



WHITESTONE
solar farm

WHITESTONE SOLAR FARM

Volume 5 – Reports and Statements

5.7 Design Approach Document

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Design Approach Document

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1 INTRODUCTION

1.1 Purpose of this document

1.1.1 This Design Approach Document (DAD) supports the Development Consent Order (DCO) application for Whitestone Solar Farm. Whitestone Solar Farm comprises the construction, operation, and decommissioning of a proposed solar farm with associated battery storage located in South Yorkshire between Rotherham and Doncaster (the Proposed Development). The Proposed Development would connect to Long Lane 400kV Substation and would contribute towards national renewable energy generation and net-zero targets.

1.1.2 This DAD has been prepared by the project's design lead to assist the Examining Authority in their review of how the Proposed Development delivers good design. To that end, this DAD is structured around the good design process, as set out in guidance provided by the Planning Inspectorate titled '**Nationally Significant Infrastructure Projects: Advice on Good Design**' (October 2024, updated April 2025) [Ref 1]. In accordance with that structure, this DAD is divided into the following sections:

- Section 1, Introduction: details the purpose of this document and project overview.
- Section 2, Assemble: sets out the project brief, team, design approach, programme, vision, and design principles.
- Section 3, Research: provides an overview of the baseline conditions across the Order Limits and their locality.
- Section 4, Coordinate: explains the iterative design process undertaken throughout the pre-application phase.
- Section 5, Secure: describes how good design is secured in the DCO and will be taken forwards through detailed design.
- Section 6, Summary and Conclusion.

1.2 Overview of good design

1.2.1 Good design is a simple concept but has far reaching implications. It goes beyond pure aesthetics, rather spanning all project design and engineering decisions, including sustainability, functionality and place. As such, it is not limited to a single deliverable or assessment but rather permeates every design decision from preliminary site selection to the location of individual components.

1.2.2 The requirement for good design in Nationally Significant Infrastructure Projects (NSIPs) is established in National Policy Statements (NPSs). A brief overview of the relevant policy framework is provided below.

1.3 Good design in policy

1.3.1 National Policy Statements

1.3.1 **Overarching National Policy Statement for Energy (EN-1) [Ref 2]** provides criteria for good design for energy infrastructure, particularly in:

- Paragraph 4.7.1: *“The visual appearance of a building, structure, or piece of infrastructure, and how it relates to the landscape it sits within, is sometimes considered to be the most important factor in good design. But high quality and inclusive design goes far beyond aesthetic considerations. The functionality of an object – be it a building or other type of infrastructure – including fitness for purpose and sustainability, is equally important”*.
- Paragraph 4.7.3: *“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”*.
- Paragraph 4.3.4: *“To consider the potential effects, including benefits, of a proposal for a project, the applicant must set out information on the likely significant environmental, social and economic effects of the development, and show how any likely significant negative effects would be avoided, reduced, mitigated or compensated for, following the mitigation hierarchy”*.

1.3.2 **National Policy Statement for Renewable Energy Infrastructure (EN-3) [Ref 3]** provides solar-specific considerations across the following paragraphs:

- Paragraph 2.10.52: *“Applicants will consider several factors when considering the design and layout of sites, including proximity to available grid capacity to accommodate the scale of generation, orientation, topography, previous land-use, and ability to mitigate environmental impacts and flood risk”*.
- Paragraph 2.10.53: *“For a solar farm to generate electricity efficiently the panel array spacing should seek to maximise the potential power output of the site. The type, spacing and aspect of panel arrays will depend on the physical characteristics of the site such as site elevation”*.
- Paragraph 2.1.3: *“The National Infrastructure Commission derives four high-level design principles - Climate, People, Place and Value, to guide the planning and delivery of major UK infrastructure, including energy. The principles aim for net-zero, human-centric design, local identity, and added benefits beyond the project’s main purpose”*.

1.3.3 The policy requirements within EN-1 and EN-3 establish the need for good design; seeking to avoid significant impacts and provide a demonstrable design process. Key considerations for the Proposed Development arising from policy relating to good design include:

- Landscape-led design: The layout should respond to the prevailing landscape character and associated sensitivities noted in published landscape character assessments and identified through LVIA fieldwork;
- Avoidance of sensitive receptors: In accordance with the mitigation hierarchy, sensitive environmental features should be avoided as a preference over mitigation;
- Controlled flexibility: Flexibility embedded in the design envelope should be proportionate, ensuring appropriate mitigation is embedded and clearly secured;
- Design envelope: Maximum and minimum parameters should be clearly defined, allowing accurate environmental assessment;

- Biodiversity integration: Measures for habitat retention and enhancement should be embedded in the Proposed Development; and
- Reversibility: where applicable, the Proposed Development, and associated impacts, should be reversible.

1.3.2 Local policy

City of Doncaster Council

1.3.1 The Doncaster Local Plan (Adopted 2021) includes several policies pertinent to design including:

- Policy 26: Green Infrastructure;
- Policy 29: Ecological Networks;
- Policy 32: Woodlands, Trees and Hedgerows;
- Policy 33: Landscape; and
- Policy 41: Character and Local Distinctiveness.

1.3.2 Taken collectively, these policies establish that development should be planned as part of a connected green infrastructure network, ensuring that habitats, green spaces, and ecological corridors are retained, strengthened and integrated into design. Policy 29 highlights that ecological networks should be extended and not fragmented. Policy 32 requires the protection and management of vegetation, including trees and hedgerows in recognition of their functional and visual importance to the landscape. Policies 33 and 41 require development to respond to the defining characteristics of the local landscape, conserving landscape character and seeking to avoid unacceptable visual impacts, noting that the scale, layout and siting of developments should respond to the baseline characteristics of an area.

Rotherham Metropolitan Borough Council

1.3.3 Rotherham's Local Plan (adopted 2014) also includes several policies relevant to design, including:

- CS 19: Green Infrastructure;
- CS 21: Landscape;
- CS 28: Sustainable Design; and
- SP 32: Green Infrastructure and Landscape.

1.3.4 These policies require that development be planned, designed and delivered as part of a connected green infrastructure network, with a focus on conserving landscape character and embedding high quality design from the outset of a project.

1.3.5 Policy CS21 requires development to conserve and, where appropriate, enhance the character of the borough through measures such as respecting topography, field patterns, and vegetation structure.

1.4 Guidance and advice

1.4.1 The policy summarised above is supported by several guidance and advice documents which have been reviewed and referenced throughout the design process. These documents are as follows:

- **National Infrastructure Strategy (HM Treasury. November 2020) [Ref 4];**
- **Nationally Significant Infrastructure Projects: Advice on Good Design (Planning Inspectorate. 23 October 2024) [Ref 5];**
- **Design Principles for National Infrastructure (National Infrastructure Commission Design Group) [Ref 6];**
- **Project Level Design Principles (National Infrastructure Commission Design Group. May 2024); and**
- **National Design Guide. Planning practice guidance for beautiful, enduring and successful places (MHCLG. January 2021) [Ref 7].**

2 ASSEMBLE

2.1 Project brief and team

- 2.1.1 The project brief entailed the sensitive design of the Proposed Development, embedding good design from the outset, via the establishment and implementation of project specific design principles and meaningful engagement with local stakeholders.
- 2.1.2 This brief is reflected in the project’s earliest engagement materials, such as the ‘Introducing Whitestone Solar Farm’ leaflet, circulated on project launch, which outlined the importance of community feedback, the need for renewable power, the site selection rationale, and the goal to deliver sensitive design.
- 2.1.3 In order to deliver a project in line with the brief, the Applicant established a design team to be overseen by a project specific design lead, responsible for embedding good design at each step of the pre-application phase and securing good design within the DCO application. **Figure 1** shows the structure of the project’s design team.

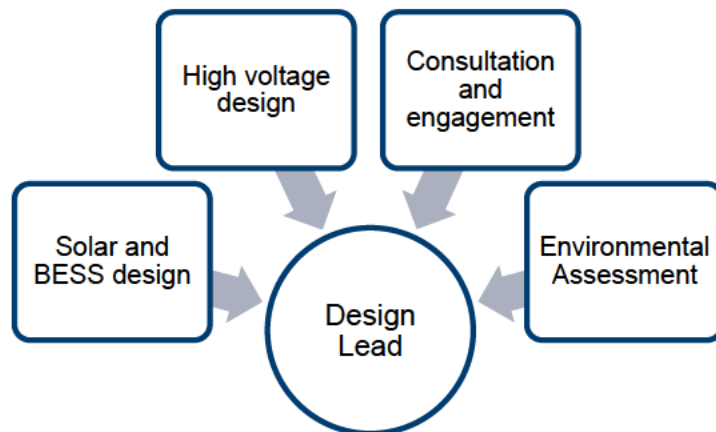


Figure 1: Structure of project design team

2.2 Design process and project programme

Design process

- 2.2.1 For good design to be fully embedded into the Proposed Development it needs to permeate all project decisions, starting in high level strategy and being a consistent thread through each step of design development through to the securing of design flexibility and ultimately in post consent detailed design development. The key aspects of following good design throughout the project development are listed in **Figure 2** below.

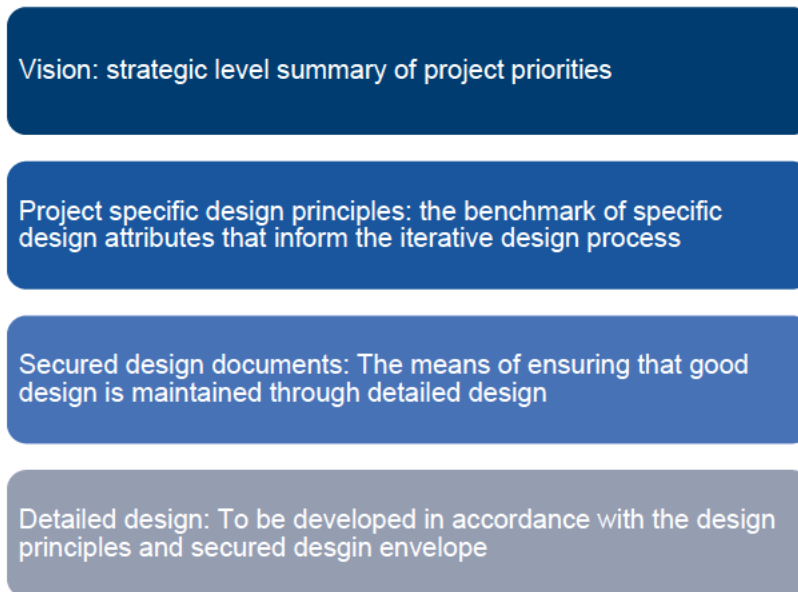


Figure 2: Good design across the project

Project vision and design principles

- 2.2.2 The project vision is: *'To embed good design by maximising the amount of clean energy generated to export to the National Grid, crafting a development that is socially and environmentally sensitive; engaging in meaningful conversation with communities and taking account of people's visual amenity. The project will embed sustainability and resilience, enhancing biodiversity and recreational access across the landscape'*.
- 2.2.3 Project specific design principles were adopted at the outset of the project. Based on the 'Design Principles for National Infrastructure' guidance published by the National Infrastructure Commission design group, the design principles were drafted under the headings of climate, people, place, and value. These four headings highlight the breadth of considerations that should be included under the banner of good design.
- 2.2.4 The project specific design principles are shown below:



Design process

2.2.5 Good design requires an iterative development process to allow findings from the design team to refine the Proposed Development. The project therefore implemented a design decision making process throughout the pre-application phase. This process is set out below and has been repeated throughout the pre-application phase as summarised subsequently on the design programme.

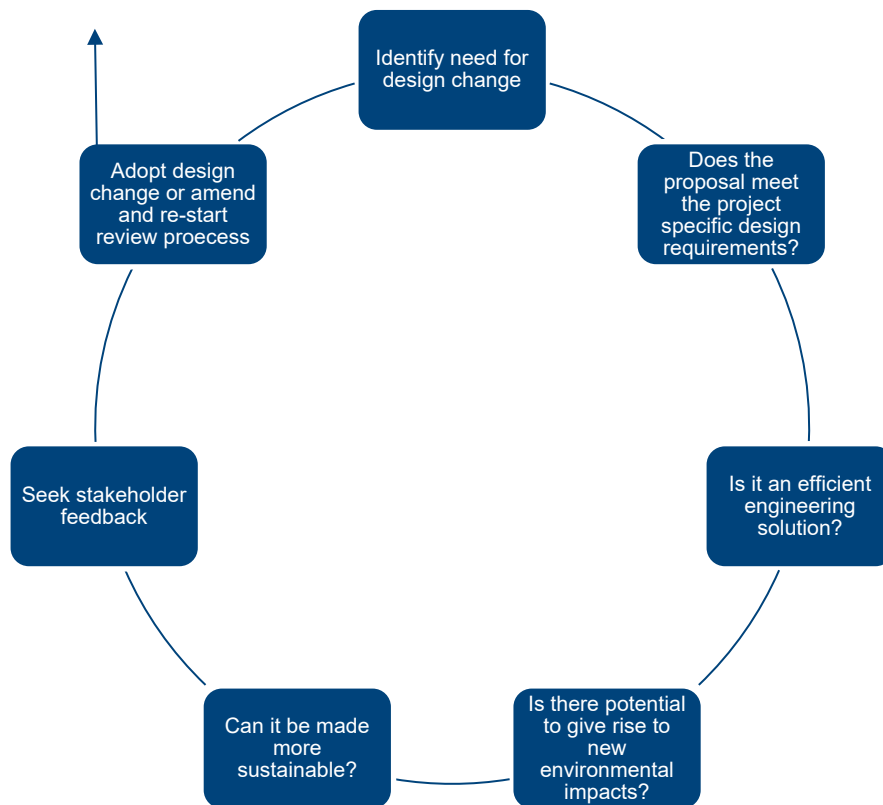


Figure 3 Iterative design process

Design programme

2.2.6 The iterative design process has been a continuous development throughout the pre-application phase. Consultation and engagement activities are detailed in the **Consultation Report [EN0110020/APP/5.1]**. Key stages in the pre-application design programme are set out below.

- Pre Autumn 2024: Grid application and initial site selection
- Summer 2024: Definition of project brief and project specific design principles
- Autumn 2024: Identification of constraints and opportunities to inform the development of launch masterplan
- Winter 2024/25: Non-statutory consultation including information events, residential visits, and meetings with Parish Councils and other elected officials.
- Winter 2024/25: Ongoing progression of environmental surveys.
- Spring 2025: Review of consultation feedback and progression of updated masterplan
- Spring 2025: Publication of updated masterplan demonstrating changes resulting from non-statutory consultation.
- Summer 2025: Ongoing environmental surveys and definition of project parameters. Development of draft ES
- Autumn 2025: Statutory Consultation including information events, residential visits, and meetings with Parish Councils and other elected officials.

- Winter 2025: Iterative design development, incorporating review of consultation feedback.
- Spring 2026: Publication of updated project masterplan
- Spring 2026: Ongoing refinement of project parameters and securing of good design in DCO submission documents
- Early Summer 2026: Submission.

2.3 Summary of 'Assemble' phase

- 2.3.1 The design approach for the Proposed Development has been underpinned by a commitment to embedding good design from the outset, guided by a defined project brief, bespoke design principles and a structured, iterative process of design development. This has been supported by early and ongoing engagement with local communities and stakeholders, alongside the progressive advancement of environmental surveys and assessment work.
- 2.3.2 Throughout the pre-application stage, design has been treated as a continuous and integrated thread, informing strategic decision-making, site layout, and project refinement. The project programme demonstrates how consultation feedback, technical inputs and environmental constraints have been iteratively incorporated into successive masterplan updates, ensuring that the project evolves in response to both place-specific characteristics and stakeholder input. This approach is aligned with the project vision to deliver a development that balances the generation of renewable energy with a high quality of design, enhancing landscape character, biodiversity and recreational value, while responding sensitively to local context and visual amenity.

3 RESEARCH

- 3.1.1 Drawing on guidance from the National Infrastructure Commission, good design requires teams to:
- **Appreciate the wider context**, for example questioning how the Proposed Development relates to the environment beyond the Order Limits;
 - **Engage meaningfully**, meeting with statutory consultees and local communities to better understand the Order Limits and people's relationship to the land; and
 - **Continually measure and improve**, through iterative design development, seeking ongoing feedback and embedding a willingness to change and adapt.
- 3.1.2 This section of the DAD records as summary of the baseline condition of the land within the Order Limits, and beyond, and identifies 'design prompts' that were used to inform subsequent design development and final design parameters.

3.2 Topography

Summary of conditions

- 3.2.1 Across Whitestone 1, the landform features a central basin, rising to approximately 146 m Above Ordnance Datum (AOD) at Beacon Hill to the southeast and approximately 100m AOD along a ridgeline to the east. To the northwest, a small hill rises to approximately 85m AOD and slopes down to A630 (Sheffield Road) to the northwest.
- 3.2.2 The topography across Whitestone 2, located south and west of the M1, is defined by Ulley Brook valley, which traverses the centre of the area. Landform rises to the north and south to reach approximately 100m AOD along the M1 and 105m AOD at Penny Hill. Across the motorway, to the southeast of the M1, the landform exhibits subtle undulations, varying between approximately 120m and 100m AOD.
- 3.2.3 Topography across Whitestone 3 features undulations with local elevations such as Stone Hill which is elevated at approximately 144m AOD. However, a sense of enclosure prevails, given the well vegetated landscape structure defined by a mix of hedgerows and lines of trees that form field boundaries.

