMENT

55 Consultation, environmental and technical considerations have all fed into refinement of the Development design. The following pages in this section provide a summary of key changes which have been made to the Development between the EIA Scoping and PEIR stages of project, including both changes to the proposed layout and to the Order Limits.

56 Minor changes to proposed development areas and Order Limits are not described in detail but may have arisen due to one or more of the following factors:

- Offsets from field boundaries - solar areas illustrated on the Preliminary Masterplan included an offset of 5 m from all field boundaries, assuming the presence of hedgerow boundaries. These were rationalised for the PEIR stage in order to accommodate Root Protection Areas (RPAs) around hedgerows, trees and woodlands identified through ongoing arboricultural surveys, avoid other physical constraints and remove buffers around features such as open or post and wire fenced field boundaries which can easily be incorporated within solar areas.
- Offsets from overhead lines and buried services - solar areas illustrated on the Preliminary Masterplan included varying offsets from all such features. These were incorporated within the ‘solar array areas’ for the PEIR stage as, while they remained a constraint for generation infrastructure (solar panels, inverters, substations, etc.), they may have been suitable for other ancillary infrastructure (access, cables, fencing, etc.).
- Geophysics and trial trenching - solar areas illustrated on the Preliminary Masterplan excluded areas identified by early geophysics surveys as potentially containing features of archaeological interest. As above, these have now been incorporated within the solar array areas. Whilst they remained a constraint for generation infrastructure (solar panels, inverters, substations, etc.), they may have been suitable for other ancillary infrastructure (access, cables, fencing, etc.) subject to further archaeological investigations.
- Landowner negotiations - the process of land assembly remained ongoing and landowner preferences were incorporated during the process of commercial agreements being finalised.





Order Limits

Proposed Solar Panel Areas (1) - typically offset approximately 10m from field boundaries

Proposed 400kV Substation Areas (2)

Proposed BESS Area (2)

Proposed Substation Areas (2)

Landscape & Ecology

Proposed Hedgerows and Broadleaf Woodland (5) (6)

Retained Agricultural Land - enhanced ecological management (7)

Proposed Permanent Grassland (8)

Proposed Green Corridor (9)

Proposed Riparian Corridor (9)

Proposed Wildlife Site (10)

Visitor Interpretation

Clean Energy Information (14)

Ecology/Landscape Information (14)

Heritage Information (14)

Solar Farm Visitor Hub (13)

1:27,500 Scale @ A1

0 0.25 0.5 1 1.5 2 km

Produced By:	Ref:
Checked By:	Date: 16/01/2024

Preliminary Masterplan

Great North Road Solar Park