

Outer Dowsing Offshore Wind Preliminary Environmental Information Report Volume 1, Chapter 28: Landscape and Visual

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Abbreviations

Acronym	Expanded name
AIS	Air Insulated Switchgear
AONB	Area of Outstanding Natural Beauty
CA	Conservation Areas
CEMP	Construction Environmental Management Plan
DCO	Development Consent Order
DECC	Department of Energy & Climate Change, now the Department for Energy Security and Net Zero (DESNZ)
DESNZ	Department for Energy Security and Net Zero, formerly Department of Business, Energy and Industrial Strategy (BEIS), which was previously Department of Energy & Climate Change (DECC)
ECC	Export Cable Corridor (offshore ECC or indicative onshore ECC)
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Group
GIS	Gas Insulated Switchgear (substation technology)
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GT R4 Ltd	The Applicant. The special project vehicle created in partnership between Corio Generation (a wholly owned Green Investment Group portfolio company), Gulf Energy Development and TotalEnergies
HDD	Horizontal Directional Drilling
IEMA	Institute of Environmental Management and Assessment
LAT	Lowest Astronomical Tide
LCA	Landscape Character Areas
LEDPP	Landscape and Ecological Design Principles Plan
LVIA	Landscape and Visual Impact Assessment
MDS	Maximum Design Scenario
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
NCA	National Character Areas
NLCA	National Landscape Character Areas
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
ODOW	Outer Dowsing Offshore Wind, trading name of GT R4 Limited
OnSS	Onshore Substation
OPEN	Optimised Environments
OS	Ordnance Survey
PEIR	Preliminary Environmental Impact Report
RHPG	Registered Historic Park and Gardens
RPG	Registered Park and Garden
SLVIA	Seascape, Landscape and Visual Assessment
TCC	Temporary Construction Compound
TJB	Transition Joint Bay
WTG	Wind Turbine Generator
ZTV	Zone of Theoretical Visibility

Terminology

Term	Definition
Array area	The area offshore within the PEIR Boundary within which the generating stations (including wind turbine generators (WTG) and inter array cables), offshore accommodation platforms, offshore transformer substations and associated cabling are positioned.
Baseline	The status of the environment at the time of assessment without the development in place.
Cumulative effects	The combined effect of the Project acting cumulatively with the effects of a number of different projects, on the same single receptor/resource.
Cumulative impact	Impacts that result from changes caused by other past, present or reasonably foreseeable actions together with the Project.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP) from the Secretary of State (SoS) for Department for Energy Security and Net Zero (DESNZ).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of an impact with the sensitivity of a receptor, in accordance with defined significance criteria.
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the Environmental Impact Assessment (EIA) Regulations, including the publication of an Environmental Statement (ES).
EIA Regulations	Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
Environmental Statement (ES)	The suite of documents that detail the processes and results of the Environmental Impact Assessment (EIA).
Haul Road	The track within the onshore ECC which the construction traffic would use to facilitate construction.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Indicative Working Width	The indicative working width within the Export Cable Corridor (ECC), required for the construction of the onshore cable route.
Joint bays	A joint bay provides a secure environment for the assembly of cable joints as well as bonding and earthing leads. A joint bay is installed between each length of cable.
Landfall	The location at the land-sea interface where the offshore export cable will come ashore.
Maximum Design Scenario	The maximum design parameters of the combined project assets that result in the greatest potential for change in relation to each impact assessed
Mitigation	Mitigation measures, or commitments, are commitments made by the Project to reduce and/or eliminate the potential for significant effects to arise as a result of the Project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.
National Grid's OnSS	Onshore substation which is owned and operated by National Grid.