Design prompts

- 3.2.4 Careful siting of the Proposed Development will sensitively respond to the topography of the area and, where possible, avoid conspicuous location of the PV panels and associated infrastructure.

3.3 Land Use

Summary of conditions

- 3.3.1 The Order Limits comprise predominantly arable agricultural land divided by a network of hedgerows, trees and brooks.
- 3.3.2 The Dearne Valley dismantled train line runs north/south across the eastern part of the Order Limits within Whitestone 1. A disused spur and pockets of small ponds occupy areas of former workings, reflecting the industrial past of the region.

- 3.3.3 The area adjacent to the Order Limits is divided by a major road infrastructure. The main transport links include the M1, which runs north and splits Whitestone 2 on the eastern and western sides, then continues west towards Sheffield. The M18 branches from the M1 at junction 32 and continues north towards Whitestone 1.
- 3.3.4 The National Grid overhead power lines carried by pylons cross Whitestone 2 and continue north west towards Brinsworth substation. Alongside the wind turbines at Penny Hill Wind Farm, adjacent to Whitestone 2, they form a prominent feature in this part of the landscape.
- 3.3.5 The Chesterfield Canal crosses the area towards the south east of the Order Limits. There are other small brooks in proximity to the Order Limits including Anston Brook and Maltby Dike. The River Don passes through the area northwest of the Order Limits.
- 3.3.6 The settlements of Sheffield and Rotherham are located to the west of the Order Limits. There are numerous small settlements and villages interspersed across the rural/urban fringe landscape, connected via a network of A roads and minor roads. Several towns, villages and hamlets are located beyond the Order Limits including Conisbrough, Clifton, Firsby, Micklebring, Ravenfield, Ulley, Brampton-en-le-Morthen, Treeton, South Anston, Todwick, Woodall and Harthill.

Design prompts

- 3.3.7 The Proposed Development will respond to the land use that contributes to the landscape character of the area.
- 3.3.8 The Proposed Development will respond to the existing settlement pattern and individual properties by avoiding sensitive locations, offsetting the proposed infrastructure and providing visual screening in the form of new vegetation where appropriate.

3.4 Heritage and Archaeology

Summary of conditions

- 3.4.1 There are over 100 designated heritage assets located within 1km of the Order Limits, including:
- One Registered Park and Garden (Barlborough Hall a 16th century designed garden and landscape);
 - Four Scheduled Monuments;
 - 12 Conservation Areas; and
 - 115 Listed Buildings (Three Grade I, eight Grade II*, and 104 Grade II).
- 3.4.2 Conisbrough Parks Romano British Villa Scheduled Monument is located adjacent to the Order Limits. The three remaining Scheduled Monuments include the potential Roman to Iron Age settlement site of Canklow Hill earthworks, Blue Man's Bower moated site near Whiston, and Manor House moated site.
- 3.4.3 Conisbrough Castle is a Scheduled Monument located outside of the 1km offset from the Order Limits. The castle is located within Conisbrough and therefore the modern development associated with a settlement. The Proposed Development would be visible from the upper levels of the Keep, with views unchanged for visitors to the castle at ground level.

3.4.4 There are approximately 350 non-designated assets within 1 km of the Order limits, ranging in date from the Early Prehistoric to Modern periods. These range in date and include;

- 39 dating to the Early Prehistoric period;
- 48 dating to the Later Prehistoric period;
- 42 dating to the Roman period;
- 91 dating to the Medieval period;
- 84 dating to the post-medieval; and
- 14 dating to the Modern period.

Design prompts

3.4.5 Avoidance of ground disturbance through sensitive siting of infrastructure or use of alternate construction methodology to allow the preservation in situ of subsurface archaeological features.

3.5 Ecology and Biodiversity

Summary of conditions

3.5.1 The Order Limits are not covered by any statutory ecological designations. Several SSSIs located within 5km of the Order Limits namely:

- Crabtree Wood – located approximately 0.9 km to the southeast of W3
- Anston Stones Wood - located approximately 1.3 km to the southeast of W2
- Sprotborough Gorge - located approximately 2.2km to the north northeast W1
- Edlington Wood - located approximately 2.2km to the east W1
- Cadeby Quarry - located approximately 2.5km to the north W1
- Lindrick Golf Course - located approximately 2.5 km to the southeast W2
- Denaby Ings - located approximately 2.75 km to the northeast W1
- Ginny Spring - located approximately 3.3 km to the east W3
- Moss Valley - located approximately 4.1 km to the west W3
- Roche Abbey Woodlands - located approximately 4.3 km to the east W2
- Maltby Low Common - located approximately 4.8 km to the east W2

3.5.2 Firsby Reservoir Local Nature Reserve comprises a standing open water and is adjacent to the southeast of W1, and:

3.5.3 At the local level, twenty-seven Local Wildlife Sites and five Local Nature Reserves are located within 2 km of the Proposed Order Limits.

3.5.4 Brampton Common partially falls within the Order Limits and is designated as a Local Wildlife Site, for an ancient / species-rich hedgerow and breeding skylark. It is located within Whitestone 2.

3.5.5 Ulley Country Park is designated as a Local Wildlife Site for neutral grassland, acid grassland & wet grassland, lowland heath, acid woodland & wet woodland. It is adjacent to the central part of Whitestone 2.

3.5.6 Habitats located within the Order Limits are dominated by arable fields, areas of modified grassland and neutral grassland. The fields are mostly bordered by

predominantly native hedgerows. Other habitats recorded within the Order Limits include Wet Woodland (Deciduous woodland), Arable Field Margins and Eutrophic Standing Waters. There is no ancient woodland within the Order Limits.

- 3.5.7 The habitats within the Order Limits support a range of legally protected and notable species. These include a range of mammals like bats, badger, brown hare, reptiles such as grass snake, birds including lapwing, skylark, barn owl and hobby and freshwater migratory fish and White Clawed Crayfish.

Design prompts

- 3.5.8 A landscape strategy responding to the ecology baseline and local priorities will be developed throughout the design development, detailing the planting typologies and indicative species lists proposed. The output is provided within the **outline Landscape and Ecology Management Plan [EN0110020/APP/5.13]**.

3.6 Agricultural Land Classification

Summary of conditions

- 3.6.1 The Agricultural Land Classification system (ALC) is a method of classifying the quality of land used for agricultural purposes, based on the possible limitations on agricultural use due to physical or chemical properties. The three main factors affecting ALC are climate, site, and soil. In addition to the ALC grades, the higher quality land is classified as 'Best and Most Versatile Agricultural Land', known as BMV land. Soils of ALC grades 1, 2 and 3a are considered to be BMV land, while soils of ALC grade 3b, 4 or 5 are considered to be non-BMV land.
- 3.6.2 An ALC survey of the Site was undertaken between February 2025 and April 2025, in line with industry best practice and Natural England guidance. The survey found that the site is occupied by five grades and subgrades of soil quality, as detailed below (noting that less than 1% was unsurveyed):
- Grade 1 (BMV land): 10.85ha. or 0.94% of surveyed area
 - Grade 2 (BMV land): 81.24ha or 7.06% of surveyed area
 - Subgrade 3a (BMV land): 128.39ha or 11.16% of surveyed area
 - Subgrade 3b (non-BMV land): 907.16ha or 78.86% of surveyed area
 - Grade 4 (non-BMV land): 3.64ha or 0.32% of surveyed area
 - Non-agricultural land: 1.5ha or 0.13% of surveyed area
 - Urban land: 7.65ha or 0.67% of surveyed area.

Design prompts:

- 3.6.3 So far as practicable the Proposed Development will seek to utilise non-BMV land.

3.7 Movement and Access

- 3.7.1 The landscape across the Order Limits is connected by a series of minor lanes and tracks, with numerous footpaths and bridleways. There are two Long Distance Walking Paths (LDWP) crossing the Order Limits and the wider area, namely:

- The Rotherham Round Walk LDWP runs through the centre of the western field cluster within Whitestone 2 and continues beyond the Order Limits to the north and west.
- The Cuckoo Way LDWP follows the Chesterfield Canal, runs south of Kiveton Park and north of Whitestone 3, then crosses the M1 and continues westwards.

3.7.2 Views from the PRoW are varied. Some afford open views of the surrounding landscape, whilst others are channelled by existing topography and/or vegetation.

3.7.3 Each part of the Order Limits is accessible from the public highway via the setting out of internal access tracks.

Design prompts:

- Retain PRoW as open throughout the project's lifetime so far as practicable.
- Secure minimum offsets from PRoW to retain a sense of openness for people travelling along them, varying the distance to provides some natural variation.
- Seek to enhance recreational access across the Order Limits through new permissive paths.

3.8 Landscape Character and Designated Landscapes

3.8.1 The main land use across Order Limits is arable. Horse paddocks are present around some settlements such as Clifton and Ulley. There are numerous belts of trees and woodlands, with occasional ancient woodlands beyond the Order Limits. Vegetation cover within the Order Limits comprises of the field boundary hedgerows and belts of trees that divide fields.

3.8.2 At the national scale, the Order Limits fall within two National Landscape Character Areas derived by Natural England, namely National Character Area (NCA) 30: Southern Magnesium Limestone and NCA 38: Nottingham, Derbyshire and Yorkshire Coalfield. The location of the Order Limits relative to the NCAs is illustrated in **Environmental Assessment Chapter 7: Landscape and Visual, Figure 7.3.1 [EN0110020/APP/6.19]**.

3.8.3 National Character Area 30: Southern Magnesium Limestone covers large areas of W1, W2 and W3 on their central and western locations. NCA 30 comprises a long, thin stretch of land that extends from Thornborough in the north, down through north Derbyshire to the outskirts of Nottingham further south. The NCA comprises of open, rolling arable farmland enclosed by hedgerows, with plantation woodlands, historic estate properties and parkland. The localised networks of grasslands and semi-natural habitats have become fragmented. In places, rivers and dry valleys dissect the plateau from west to east.

3.8.4 National Character Area 38 covers large areas of W1, W2 and W3 on their eastern locations. NCA 38 is defined by underlying shallow coal measures and consists of the relatively low-lying land to the east of the Pennine Chain, and the engineering towns to the west. The Pennine Dales Fringe forms a boundary to the north and by a low ridge of Southern Magnesium Limestone to the east. Several rivers flow into the NCA from the west, then rise outside the NCA in the Southern Pennines and flow through the Southern Pennine Fringe.

3.8.5 At a local level, the Order Limits fall across smaller, locally identified Landscape Character Areas (LCAs). These include:

- the Conisbrough and Denaby Coalfield Farmlands LCA;

- the Central Rotherham Coalfield Farmland LCA;
- the Coalfield Tributary Valleys – Treeton and Rotherham LCA;
- the Rother Valley Floor LCA;
- the Limestone Farmlands;
- the Wooded Farmlands;
- the Rother Valley Reclaimed Woodland; and
- the East Rotherham Plateau.

3.8.6 These LCAs predominantly comprise large arable fields bounded by hedgerows and/or tree belts, some of the hedgerows being in poor condition.

3.8.7 No part of the Order Limits or the Study Area falls within a nationally or locally designated landscape.

Design prompts

- Seek to retain existing pattern and scale of the landscape by maintaining existing vegetated structure, limiting vegetation removal as far as practicable.
- Seek to minimise impact on landscape character areas with the highest levels of sensitivity.
- Seek to enhance the existing landscape framework with focus on re-establishment and enhancement of hedgerows.

3.9 Views and Visual Amenity

3.9.1 A Zone of Theoretical Visibility map was prepared in order to determine the likely extent of land from which the built components of the Proposed Development may be visible. This was supplemented by fieldwork to verify the findings.

3.9.2 The process identified the likely visual receptors (people) anticipated to be impacted by the Proposed Development including local residents, users of public rights of way and long distance footpaths, visitors to recreational sites and heritage assets, and users of the local road network.

3.9.3 The undulating topography enables some long-distance and wide views from elevated points and along the edges of settlements located on the hills. Some views are foreshortened and/or framed by landform, mature woodland and trees within the valley.

Design prompt

- Seek to minimise the visual impact experienced by people through careful siting of project components and introduction and successful establishment of new planting as part of the Proposed Development.

3.10 Summary of Constraints and Opportunities

3.10.1 Analysis of the baseline information, outlined above and fully set out in the Environmental Statement topic specific chapters, has identified several constraints and opportunities.

Constraints

- The Proposed Development should seek to protect the landscape character by identifying and protecting key characteristics.

- The setting of villages and residential properties close to the Order Limits should be protected, as well as residents' visual amenity.
- Heritage assets, particularly those of the highest value such as Scheduled Monuments, should be factored into the emerging design, protecting their setting and views of assets from prominent locations.
- Protection of locally distinctive species and habitats as identified through ecological surveys.
- Protection of Best and Most Versatile soils from the permanent structures where practicable.
- Protection of the recreational value of the area provided through the public right of way network.

Opportunities:

- The vegetated structure of the landscape provides a degree of existing screening that should be utilised in the siting of project components.
- Proximity to the major road infrastructure improves access to the Order Limits, especially during the construction period and will allow the delivery of larger project components.
- The existing vegetation network is fragmented in places, highlighting the opportunity for new planting to improve the green infrastructure network;
- Enhancement of the recreational functions across Order Limits to feed into the wider PRow network; and
- There is an opportunity to improve the approach to management across the Brampton Common Local Wildlife Site, reintroducing and improve habitats through management. The project's response to this opportunity is set out in the **outline Landscape and Ecology Management Plan [EN0110020/APP/5.13]**.

3.10.2 A series of plans showing the spatial extent of environmental features are provided below.

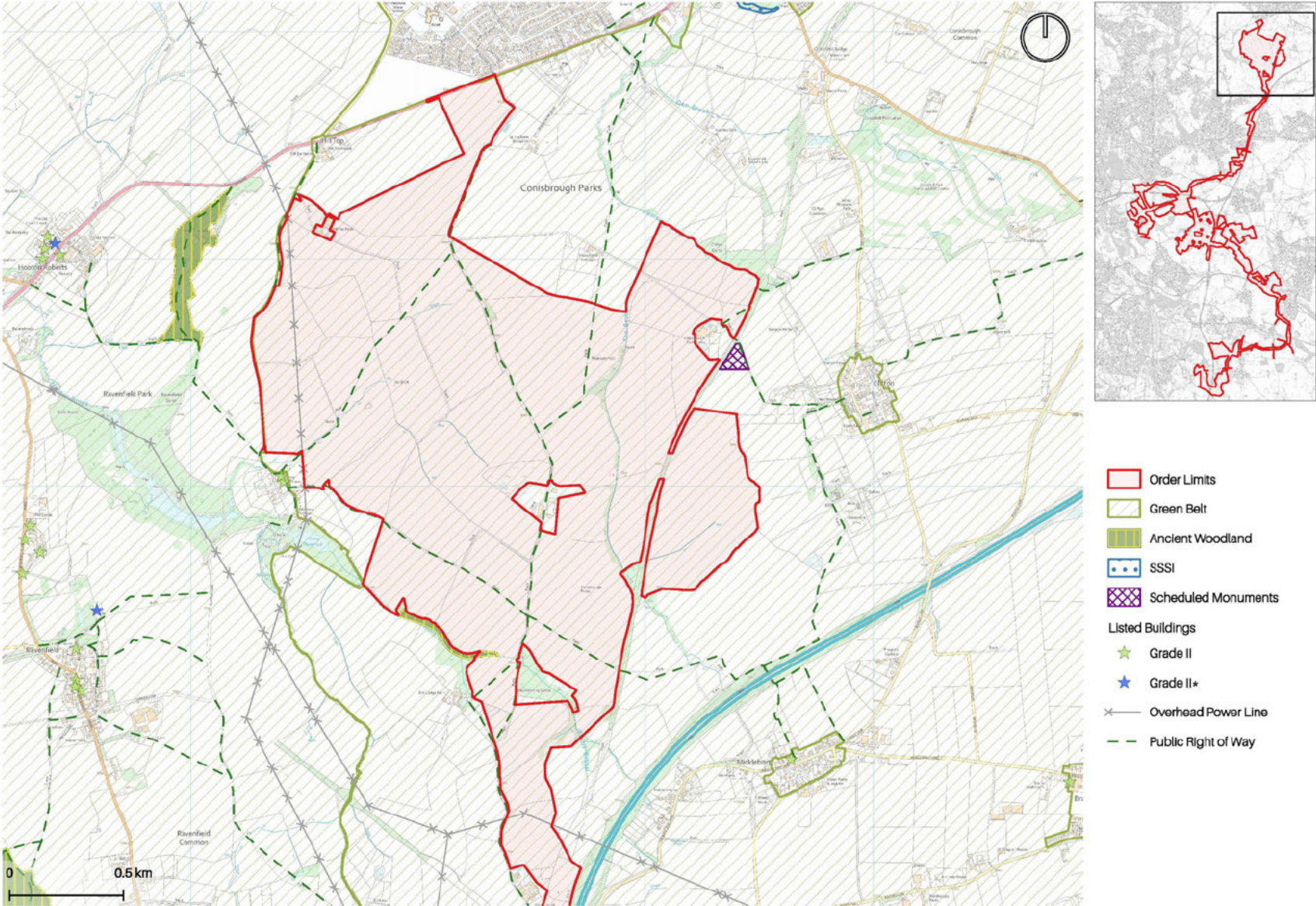


Figure 4: Environmental features 1

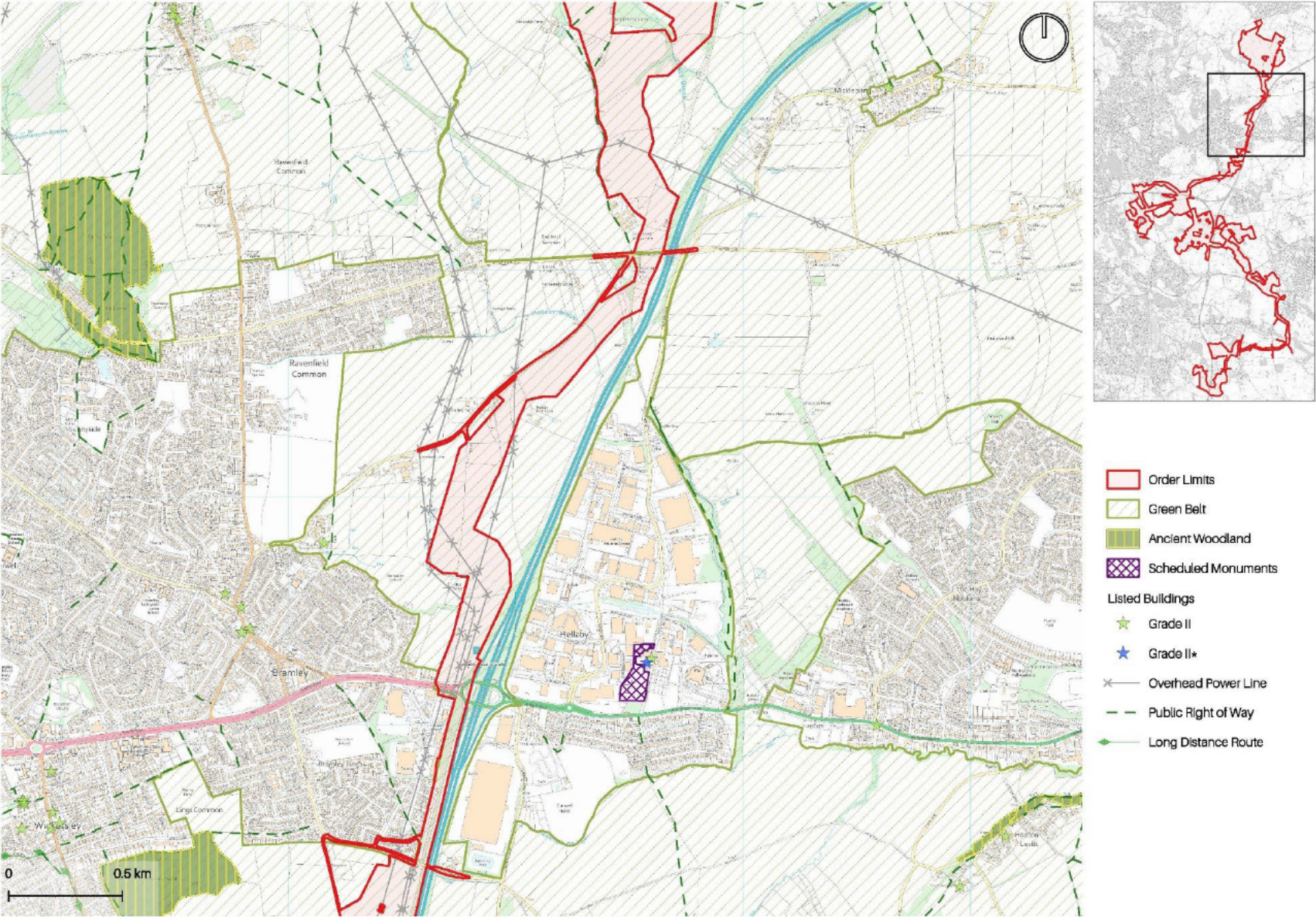


Figure 5: Environmental features 2

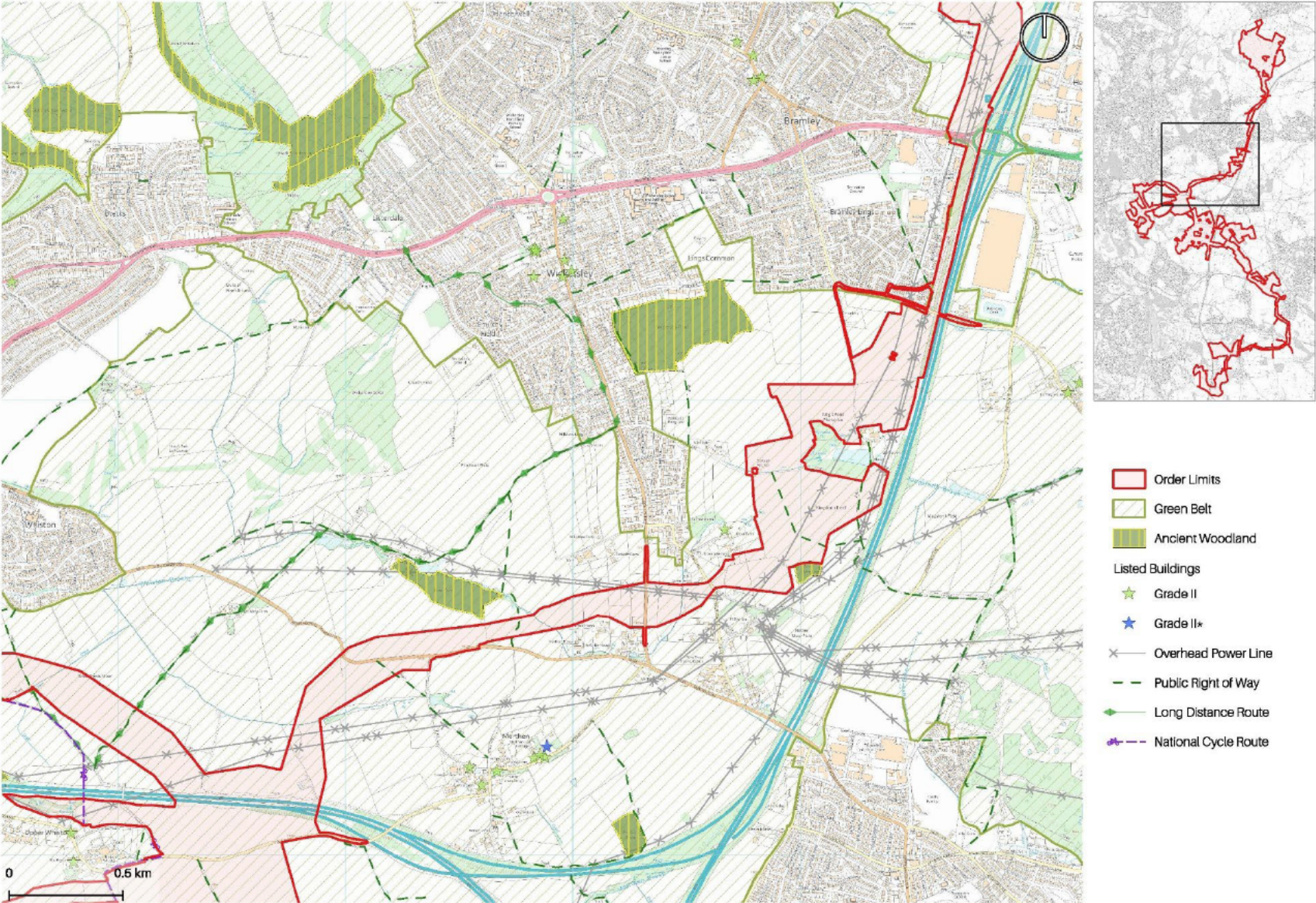


Figure 6: Environmental features 3

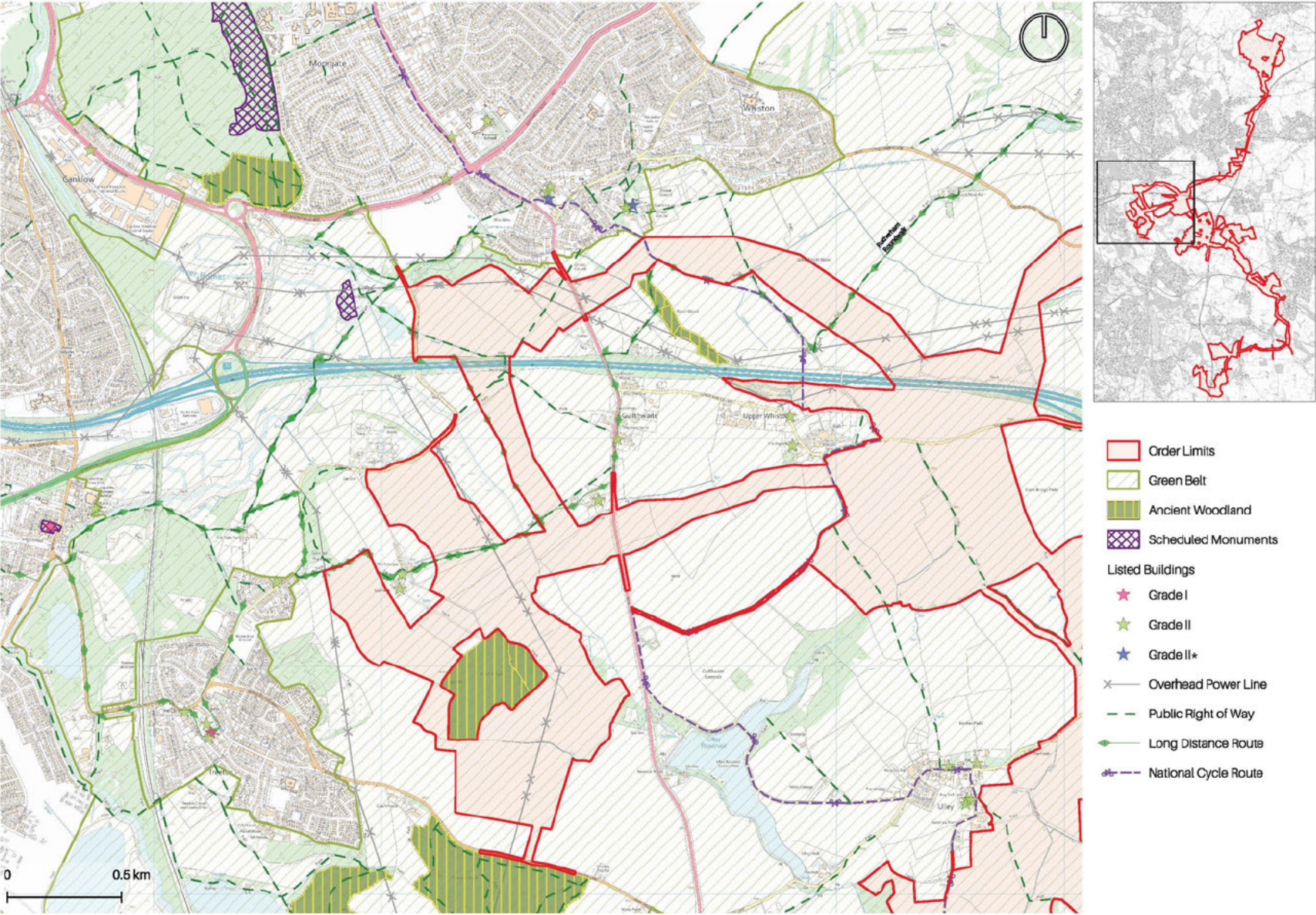


Figure 7: Environmental features 4

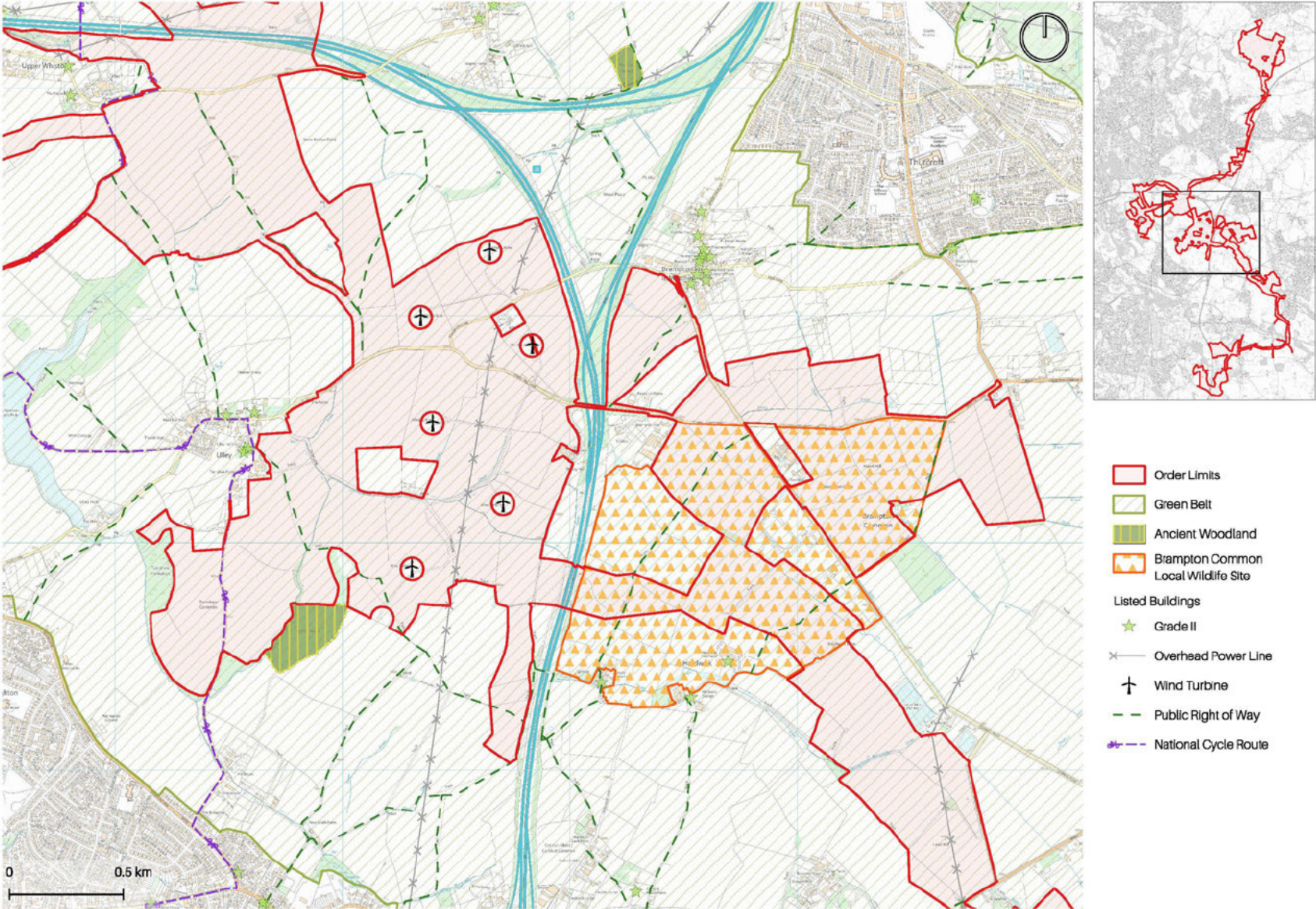


Figure 8: Environmental features 5

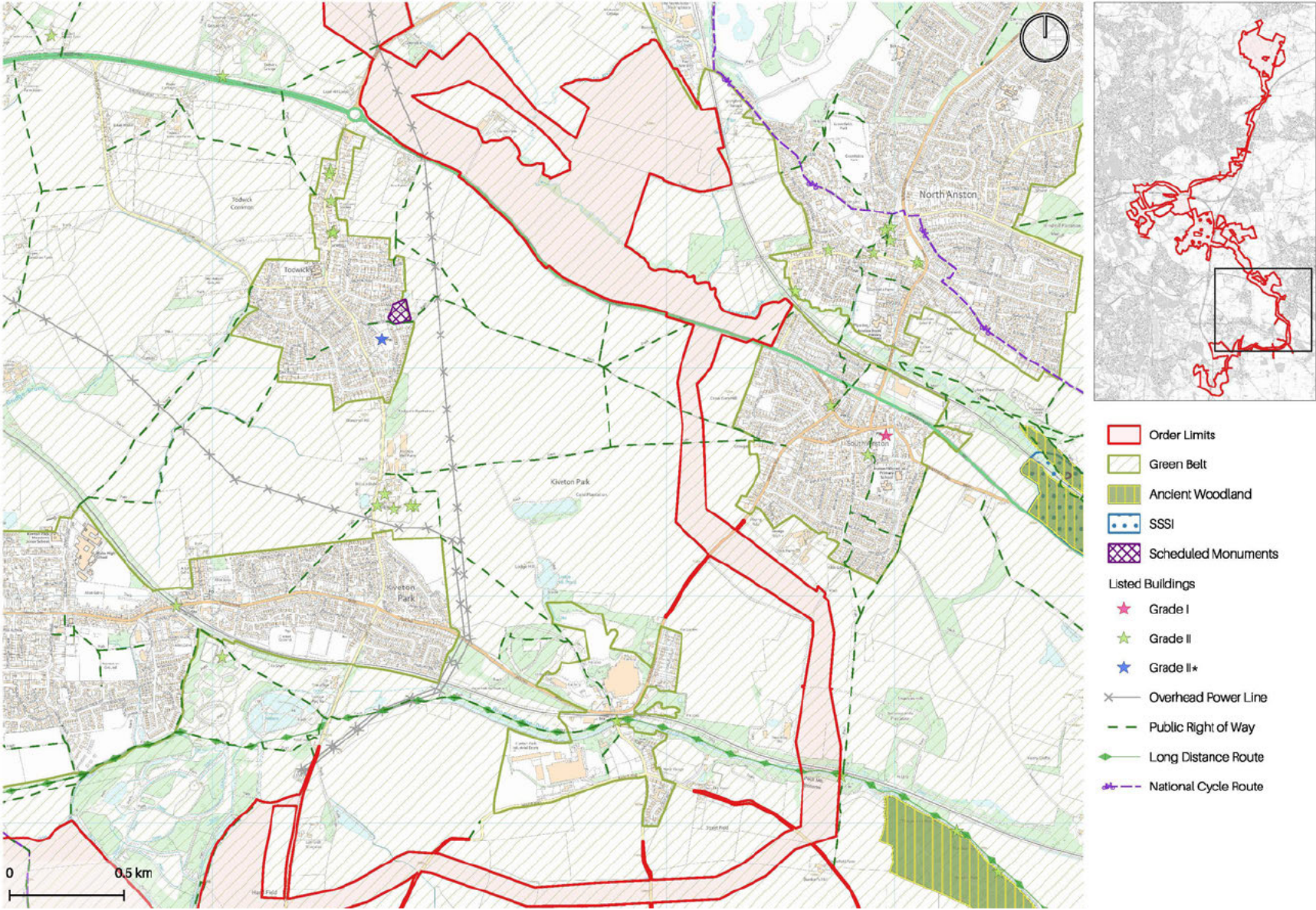


Figure 9: Environmental features 6

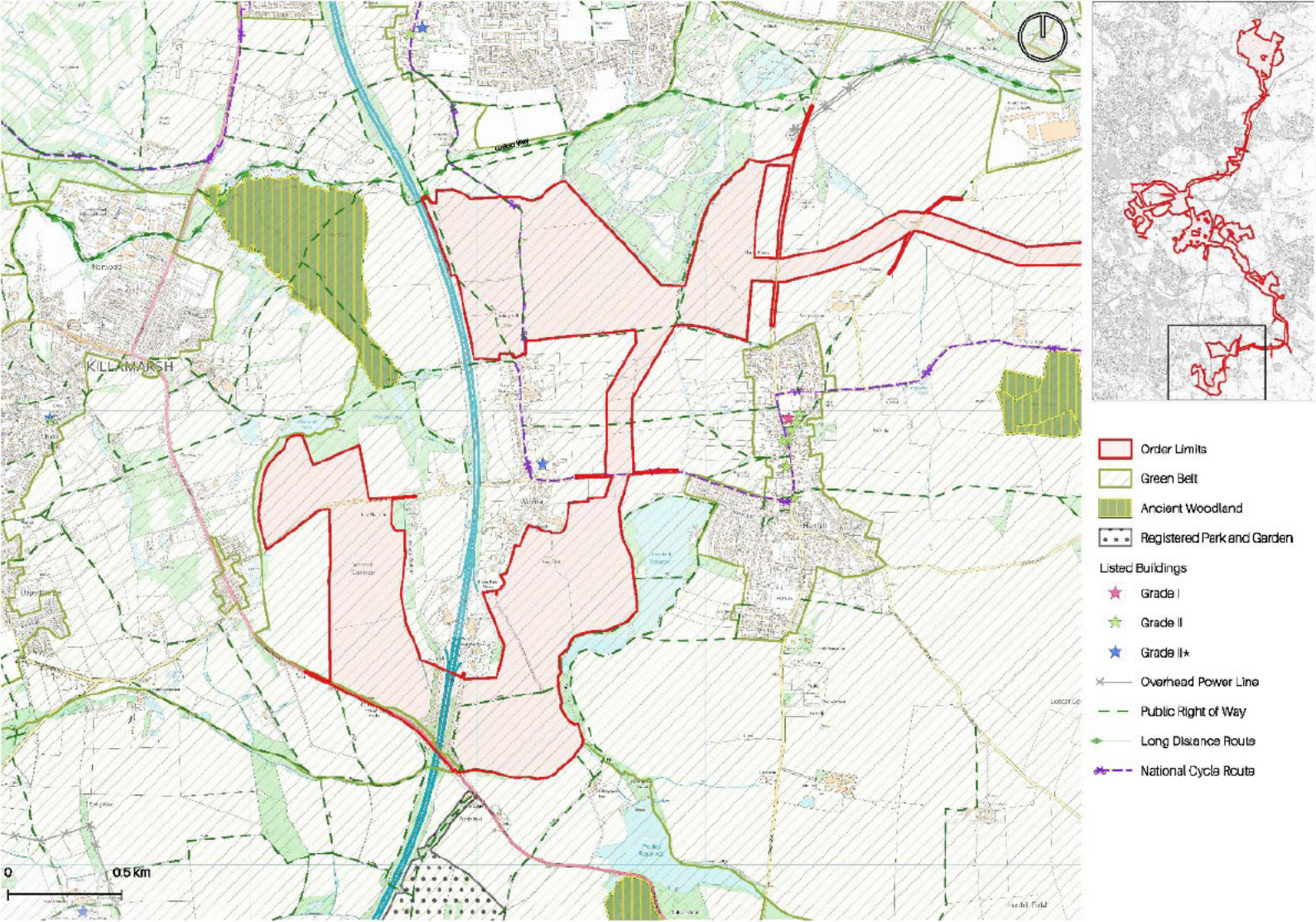


Figure 10: Environmental features 7

4 COORDINATE

4.1 Design evolution

- 4.1.1 The design of the Proposed Development has evolved throughout the pre-application phase, responding to feedback received from statutory consultees, local communities, individual residents, environmental assessments, and technical requirements (amongst other factors).
- 4.1.2 This section details the key considerations and design changes that have occurred throughout this iterative design process.

Masterplan 1 (Autumn 2024)

Embedded mitigation

- 4.1.3 The first masterplan, provided below, was published in Autumn 2024 as part of the project launch. In line with the mitigation hierarchy, and as part of the project's approach to embed good design from the outset, the extent of land within the preliminary site boundary was reviewed as part of the project's environmental analysis, referring to project constraints, opportunities, and limitations of the wider landscape. This analysis included input from environmental specialists spanning those involved in the preparation of the project EIA. Land that was found to be unsuitable for development was discounted prior to launch, thereby avoiding impacts in line with the mitigation hierarchy. For instance, where development of land would be likely to result in an unacceptable level of harm to heritage assets, or the setting of villages, or the extensive removal of vegetation, it was wholly excluded from the preliminary site boundary as described in **Appendix 1: Site Selection Assessment** of the **Planning Statement [EN0110020/APP/5.4]**.
- 4.1.4 The second output of the initial assessment was to identify land within the preliminary site boundary where further work, consultation, and analysis would be required to inform the design. Such areas were denoted on the first masterplan with a cluster of white dots, indicating that the design in these areas would be developed in consultation with the necessary consultees and stakeholders. Such examples included residents where a detailed review of the property and surrounding landscape was identified to be required as part of the project consultation and engagement programme.
- 4.1.5 Once the extent of land to be within the preliminary site boundary was defined, minimum offsets to environmental features were set to inform the design process including:
- Land within 25m of Ancient Woodland;
 - Land within 10m of existing PRoW;
 - Land within 5m of existing hedgerows and vegetation; and
 - Land in close proximity to residential properties, including individual residential dwellings and around settlements, was assessed on an individual basis. However, during the final stages of design evolution, a minimum offset of 50m around residential properties was introduced.
- 4.1.6 These areas were proposed to be within the preliminary site boundary but excluded from land that had potential for solar and associated infrastructure.

Instead, the land was proposed for landscape mitigation and enhancement, likely to be occupied by new grassland and planting.

- 4.1.7 Masterplan 1 was developed in accordance with the project Design Principles, as set out in Section 2.2.



MASTERPLAN WHITESTONE 1

Figure 11: Project launch. Whitestone 1



MASTERPLAN WHITESTONE 2
Figure 12: Project launch. Whitestone 2



Figure 13: Project launch. Whitestone 3

Masterplan 2 (Spring 2025)

Design evolution