Term	Definition
National Policy Statement (NPS)	A document setting out national policy against which proposals for Nationally Significant Infrastructure Projects (NSIPs) will be assessed and decided upon .
Non-statutory consultee	Organisations that the Applicant may be required to (under Section 42 of the 2008 Act) or may otherwise choose to engage during the pre-application phases (if, for example, there are planning policy reasons to do so) who are not designated in law but are likely to have an interest in a proposed development.
Outer Dowsing Offshore Wind (ODOW)	The Project
Onshore Export Cable Corridor (ECC)	The Onshore Export Cable Corridor (Onshore ECC) is the area within which the export cable running from the landfall to the onshore substation will be situated.
Offshore Substation (OSS)	Platforms located within the array area which house electrical equipment and control and instrumentation systems. They also provide access facilities for work boats and helicopters.
Onshore Infrastructure	The combined name for all onshore infrastructure associated with the Project from landfall to grid connection.
Preliminary Environmental Information Report (PEIR)	The PEIR is written in the style of a draft Environmental Statement (ES) and provides information to support and inform the statutory consultation process in the pre-application phase. Following that consultation, the PEIR documentation will be updated to produce the Project's ES that will accompany the application for the Development Consent Order (DCO).
PEIR Boundary	The PEIR Boundary is outlined in Figure 3.1 of Volume 1, Chapter 3: Project Description and comprises the extent of the land and/or seabed for which the PEIR assessments are based upon.
Project Design Envelope	A description of the range of possible elements that make up the Project's design options under consideration, as set out in detail in the project description. This envelope is used to define the Project for Environmental Impact Assessment (EIA) purposes when the exact engineering parameters are not yet known. This is also often referred to as the "Rochdale Envelope" approach.
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of receptors include species (or groups) of animals or plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.
Statutory consultee	Organisations that are required to be consulted by the Applicant, the Local Planning Authorities and/or The Inspectorate during the pre-application and/or examination phases, and who also have a statutory responsibility in some form that may be relevant to the Project and the DCO application. This includes those bodies and interests prescribed under Section 42 of the Planning Act 2008.
study area	Area(s) within which environmental impact may occur – to be defined on a receptor-by-receptor basis by the relevant technical specialist.
The Applicant	GT R4 Ltd. The Applicant making the application for a DCO. The Applicant is GT R4 Limited (a joint venture between Corio Generation, TotalEnergies and Gulf Energy Development (GULF)), trading as Outer Dowsing Offshore Wind. The project is being developed by Corio Generation (a wholly owned Green Investment Group portfolio company), TotalEnergies and GULF.

Term	Definition
The Planning Inspectorate	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
The Project	Outer Dowsing Offshore Wind including proposed onshore and offshore infrastructure.
Transboundary impacts	Transboundary effects arise when impacts from the development within one European Economic Area (EEA) state affects the environment of another EEA state(s)
Trenchless technique	Trenchless technology is an underground construction method of installing, repairing and renewing underground pipes, ducts and cables using techniques which minimize or eliminate the need for excavation. Trenchless technologies involve methods of new pipe installation with minimum surface and environmental disruptions. These techniques may include Horizontal Directional Drilling (HDD), thrust boring, auger boring, and pipe ramming, which allow ducts to be installed under an obstruction without breaking open the ground and digging a trench.
Trenched technique	Trenching is a construction excavation technique that involves digging a narrow trench in the ground for the installation, maintenance, or inspection of pipelines, conduits, or cables.
Wind turbine generator (WTG)	All the components of a wind turbine, including the tower, nacelle, and rotor.

28 Landscape and Visual Impact Assessment

28.1 Introduction

- 28.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the results to date of the Environmental Impact Assessment (EIA) process for the potential impacts of Outer Dowsing Offshore Wind (“the Project”) on landscape and visual receptors. Specifically, this chapter considers the potential impact of the onshore elements of the Project during the construction, operation and maintenance, and decommissioning phases.
- 28.1.2 GT R4 Ltd (trading as Outer Dowsing Offshore Wind) hereafter referred to as the 'Applicant', is proposing to develop the Project. The Project will be located approximately 54km from the Lincolnshire coastline in the southern North Sea. The Project will include both offshore and onshore infrastructure including an offshore generating station (windfarm), export cables to landfall, onshore cables, and connection to the electricity transmission network, and ancillary and associated development (see Volume 1, Chapter 3: Project Description for full details).
- 28.1.3 The key onshore elements of the Project include the Onshore Substation (OnSS), the Onshore Export Cable Corridor (onshore ECC) and the landfall. The Landscape and Visual Impact Assessment (LVIA) assesses the potential effect of the Project on the physical landscape, landscape character and visual amenity, as well as the cumulative effects with other relevant existing and proposed developments.
- 28.1.4 The LVIA has been undertaken by Chartered Landscape Architects at Optimised Environments (OPEN), in accordance with the LVIAs Assessment Methodology set out in section 28.6.
- 28.1.5 This chapter should be read alongside the following chapters:
- Volume 1, Chapter 3: Project Description;
 - Volume 1, Chapter 4: Site Selection and Consideration of Alternatives;
 - Volume 1, Chapter 5: Environmental Impact Assessment Methodology;
 - Volume 1, Chapter 17: Seascape, Landscape and Visual;
 - Volume 1, Chapter 20: Onshore Archaeology and Cultural Heritage;
 - Volume 1, Chapter 21: Onshore Ecology; and
 - Volume 1, Chapter 22: Onshore Ornithology.
- 28.1.6 This LVIA is supported by plan graphics within this chapter and visual representations within Volume 2, Appendix 28.1: Landscape and Visual Assessment Visualisations. LVIA figures include Zone of Theoretical Visibility (ZTV) maps, reference photography, outline landscape mitigation, and visual representations, including baseline panorama views, wirelines, and photomontages.