- 4.1.8 Masterplan 2, provided below at **Figure 14**, was developed in response to ongoing environmental surveys and feedback received from consultees during non-statutory consultation. This feedback included visits made by members of the project design and consultation team to residential dwellings located in proximity to the site boundary. These visits made a key contribution to design development. In line with the design principle to “Engage with stakeholders to develop the design”, “Find out what is important to people about the local area and seek to incorporate feedback”, and “minimise visual impact”, the design did not apply generic offsets from dwellings, rather a bespoke approach, informed by meaningful engagement, was taken.
- 4.1.9 Where invited to visit dwellings, the team experienced views from inside properties, including some upper-storey windows, and from the curtilage boundary. These visits were offered to individuals who live particularly close to the Site and who engaged with the project team, for instance at public information events or through the project communication lines, stating that they lived in proximity to the Proposed Development (See also the **Consultation Report [EN0110020/APP/5.1]**).
- 4.1.10 The same attention was given to dwellings to which the design team were not invited. In such instances field work was undertaken from publicly accessible locations and supplemented by review of mapping and zone of theoretical visibility analysis.
- 4.1.11 Masterplan 2 was published in response to feedback from the non-statutory consultation but was not subject to consultation itself. Key changes made between Masterplan 1 and Masterplan 2 are summarised in **Table 1**.

Table 1: Design evolution for Masterplan 2

Location	Design Evolution
Whitestone 1	
Conisbrough	Withdrew proposed solar by 300 m from southern edge of Conisbrough, reducing visual impact from the southern edge of the settlement and in views experienced when travelling along Sheffield Road.
Individual residential properties	Increased offset in proximity to individual residential properties including: <ul style="list-style-type: none"> • 255 m from Hill Top House • 250 m from Parks Farm Cottages • Removal of proposed panels on land south of Spring Bank Bungalow • Removal of proposed panels on land north of Hill Top Farm.
Firsby	Removal of proposed solar panels on land north, east and west of Firsby with offset ranging between 250 – 500 m in response to existing views and topography.

Location	Design Evolution
Wider land	Expansion of offsets from PRoW, maintaining one side open in several instances in response to feedback explaining the importance of the routes for recreation.
	Exclusion of proposed solar panels on land identified as having high potential for archaeological sensitivity.
Whitestone 2	
Treeton	Addition of solar PV array between B6067 and Burnt Wood. Removal of land in the vicinity of Spa House Farm from the Proposed Development.
Upper Whiston	Inclusion of 220 m offset across land south of Upper Whiston to minimise impact on setting.
Ulley	Removal of proposed solar panels north of Ulley to minimise impact on the setting and views from the village, and to fragment the Proposed Development across the wider landscape.
	Removal of proposed solar panels south of Ulley on at least one side of the PRoW connecting to Aston to retain sense of openness.
Brampton en le Morthen	Incorporation of offset to the south, siting solar beyond landform and vegetation to minimise visual impact.
	Removal of proposed solar panels on land southwest of village to preserve sense of arrival to village from the west.
Individual properties	Increase of offsets from residential properties including Meadow View where an offset of 245 m across land to the south was embedded.
Brampton Common	Removal of proposed solar panels on land at Brampton Common to retain open land between Whitestone and other solar developments to minimise cumulative impact.
Hardwick	Incorporation of offsets on land east of Hardwick to remove visual impact that would be experienced when travelling on local PRoW.
South of Turnshaw Plantation	Removal of proposed solar on land south of Turnshaw Plantation, preserving setting to South Yorkshire Woodland Burial Ground.
Whitestone 3	
High Moor	Increased offset from High Moor, siting solar beyond landform to minimise potential for visual impact from settlement.
Woodall	Increased offset from Woodall, siting solar beyond landform to minimise potential for visual impact.
Woodall and Harthill	Removal of proposed solar on land between Woodall and Harthill, north of Harthill Reservoir, to maintain openness between the two villages and reduce visual impact.

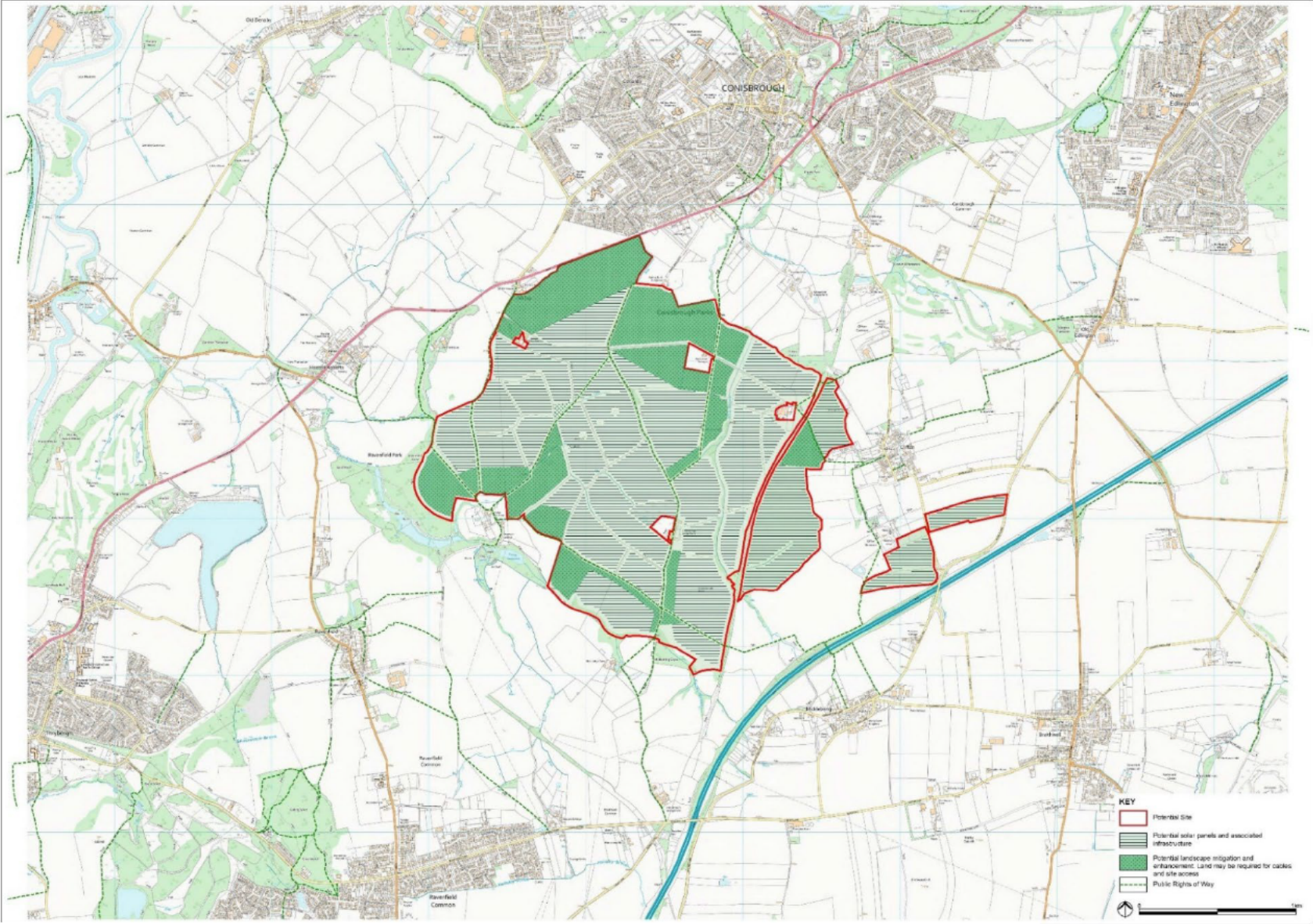


Figure 14: 2nd iteration. Whitestone 1

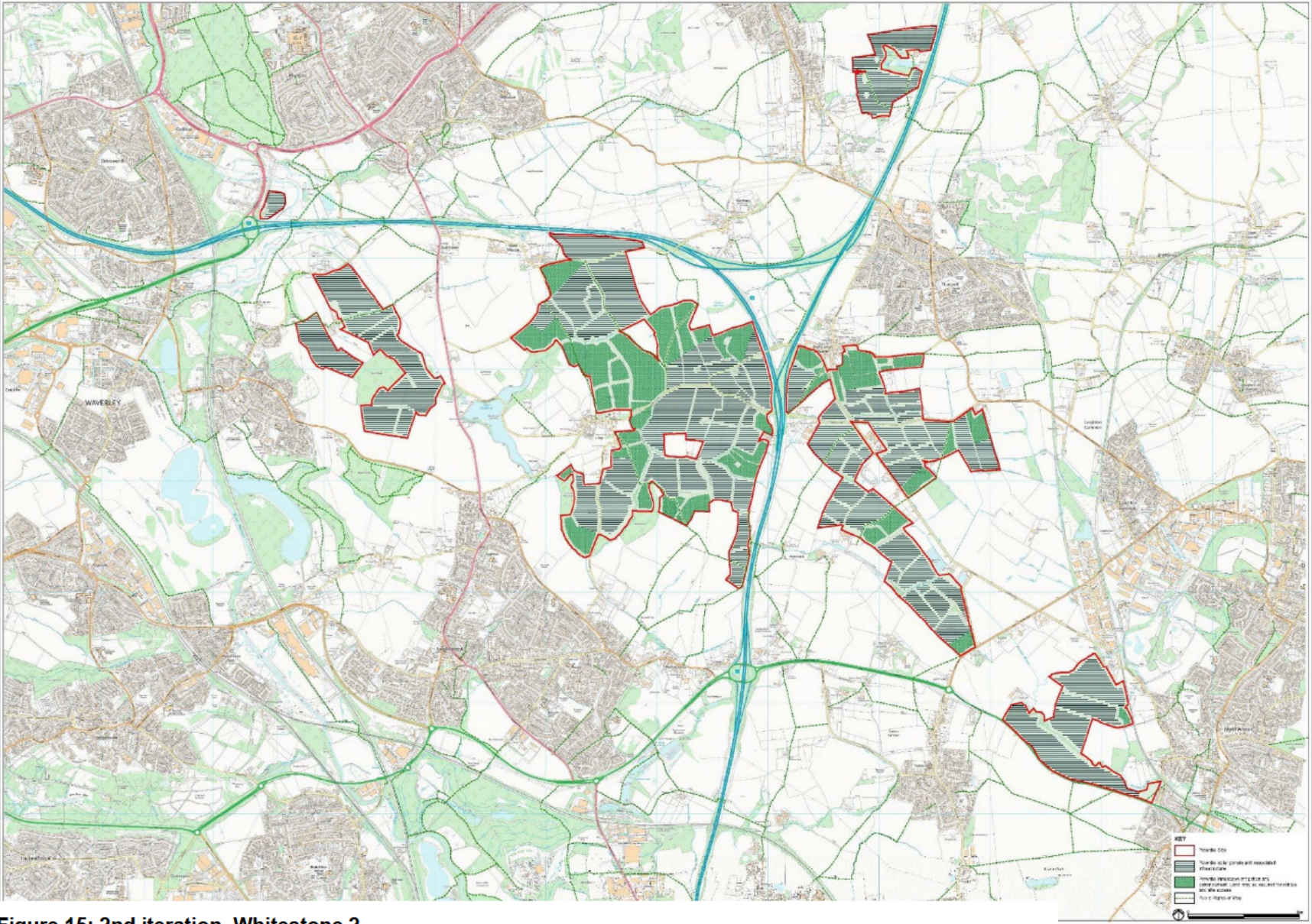


Figure 15: 2nd iteration. Whitestone 2

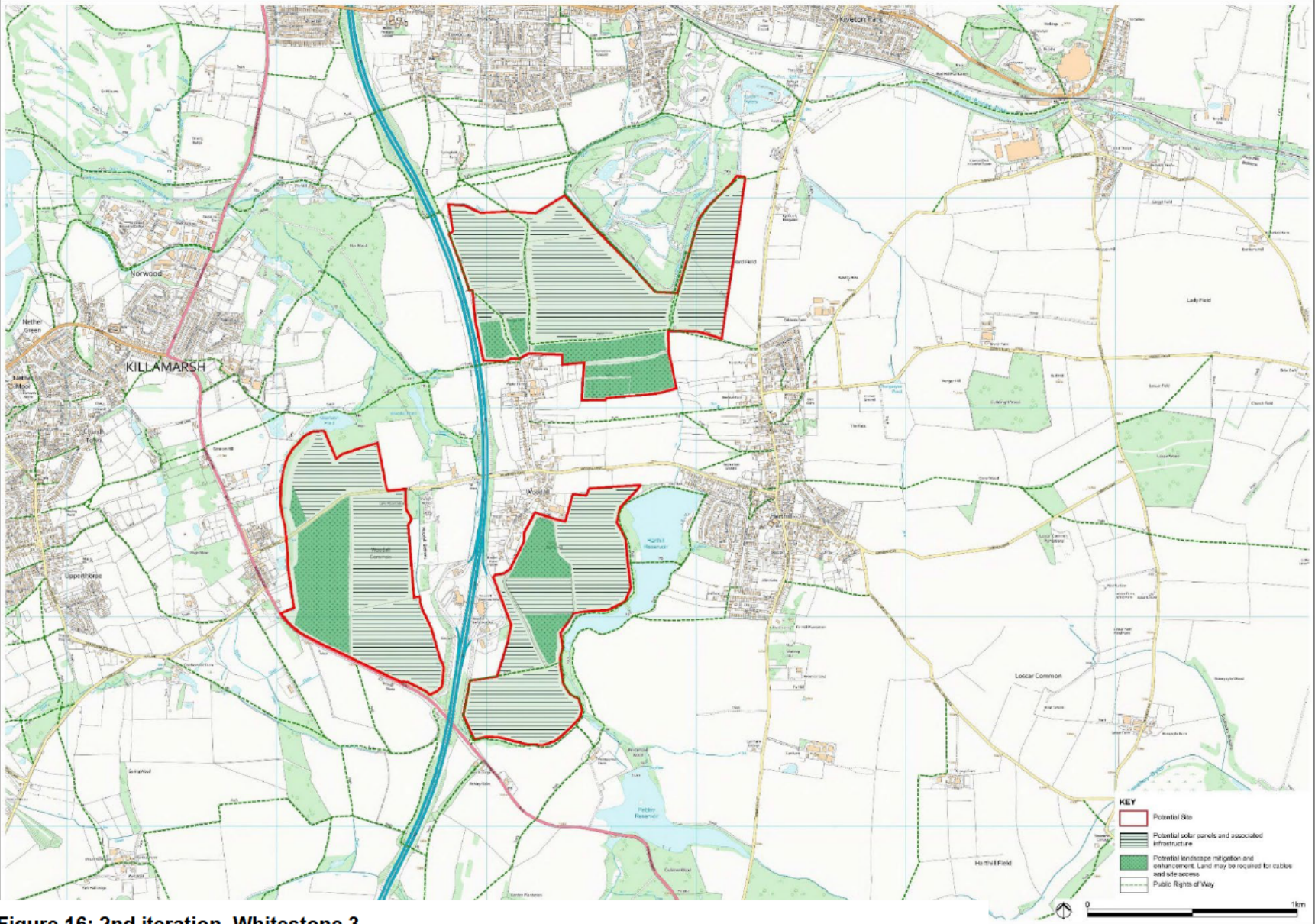


Figure 16: 2nd iteration. Whitestone 3

Masterplan 3 (Autumn 2025)

4.1.12 Masterplan 3, provided below at **Figure 17**, was prepared for the purpose of statutory consultation and therefore built on Masterplan 2 to provide further detail to inform the preparation of the Preliminary Environmental Information Report, in particular identifying the potential locations of substation and battery sites, and alignment of cable routes.

Siting of substation and BESS

4.1.13 The project team sought to limit the impact of project substations from the outset. This included a thorough review of the number and distribution of project substations. Through this review, the project concluded that no substation was required in Whitestone 3, rather the power from that part of the Proposed Development would be transferred to Whitestone 2 at a lower voltage.

4.1.14 This design decision was made early in the process and avoids any impacts associated with substations across Whitestone 3.

4.1.15 Building on the substation strategy review, it was identified that the project required one substation in Whitestone 1 and two substations in Whitestone 2, as well as a single BESS location in Whitestone 2.

4.1.16 Locations for consultation were identified by the project team including input from the design lead, engineering team, and environmental topics.

- Three potential locations for on-site substations were identified within W1. Two were located towards the centre of W1. One was located on the eastern edge of W1, south of Clifton.
- Five potential locations for on-site substations were identified within W2, two of which had potential to include BESS.

4.1.17 The potential substation locations were identified based on their technical feasibility, including consideration of existing topography, potential for flood risk, and proximity to residential dwellings.

4.1.18 National Policy Statement for Electricity Networks Infrastructure (EN-5) [Ref 8] requires applicants that, as well as considering the criteria for good design, applicants also consider the Horlock Rules when siting substations. NPS EN-5 lists the Horlock Rules in paragraph 2.9.19. These are provided in the table below **Table 2**, complete with the approach taken by the Proposed Development in response.

Table 2: Application of the Horlock Rules

Horlock Rule (summary)	Approach
Consider environmental issues from the earliest stage in order to keep adverse effects to a reasonably practicable minimum	Environmental issues were integral to the siting of project substations. A series of design team workshops were held through which each environmental topic was consulted on the location of substations and their feedback incorporated in order to first seek the avoidance of environmental impacts.
Seek to avoid altogether internationally and nationally	No part of the Order Limits are within areas internationally or nationally designated for

<p>designated areas of the highest amenity</p>	<p>their amenity value. When selecting potential substation locations in Masterplan 3, the design sought to select locations that would be least intrusive on the inherent value of the landscape and the associated amenity value provided to people.</p>
<p>Protect as far as reasonably practicable areas of local amenity value, important existing habitats and landscape features including ancient woodland, historic hedgerows, surface and ground water sources and nature conservation areas.</p>	<p>Through the input of the project's environmental specialists, each of these environmental features were avoided in the siting of substations.</p>
<p>Take advantage of the screening provided by landform and existing features and the potential use of site layout and levels to keep intrusion into surrounding areas to a reasonably practicable minimum</p>	<p>Utilisation of existing screening features was a key factor in selecting potential substation locations, albeit this was balanced against the requirement to select reasonably level sites in order to minimise the extent of earthworks required. Where existing screening is not present, new planting would be introduced as part of the Proposed Development to soften the appearance of new substations.</p>
<p>Keep the visual, noise and other environmental effects to a reasonably practicable minimum</p>	<p>A 300m buffer was applied to all residential properties in the siting of project substations and BESS in order to embed mitigation in relation to visual and noise effects.</p>
<p>Consider the land use effects of the proposal when planning the siting of substations or extensions</p>	<p>Land use is relatively consistent across the extent of the Order Limits and the surrounding area such that this rule had a limited influence on the siting of substations.</p>
<p>Consider the options available for terminal towers, equipment, buildings and ancillary development appropriate to individual locations, seeking to keep effects to a reasonably practicable minimum</p>	<p>These factors will be considered through the detailed design phase.</p>
<p>Use space effectively to limit the area required for development consistent with appropriate mitigation measures and to minimise the adverse effects on existing land use and rights of way, whilst also having regard to future extension of the substation</p>	<p>The space to be occupied by each substation is limited by the Outline Design Parameters [EN0110020/APP/7.3]. New planting is to be introduced around the edge of substations sites as shown on the Mitigation Masterplan provided in the Outline Landscape and Ecology Management Plan [EN0110020/APP/5.13].</p>

<p>Make the design of access roads, perimeter fencing, earthshaping, planting and ancillary development an integral part of the site layout and design, so as to fit in with the surroundings</p>	<p>These factors will be considered further through the detailed design phase. Consideration to date has included:</p> <ul style="list-style-type: none"> - Fencing and gates: perimeter security fences will be installed comprising galvanised welded wire up to 3m above ground level with an additional 1m of electrified fencing. The appearance of the perimeter fence will be softened by the introduction of new planting. - Access roads: access requirements have been integral to the siting of potential substation locations, seeking to minimise the impact of project deliveries on local villages and road network. Access roads within the substations will be specified through detailed design. - Earthshaping: topography has been a key influence on the site selection. Level sites have been preferred in order to limit the extent of earthworks required, thereby limiting the associated impact. - Belts of vegetation will be introduced along visually sensitive perimeters to minimise the visual impact of the substation.
<p>In open landscape especially, high voltage line entries should be kept, as far as possible, visually separate from low voltage lines and other overhead lines so as to avoid a confusing appearance</p>	<p>These factors will be considered through the detailed design phase.</p>
<p>Study the inter-relationship between towers and substation structures and background and foreground features so as to reduce the prominence of structures from main viewpoints. Where practicable the exposure of terminal towers on prominent ridges should be minimised by siting towers against a background of trees rather than open skylines</p>	<p>The visual impact of proposed substations, including their impact on the skyline, was considered by landscape and visual specialists as part of the siting optioneering. Siting substations on prominent ridgelines has been avoided so far as practicable.</p>

Definition of cable routes

4.1.19 An exercise was undertaken by the project design team in the definition of cable routes. NPS EN-5 (para 2.9.21) includes the presumption for overhead lines. However, the project team concluded that overhead lines would have resulted in

greater adverse environmental impacts than underground lines, particularly on landscape character and people's visual amenity. Underground cable routes were therefore selected as part of the project commitment to avoid and minimise environmental impacts.

- 4.1.20 The alignment of underground cables was subject to multiple rounds of design development and review. The alignments proposed in Masterplan 3 included embedded mitigation by avoiding sensitive environmental features as far as practicable. Options were presented for stakeholder review and comment through statutory consultation, as documented in **Consultation Report [EN0110020/APP/5.1]**.

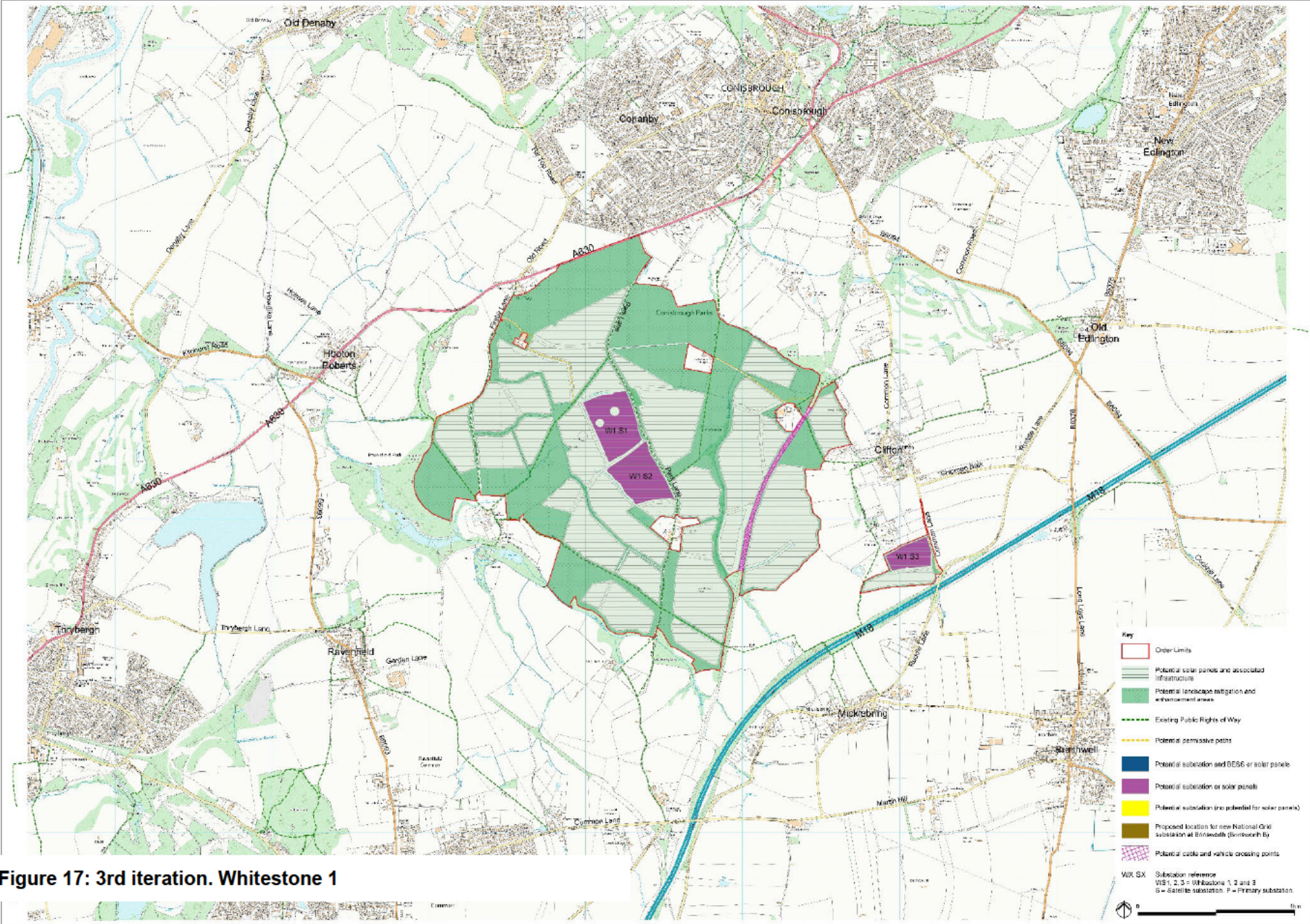


Figure 17: 3rd iteration. Whitestone 1

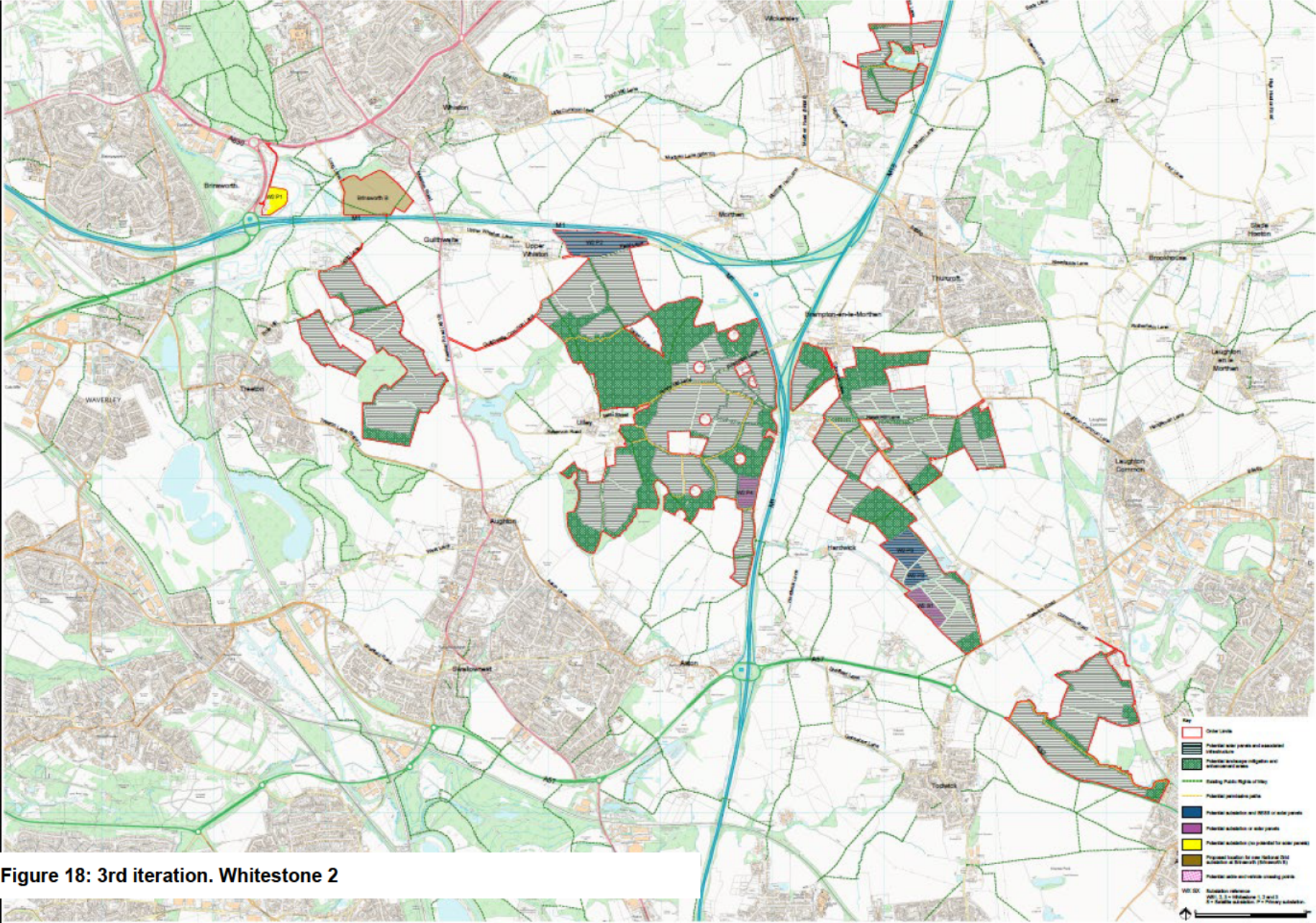


Figure 18: 3rd iteration. Whitestone 2

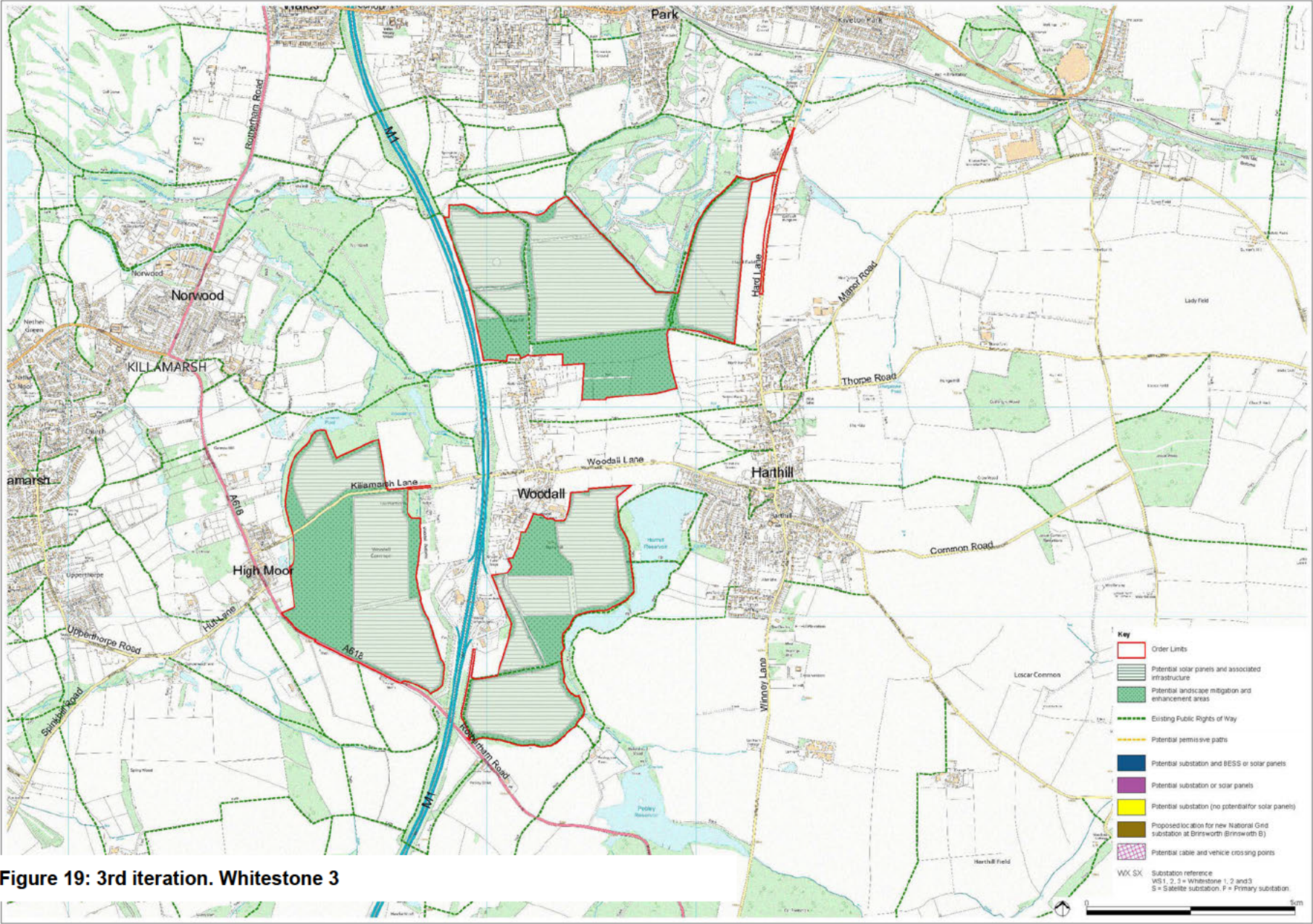


Figure 19: 3rd iteration. Whitestone 3

Masterplan 4. Summer 2026

4.1.21 Masterplan 4, shown on the **Illustrative Masterplan [EN0110020/APP/6.19]**, is the final design. Further design iteration was undertaken from Masterplan 3, focussing on:

- Providing a greater offset in proximity to hamlets and villages across the area;
- Providing greater buffers to public rights of way;
- Confirming the final location of the proposed substations and BESS;
- Consolidating the land to minimise the spatial extent of the project, as far as practicable; and
- Refining the extent of mitigation and enhancement land to provide a proportionate level and retain current land use and associated character.

4.1.22 A description of the update under each of these headings is provided below.

Greater offsets in proximity to hamlets and villages

4.1.23 Minimising the impact of the Proposed Development on settlement and residents has been a priority throughout design development. To that end, substantial areas of developable land were removed as part of design iteration between Masterplan 1 and Masterplan 2/3. The design was further refined in Masterplan 4 in response to feedback received through statutory consultation, including further visits to residential dwellings and fieldwork.

4.1.24 Changes to avoid and minimise impact on settlements and residents included:

1. **Firsby:** Solar panels north of Firsby were removed. This was in response to feedback received from residents relating to visual amenity and in order to protect the openness experienced when walking on public rights of way north of Firsby, particularly the route extending between Hooton Roberts in the west, and to Micklebring in the east.
2. **Clifton:** Solar panels west and south of Clifton were removed. This was in response to feedback from residents expressing concern regarding adverse impacts on the character of the village and impacts during construction on the local road network and horses present across the locality. The design change was also in response to the designation of the Roman Villa as a Scheduled Monument, protection of Clifton Conservation Area, protection of the visual amenity experienced by people walking on public rights of way west of Clifton, and concerns raised by residents and business owners located in proximity to the Order Limits.
3. **Treeton:** Reduction of solar panels proposed on the western edge of the Order Limits east of Treeton, utilising existing landform to provide visual screening.
4. **Ulley:** Removal of solar panels from land south of Ulley in response to consultation feedback and to protect existing residential visual amenity.
5. **Removal of solar panels east of Long Lane** in response to consultation feedback and to protect residential visual amenity.
6. **Withdrawal of proposed solar panels north of Harthill.** Increasing the distance between proposed solar panels and residential properties maintains the southern facing slope as open and places the solar panels on flatter land, reducing the potential for visual impact.

4.1.25 The final design confirms that no solar panels would be located within 50m of residential dwellings. An illustration of indicative approach to design around residential dwellings is shown below.

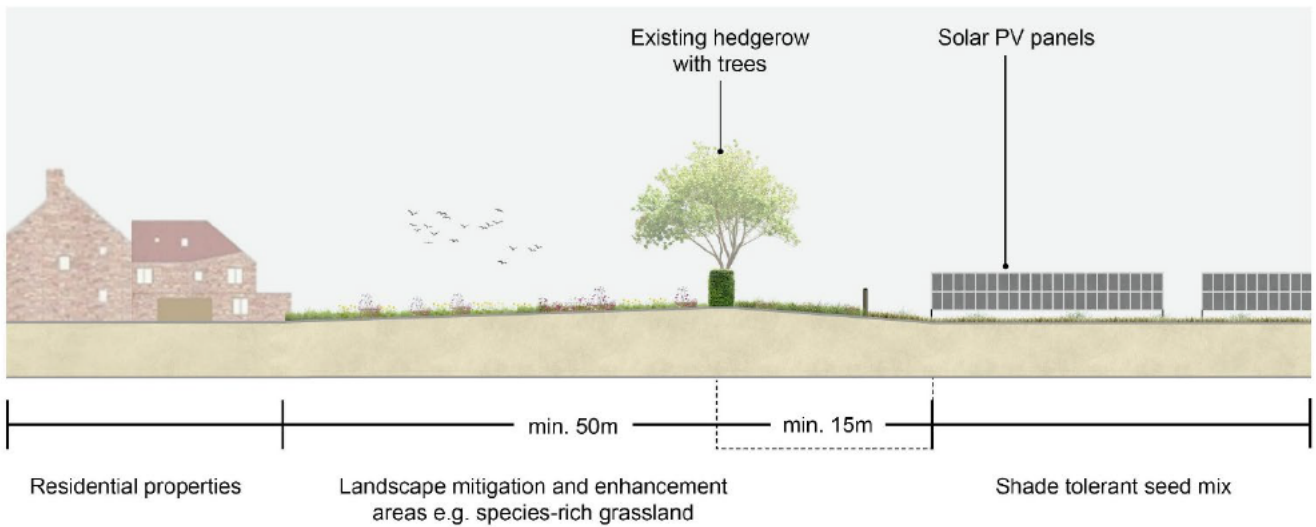


Figure 20: Illustrative approach to residential offsets

4.1.26 The iterative design development around a selection of settlements is shown in the figures below.



Brampton-en-le-Morthen

Project Launch – Masterplan 1

- Preliminary offsets from Toad Lane of 50m
- Preliminary offset from Wood Lane designed to maintain open views across field to the south on the approach into Brampton Conservation Area.

Brampton-en-le-Morthen

Statutory Consultation – Masterplan 2/3

- Potential solar set back from Toad Lane by c. 400m, locating solar behind existing vegetation.
- Potential solar set back from Wood Lane by c. 200m, locating solar behind existing vegetation.
- Solar removed from land south of PRoW to the south west of Brampton-en-le-Morthen to maintain open views to the east

Brampton-en-le-Morthen

DCO Submission – Masterplan 4

- Removal of land south of Toad Lane from the Order Limits, confirming no change to the management of the land in this location.



**Clifton
Project Launch – Masterplan 1**

- Preliminary offsets from Clifton to maintain open slopes west of the settlement and the setting of Clifton Conservation Area.



**Clifton
Statutory Consultation – Masterplan 2/3**

- Removal of potential solar in the field south of PRow west of Clifton to maintain open views and avoid potential for solar within the boundary of Conisbrough Parks Romano-British Villa Scheduled Monument.



**Clifton
DCO Submission – Masterplan 4**

- Removal of potential solar in the field north of PRow west of Clifton to maintain open views across both sides of the PRow, maintain the setting of Conisbrough Parks Romano-British Villa Scheduled Monument, and in response to near neighbour visits.
- Complete removal of potential solar and substation land south of Clifton in response to consultation feedback.



**Firsby
Project Launch – Masterplan 1**

- Order limits set back from Firsby to be sited behind existing vegetation
- Preliminary offsets from PRoW of at least 10m to the closest fenceline and 15m to the closest solar panel.



**Firsby
Statutory Consultation – Masterplan 2/3**

- Removal of potential solar from west of Firsby following consultation with residents and to maintain open views west of PRoW.
- Removal of potential solar from east of Firsby to maintain visual openness in residential views.
- Introduction of offset extending c.250m north of Firsby in response to archaeological sensitivity, residential views and consultation feedback.



**Firsby
DCO Submission – Masterplan 4**

- Complete removal of potential solar in field north west of Firsby in response to residential feedback noting the potential for impact on residential views.



Harthill

Project Launch – Masterplan 1

- Order Limits set back from western and northern edge of Harthill.
- Order Limits set back from PRow extending between Woodall and Harthill.

Harthill

Statutory Consultation – Masterplan 2/3

- Reduction in the eastern extent of the Order Limits, further reducing visibility from northern edge of Harthill.
- Reduction in the potential for solar between Woodall and Harthill, responding to existing openness and visual amenity from PRow.

Harthill

DCO Submission – Masterplan 4

- Removal of solar north west of Harthill, siting the PV panels on plateaued land, avoiding southern facing slope in response to consultation with residents on the northern edge of the village.



Woodall (north)

Project Launch – Masterplan 1

- Land to the north of Woodall, sloping towards the settlement, was excluded from consideration for having potential for solar.
- Land east of Woodall was maintained free from potential for solar panels to maintain a sense of openness between Woodall and Harthill.

Woodall (north)

Statutory Consultation – Masterplan 2/3

- Further land with potential for solar was removed east of Woodall to maintain easterly open views and a sense of openness experienced on PRow between Woodall and Harthill.

Woodall (north)

DCO Submission – Masterplan 4

- The extent of the Order Limits was reduced to the east of Woodall, confirming that there would be no change to the management or function of the land.



**Woodall (south)
Project Launch – Masterplan 1**

- Land south of Woodall Lane was not included within the emerging Order Limits, maintaining open views experienced by people travelling east of Woodall.



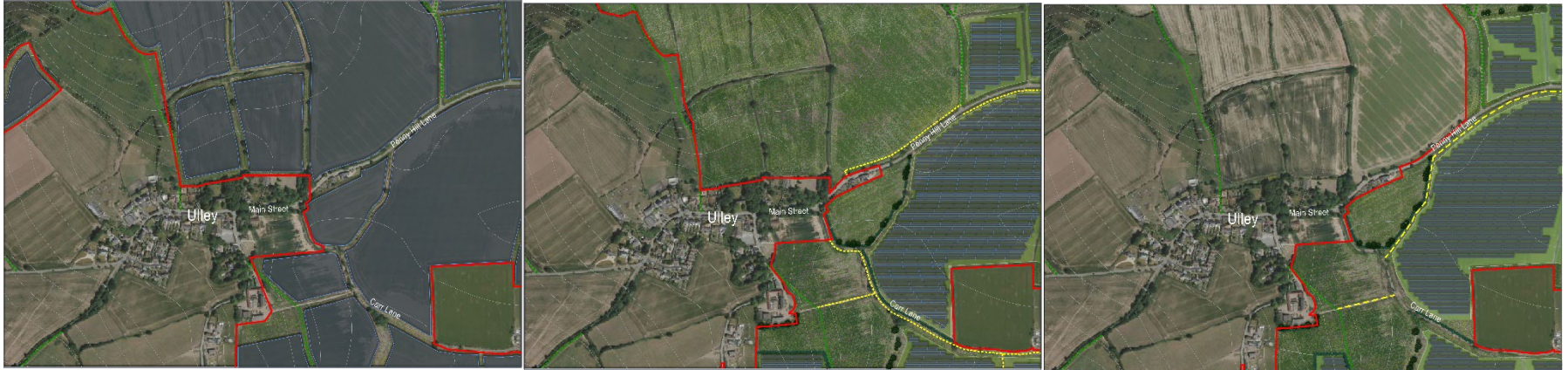
**Woodall (south)
Statutory Consultation – Masterplan 2/3**

- Land east of Dowcarr Lane was removed from the extent of land with potential for solar, utilising existing topography and field boundaries to avoid or minimise the potential for solar panels within residential views.



**Woodall (south)
DCO Submission – Masterplan 4**

- Proposed solar was removed from land between Woodall and the northern edge of Harthill Reservoir to maintain the existing open views experienced by people walking on PRow around the edge of the water.
- The offset from properties on the western edge of Woodall was increased in line with consultation feedback.



**Ulley
Project Launch – Masterplan 1**

- Land west of Ulley was not within the Order Limits. Fields north of Ulley that had existing boundary vegetation, were identified for having potential for solar panels.

**Ulley
Statutory Consultation – Masterplan 2/3**

- Substantial areas of potential solar panels were removed to the north, east and south of Ulley in order to avoid and minimise impacts on the setting of the village and reduce potential impact on people's visual amenity.

**Ulley
DCO Submission – Masterplan 4**

- Further offsets were incorporated in response to residential visual amenity from properties south of Ulley.
- The offset from Penny Hill Lane was extended to minimise the visual impact experienced by people entering and leaving the village to the east.
- Land north of Ulley was removed from the Order limits, confirming that the Proposed Development would not alter the land use and therefore the agricultural setting of the village would remain.



**High Moor
Project Launch – Masterplan 1**

- Preliminary offsets were embedded on the west of the Order Limits to reduce the visual impact of the proposed solar panels and protect the root protection areas of existing vegetation.



**High Moor
Statutory Consultation – Masterplan 2/3**

- The field east of High Moor was excluded from land with potential to be occupied by solar panels. A local ridge line extends north/south along the eastern edge of the field. Consolidating solar to the east of the ridge and lower land north of Kilmarsh Lane avoids and/or reduces the visual impact experienced by residents of High Moor.



**High Moor
DCO Submission – Masterplan 4**

- Land east of High Moor was removed from the Order Limits, confirming that the Proposed Development would not alter the land or its existing land use.

Buffers to Public Rights of Way

4.1.27 The Proposed Development had previously defined a minimum offset of 15m from public rights of way to the closest solar panel, and 10m to the closest fence. This distance is exceeded in many parts of the Order Limits in order to provide natural variation and respond to specific features, for instance topography or existing visual amenity. This was further refined in Masterplan 4, with the extent of offsets extended, for instance:

- Increase in the distance between Carr Lane and proposed solar panels to minimise impact on visual amenity experienced by people travelling on Carr Lane.
- Reduction in the area proposed to be occupied by solar panels west of Harthill Reservoir, protecting visual amenity experienced by people travelling on PRow around the northern edge of the reservoir.

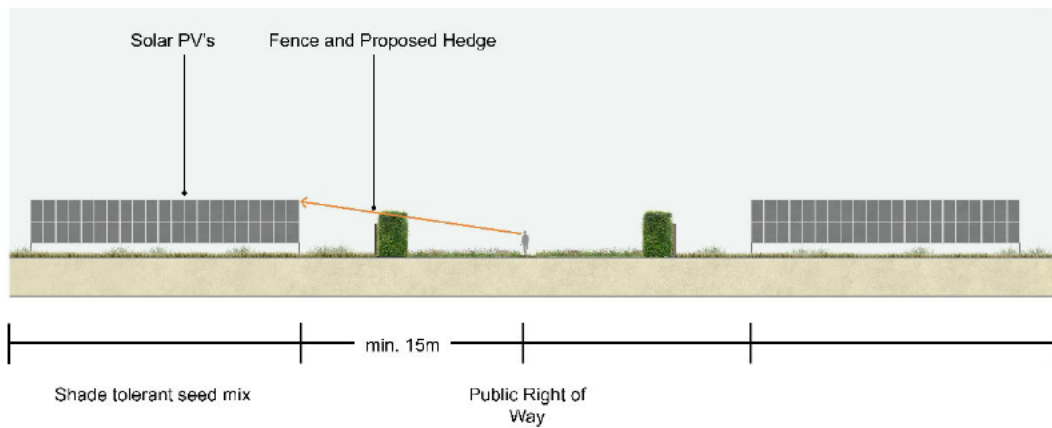


Figure 22: Illustrative approach to minimum offset on both sides of PRow

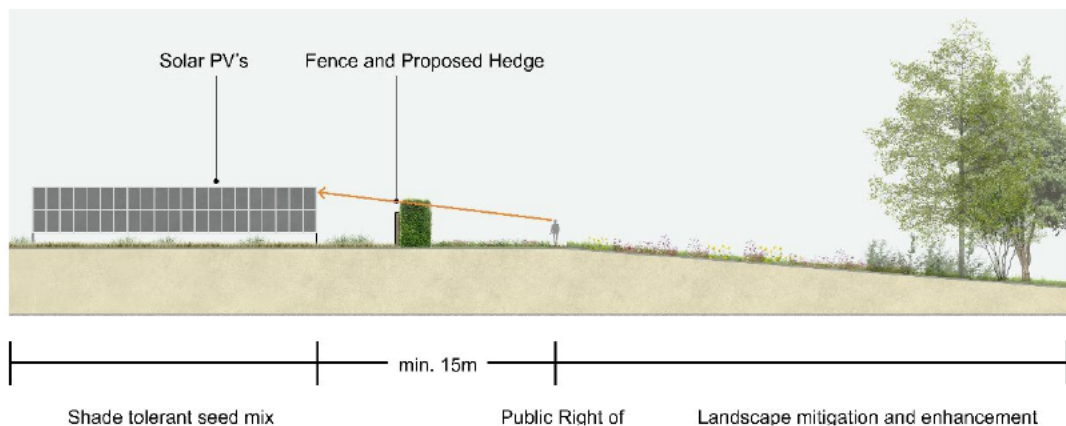


Figure 21: Illustrative approach to design on one side of PRow

Consolidation

4.1.28 As part of the principle to minimise visual impact, and respect landscape character, Masterplan 4 sought to consolidate the extent of development to contiguous areas where possible, minimising the spatial extent over which change may be experienced. Such examples include the removal of land south of Clifton which were disconnected from the core of Whitestone 1. Removing the parcel

consolidated the project and avoided impacts to the setting of Clifton and associated visual amenity.

Refining the extent of mitigation and enhancement land

- 4.1.29 The project seeks to make efficient use of land. The extent of solar proposed across the Order Limits was reduced during the iterative design process spanning Masterplan 1 to Masterplan 4. Where solar was removed, the land was typically then shown to be landscape mitigation and enhancement. The extent of this land was reviewed through the development of Masterplan 4. Where there was not a clear rationale for the inclusion of mitigation land, the land was removed from the Order Limits. Similarly, where environmental effects could be mitigated or compensated through alternative means that would require a lower land take, these opportunities were taken. This allows the retention of more land within the arable agricultural regime.

4.2 Delivery of positive outcomes

Permissive paths

- 4.2.1 Masterplan 4 includes a series of proposed permissive paths to provide linkages with the public right of way network. The proposals were informed by desk-based research, field work, discussion with parish councils and feedback through consultation materials.
- 4.2.2 The proposed permissive paths seek to provide new connections to extend options and routes for pedestrians, equestrians and cyclists. These routes are secured within the **Outline Landscape and Ecology Management Plan [EN0110020/APP/5.13]**. The extent and location of the paths are as follows:
- Approximately 2.92 km of permissive paths proposed across Whitestone 1 to provide additional equestrian routes that link with the existing bridleways.
 - Approximately 10.8 km of permissive paths are proposed across Whitestone 2. To the north, two permissive paths provide access around King's Pond Plantation. To the west, the proposed permissive path follows Ulley Brook to connect with the existing footpath to the north and Treeton Lane to the south. To the south of Upper Whiston, a permissive path links Guilthwaite Common Lane and Field Lane. To the east of Ulley, a permissive path forms a circular route that begins at Carr Lane, follows the field boundaries north, along Penny Hill Lane, then turns south to rejoin Carr Lane. It offers equestrians an alternative route away from the busy road. Permissive paths link with the existing PRow to create a circular route across Brampton Common. To the east, the permissive path offers an alternative route away from the A57, connecting the A57 sidewalk to Anston Brook and the existing footpath near North Anston.
 - Approximately 0.86 km long permissive path across Whitestone 3, begins in Woodall, crosses Stone Hill and joins the existing footpath at Harthill Reservoir.

Biodiversity and Green Infrastructure

- 4.2.3 The design of the infrastructure and the environmental measures aims to deliver BNG and contribute towards local conservation priorities. This includes providing new and enhanced contribution to the local green infrastructure network including extensive hedgerow networks, field margins and ditches and habitats that could

provide increases in the size and distribution of species including brown hare, hedgehog, common toad, bats and farmland birds.

- 4.2.4 The commitment to enhancing, creating and managing habitats positively recognises that for a large array of flora and fauna, solar farms provide real opportunities to increase biodiversity. The extent of the Proposed Development provides the opportunity to deliver nature conservation benefits that can positively contribute to the emerging Local Nature Recovery Strategies (LNR) of South Yorkshire and Derbyshire. In the absence of published strategies, the Proposed Development is seeking to contribute to commonly adopted ecological enhancement principles of providing more high-quality habitats as part of a connected network. This includes measures such as new planting to improve the existing fragmented network of hedgerows and diversification of grassland and wildflower species across the Order Limits in response to existing soil conditions, enhancing resource for pollinators.

Sustainability

- 4.2.5 Sustainability is a key aspect of good design and has been a key consideration in the development of the Proposed Development. This is reflected in several design principles, in particular those under the heading of climate, namely:

- Maximise the amount of renewable energy provided to the National Grid;
- Craft a project that is resilient to climate change; and
- Limit the amount of embodied carbon across the project where reasonable.

- 4.2.6 Consideration of sustainability has influenced the approach to the use of concrete across the project, for instance, the use of concrete footings to fix PV mounting structures has been limited to areas of archaeological sensitivity, as secured by the **Outline Design Parameters [EN0110020/APP/7.3]**.

- 4.2.7 The substation parameters have been drafted to allow for either gas insulated substations (GIS) or air insulated substations (AIS). Whilst from an aesthetic point of view, itself an important consideration of good design, GIS carries greater scope for reducing visual impact, AIS avoids the use of sulphur hexafluoride (SF₆). SF₆ is well known as one of the most potent greenhouse gasses. Solutions to replace SF₆ with greener alternatives are in development but are not yet common to the market. Therefore, by retaining optionality in the substation parameters, within the Rochdale Envelope approach, flexibility is maintained to respond to the highest priority design considerations and technology available on the market in detailed design.

- 4.2.8 New planting is proposed across the Order Limits to enhance the local green infrastructure network and provide visual screening. This planting has been designed in response to existing conditions, for example the inclusion of a variety of grassland and meadow mixes. The planting proposed also includes a broad range of species which, as well as furthering biodiversity, enhances biosecurity, improving the planting's resilience to pest, disease, flood and drought.

Agricultural land classification

- 4.2.9 The quality of agricultural land has been considered throughout the iterative design process. This was first reflected in the initial site selection which, following review of Natural England's Provisional Agricultural Land Classification data, sought to site the Proposed Development outside of land identified as being best and most versatile (BMV). Opportunities to further reduce the extent BMV land have been taken throughout the pre-application phase; for instance, land north

west of Firsby was identified as being a combination of Grade 1 and 2 and therefore BMV. This land was removed from the Order Limits after Statutory Consultation (after consideration of several wider factors alongside ALC). Similarly, the classification of agricultural land was also considered in the siting of substations, each of which are predominantly located on non-BMV land.

4.3 Summary of adherence to design principles

4.3.1 The project design principles remained the benchmark of design throughout the pre-application phase. **Table 3** provides examples of how each design principle has informed and shaped the design.

Table 3: Response to design principles

Design Principle	Design Response
Maximise the amount of renewable energy provided to the National Grid	With reference to the Works Plans [EN0110020/APP/2.3] , the extent of the land within Works No. 1 is proportionate to the size of the grid connection. The parameters associated with the solar design, detailed in the Outline Design Parameters [EN0110020/APP/7.3] provide reasonable flexibility to allow an efficient design to be crafted at the detailed design phase, including flexibility regarding the height and tilt of panels.
Craft a project that is resilient to climate change	<p>The first response to this design principle was the site selection methodology which sought to identify sites outside flood extents when allowing for climate change. Whilst pockets of potential flood areas are present, the majority of land would not be impacted. The Outline Design Parameters [EN0110020/APP/7.3] associated with Work No. 1 embed the need to maintain a freeboard of up to 600mm, or 300mm following modelling, under the solar panels located within flood zone 2 and 3.</p> <p>The species lists provided in the Outline Landscape and Ecology Management Plan [EN0110020/APP/5.13] include a diverse range of species in order to mitigate against a changing climate which may favour some plant species over others.</p>
Limit the amount of embodied carbon across the project where reasonable	<p>The impact on embodied carbon has been considered in the siting of key infrastructure and the definition of access tracks, which are limited to 6m in width. The extent of concrete proposed has been limited where practicable, for instance by utilising piles or screw piles over concrete ballast to secure frames for solar panels.</p> <p>This design principle will continue to guide design development through the detailed phase, informing considerations such as the extent and placement of access tracks.</p>

<p>Engage with stakeholders to develop the design</p>	<p>Good design must be informed by good consultation. The iterative process has been informed by discussion with stakeholders at each phase of development including statutory consultees, parish councils, local communities, and individual residents.</p> <p>Visits made by the project team to properties located in proximity to the Order Limits were a key influence on the design development.</p>
<p>Find out what is important to people about the local area and seek to incorporate feedback</p>	<p>Each phase of consultation informed the next iteration of the design. For instance, key concerns raised throughout included:</p> <ul style="list-style-type: none"> - Visual impact on people’s visual amenity; - Impact to wildlife; - Use of agricultural land; - Interaction with flood zones; - Impact on public rights of way; and - Impact on heritage assets. <p>Each stage of the design development has sought to respond to these issues, avoiding and minimising impacts as far as is practicable.</p>
<p>Consider how people engage with their local environment and retain these patterns</p>	<p>All public rights of way will be maintained as open through the operational phase of the Proposed Development.</p> <p>A review of maps, walking routes and field work was undertaken to provide an initial understanding of how people move across the landscape. This was supplemented through discussion with local communities. Findings have been reflected in the final design. For instance, with reference to Whitestone 1, the footpath between Hooton Roberts and Micklebring (to the west and east of the Order Limits respectively) was identified as a key recreational connection. In response, the project withdrew the extent of solar proposed adjacent to the route, utilising existing topography to minimise visual impact where possible, to minimise impact on people’s experience.</p>
<p>Enhance recreational access across the landscape</p>	<p>Through discussion with local stakeholders a series of permissive paths have been proposed across the Order Limits. The permissive paths have been designed to provide connections with the existing public right of way network for both equestrians, cyclists and pedestrians.</p>
<p>Respect landscape character and cultural heritage</p>	<p>The potential impacts on landscape character and cultural heritage have been considered from the outset, informing the preliminary site boundary which excluded land to avoid undue landscape or heritage effects.</p> <p>The relationship between the Proposed Development and heritage assets been considered throughout the iterative design</p>

	<p>process. For instance, the northeastern part of Whitestone 1 has been refined in response to the presence and setting of the Scheduled Monument and Clifton Conservation Area.</p>
<p>Minimise visual impact</p>	<p>Whilst it is inevitable that projects of this scale will impact people’s visual amenity, the design process has sought to minimise such impacts at each stage. Examples are provided throughout this DAD but include:</p> <ul style="list-style-type: none"> - Maintaining open land in proximity to settlements; - Utilising existing screening provided by landform, such as east of High Moor, and vegetation; - Siting larger components, such as substations, in locations distant from the most sensitive visual receptors (typically residents at home); and - Retention of existing vegetation in combination with the proposed planting to maximise the effect of visual screening.
<p>Support local ecology and enhance biodiversity, enriching ecosystems where possible</p>	<p>The Proposed Development presents an opportunity to provide substantial benefits to local wildlife and biodiversity through the introduction of new planting across the Order Limits including new areas of grassland, hedgerows, trees, and scrub. The diversity and extent of these new habitats have been maximised as far as practicable and tailored to suit the prevailing conditions of the Order Limits and surrounding landscape. Details of the proposed planting are provided in the Outline Landscape and Ecology Management Plan [EN0110020/APP/5.13].</p>

4.3.2 The final design is shown on the **Illustrative Masterplan [EN0110020/APP/6.19]**. The following figures show how the extent of developable land has reduced in response to environmental assessment and consultation feedback from inception through to submission.

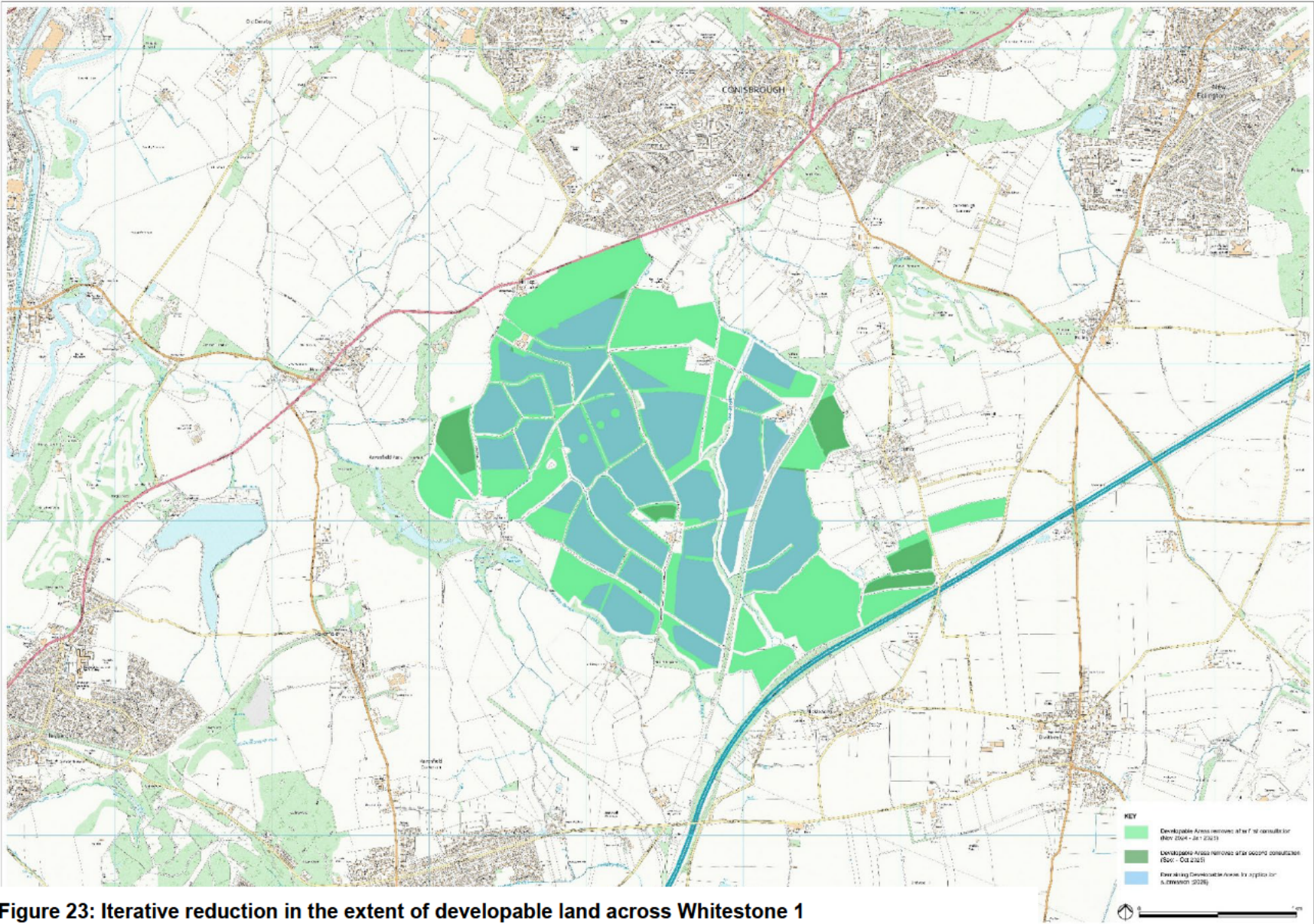


Figure 23: Iterative reduction in the extent of developable land across Whitestone 1

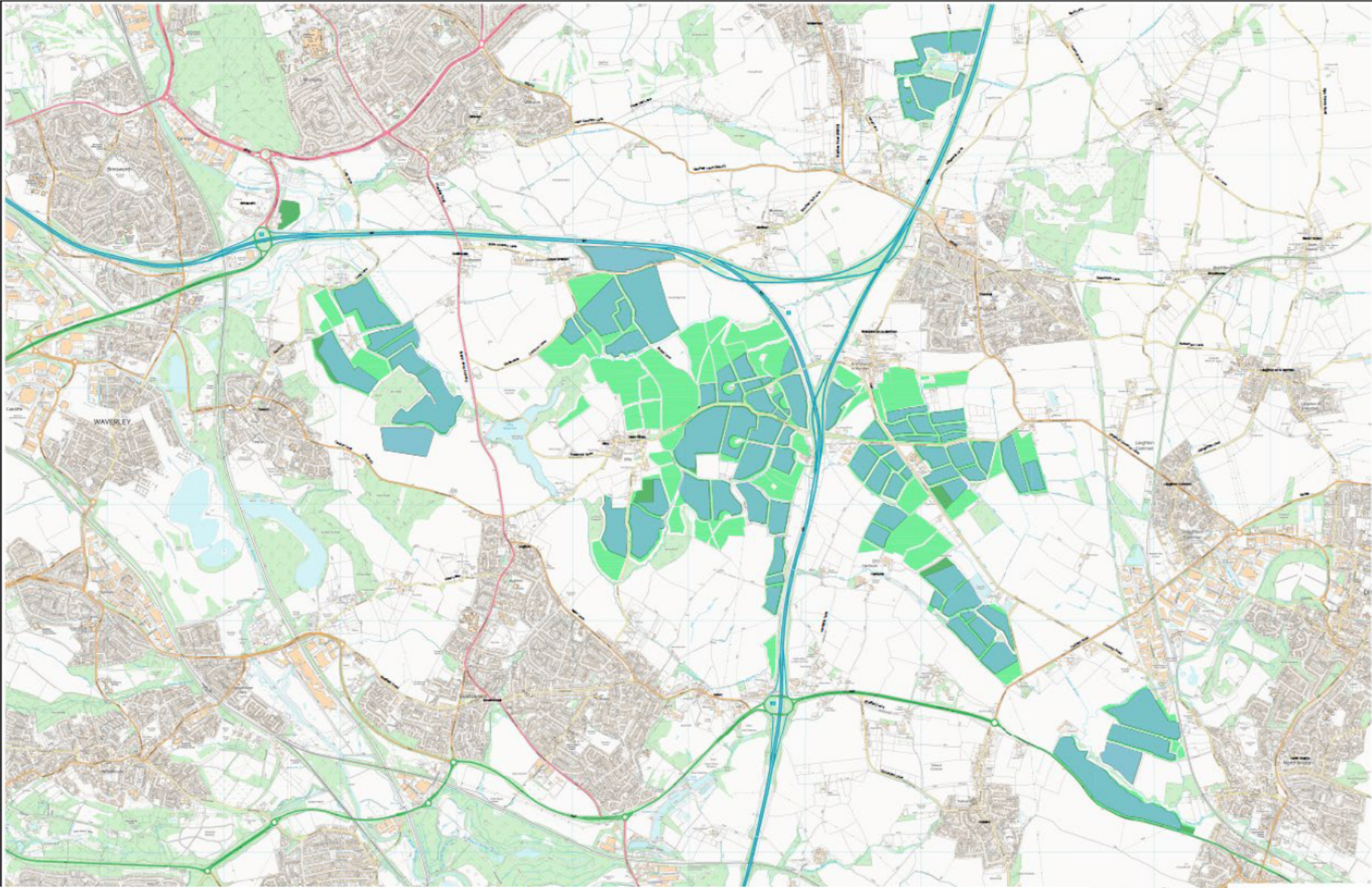


Figure 24: Iterative reduction in the extent of developable land across Whitestone 2

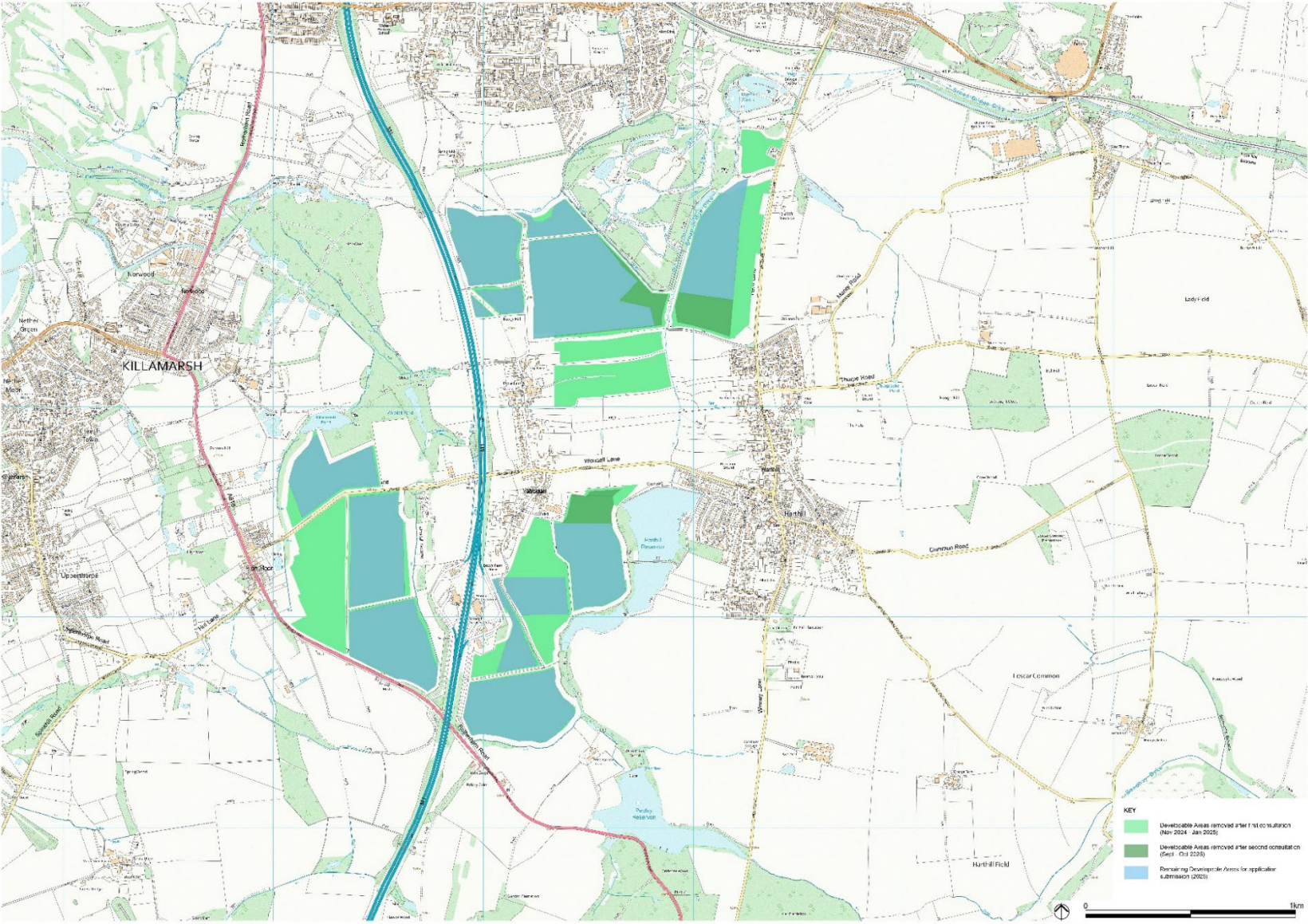


Figure 25: Iterative reduction in the extent of developable land across Whitestone 3

5 SECURE

Approach to securing good design

- 5.1.1 Good design has been secured throughout the control documents to inform detailed design. The final detailed design will be subject to agreement with the relevant planning authorities, as required by Requirement 3 of the **draft DCO [EN0110020/APP/3.1]**.
- 5.1.2 The detailed design of the Proposed Development must be in accordance with the **Outline Design Parameters [EN0110020/APP/7.3]**. The parameters provide suitable flexibility in order that detailed design may respond to technological advancement and final surveys to define an optimal layout, whilst ensuring that good design is maintained and the impacts of the Proposed Development will not exceed those reported in the Environmental Statement.
- 5.1.3 Good design in the detailed design phase is also secured through the **Works Plans [EN0110020/APP/2.3]** which define the spatial extent of eight works. The Order requires that only the works defined by each Work Number may occupy the spatial extent of the area shown, thereby limiting the extent of each component of the project in line with the design work undertaken and the assessment of environmental impacts provided.
- 5.1.4 The illustrative information provided as part of the DCO submission illustrates how the detailed design may be brought forward within the extent of the consent envelope defined by the limitations summarised above. Further limitations on the flexibility within the DCO are placed on the detailed design process by the outline management plans, each of which will be subject to final agreement with the relevant stakeholders.
- 5.1.5 Together, the controls placed on future design development will ensure good design continues to be embedded. For example, PCS may be located within Work Number 1. However, as identified through environmental survey and assessment, a further control was required to manage the potential for noise impacts on sensitive receptors. The **Outline Design Parameters [EN0110020/APP/7.3]** therefore place further control on their location and specification to ensure that nighttime noise ratings at residential properties do not exceed 5dB(A) above baseline conditions.
- 5.1.6 Similarly, visual effects experienced by people travelling on public rights of way have been minimised via the use of the spatial extent of works areas and the height parameters secured within the Outline Design Parameters. Utilising the control provided by these documents secures that no solar panels would be located within 15m of a public right of way and makes provision for screening to be introduced to soften and/or mask the appearance of solar arrays, the height of which is limited to 3.8m above ground level.

6 SUMMARY AND CONCLUSION

- 6.1.1 This DAD set out how good design has been systematically embedded at each stage of design development, from project inception through to securing design quality within the DCO application.
- 6.1.2 Good design was embedded from the outset through the establishment of a dedicated Design Lead and a multidisciplinary design team encompassing engineering, planning, environmental, and consultation specialists. A clear project vision was adopted early. Bespoke design principles were drafted under the National Infrastructure Commission's four headings of Climate, People, Place, and Value, ensuring that good design extended beyond aesthetics to encompass sustainability, functionality, stakeholder engagement, biodiversity enhancement, and recreational access.
- 6.1.3 Good design is as much about process as product. To that end, an iterative design process was embedded in the project programme, with each masterplan iteration informed by progressive environmental survey data, consultation feedback, and technical refinement.
- 6.1.4 The 'Research' phase focussed on developing a comprehensive baseline analysis that identified key constraints and opportunities that would shape the design. The 'Coordinate' Phase focussed on iterative design development which resulted in four versions of the masterplan, each demonstrating a progressively refined response to environmental, community, and technical considerations.
- 6.1.5 The Proposed Development will deliver positive outcomes, going beyond avoiding and minimising environmental effects to deliver enhancements including approximately 14.6 km of new permissive paths, informed by community engagement and designed to enhance connectivity within the existing PRoW network, and extensive hedgerow restoration, grassland diversification, and habitat creation contributing to Biodiversity Net Gain with flexibility to align to future Local Nature Recovery Strategies.
- 6.1.6 Good design is secured in the **draft DCO [EN0110020/APP/3.1]** through several means including:
- **Outline Design Parameters [EN0110020/APP/7.3]** which define maximum and minimum envelopes, ensuring environmental effects do not exceed those assessed whilst retaining proportionate flexibility for technological advancement.
 - **Works Plans [EN0110020/APP/2.3]** that spatially define the extent of each project component.
 - Outline management plans (including the **outline Landscape and Ecology Management Plan [EN0110020/APP/5.13]**) which place further controls, subject to agreement with host authorities.
 - Requirement 3 of the **draft DCO [EN0110020/APP/3.1]** which requires the final detailed design to be agreed with the relevant planning authorities.
- 6.1.7 Together, these controls ensure that the principles of good design continue to govern the project through detailed design and into construction and operation.
- 6.1.8 The consent envelope defined in the DCO submission places proportionate controls on the next phase of design development, whilst allowing reasonable flexibility for future response to technological advancement and project innovation.

7 REFERENCES

- Ref 1 Planning Inspectorate (2024) *Nationally Significant Infrastructure Projects: Advice on Good Design*. Accessed at: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-good-design>
- Ref 2 Department for Energy Security and Net Zero (2026) *Overarching National Policy Statement for energy (EN-1), 2025*. London: Department for Energy Security and Net Zero. Available at: <https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1-2025/overarching-national-policy-statement-for-energy-en-1-2025-accessible-webpage>
- Ref 3 Department for Energy Security and Net Zero (2026) *National Policy Statement for renewable energy infrastructure (EN-3), 2025*. Department for Energy Security and Net Zero. Available at: <https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3-2025>
- Ref 4 HM Treasury (2020) *National Infrastructure Strategy*. HM Treasury. Available at: <https://www.gov.uk/government/publications/national-infrastructure-strategy>
- Ref 5 Planning Inspectorate (2024) *Nationally Significant Infrastructure Projects: Advice on Good Design*. Available at: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-good-design>.
- Ref 6 National Infrastructure Commission (2024) *Project Level Design Principles*. London: National Infrastructure Commission. Available at: <https://majorprojects.org/wp-content/uploads/2024/10/NIC-Design-Principles.pdf>
- Ref 7 Ministry of Housing, Communities and Local Government (2021) *National Design Guide*. Ministry of Housing, Communities and Local Government. Available at: <https://www.gov.uk/government/publications/national-design-guide>
- Ref 8 Department for Energy Security and Net Zero (2026) *National Policy Statement for electricity networks infrastructure (EN-5), 2025*. Department for Energy Security and Net Zero. Available at: <https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5-2025>



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