28.2 Statutory and Policy Context

28.2.1 This section includes a summary of national and local policy of particular relevance to the assessment of landscape and visual effects, that have been considered in this chapter.

28.2.2 The relevant legislation and planning policy for offshore renewable energy Nationally Significant Infrastructure Projects (NSIPs), specifically in relation to landscape and visual assessment, is outlined in Table 28.1 below:

Table 28.1: Legislation and policy context

Legislation /policy	Key provisions	Section where legislation or policy is addressed
Overarching National Policy Statement for Energy (NPS EN-1) (DECC, 2011a)	Paragraph 4.2.5 advises that when considering cumulative effects, the ES should provide information on how the effects of the Applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence).	Cumulative landscape and visual effects of the onshore infrastructure considered in section 28.11.1.
NPS EN-1	Paragraph 4.2.7 advises that <i>'In some instances it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in its application which elements of the proposal have yet to be finalised, and the reasons why this is the case.'</i> At paragraph 4.2.8 it is stated that, where this is the case, there is the need to ensure that the likely worst case environmental effects are set out and assessed.	Volume 1, Chapter 3: Project Description, sets out the details of the project and which areas are and are not settled in precise detail. Section 28.5 sets out the maximum design parameters that have been defined to ensure that the worst case landscape and visual effects are assessed.
NPS EN-1	In relation to the topic of 'Criteria for Good Design for Energy Infrastructure' Paragraph 4.5.1 advises that <i>'The visual appearance of a building 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. Applying "good design" to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as</i>	Volume 1, Chapter 3: Project Description, sets out how the Project responds to these criteria.

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	<p><i>far as possible. It is acknowledged, however that the nature of much energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area.'</i></p>	
NPS EN-1	<p>In relation to Good Design, paragraph 4.5.3 advises that <i>'the IPC should satisfy itself that the applicant has taken into account both functionality (including fitness for purpose and sustainability) and aesthetics (including its contribution to the quality of the area in which it would be located) as far as possible'</i></p>	<p>Volume 1, Chapter 3: Project Description, sets out how the Project has considered and balanced these criteria. Section 28.5 of this chapter sets out the embedded mitigation that is included for the Project and Section 28.9 assesses visual impacts.</p>
NPS EN-1	<p>In relation to Good Design, paragraph 4.5.4 sets out that the applicants should be able to demonstrate how the design process was conducted, and how the design evolved and design decisions were made. This is in order for the Secretary of State (SoS) to consider the application. In doing so the SoS <i>'should take into account the ultimate purpose of the infrastructure and bear in mind the operational, safety and security requirements which the design has to satisfy'</i>.</p>	<p>The evolution of the design is set out Volume 1, Chapter 4: Site Selection and Consideration of Alternatives and Volume 1, Chapter 3: Project Description. How the design has evolved in relation to landscape impacts is included in Section 28.5 of this Chapter. The duration of LVIA effects is explained in section 28.6</p>
NPS EN-1	<p>Paragraph 5.9.1 notes that landscape and visual effects will be varied and that <i>'references to landscape should be taken as covering seascape and townscape where appropriate.'</i></p>	<p>The varied nature of landscape and visual receptors is explained in section 28.4</p>
NPS EN-1	<p>Paragraph 5.9.5 advises that the applicant should carry out a landscape and visual assessment and makes reference to the following documents: Landscape Institute and Institute of Environmental Management and Assessment (2002, 2nd edition): Guidelines for Landscape and Visual Impact Assessment; and Land Use Consultants (2002): Landscape Character Assessment – Guidance for England and Scotland.</p>	<p>Since NPS EN-1 was published the Guidelines for Landscape and Visual Impact Assessment' (GLVIA) (2002, 2nd edition) has been superseded by GLVIA version 3. Reference is made to the updated GLVIA the version 3 and Landscape Character Assessment – Guidance for England and Scotland in section 28.4, along with more recent reference documents, relevant to LVIA.</p>

Legislation /policy	Key provisions	Section where legislation or policy is addressed
NPS EN-1	Paragraph 5.9.5 advises that the landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development plans in Lincolnshire.	Published landscape character assessments and associated studies for the study area are referred to in section 28.4 of this chapter.
NPS EN-1	Paragraph 5.9.6 of EN-1 advises – ‘The applicant's assessment should include the effects during construction of the project and the effects of the completed development and its operation on landscape components and landscape character.’	The effect on landscape components and landscape character are assessed in the LVIA in sections 28.7 and 28.8.
NPS EN-1	Paragraph 5.9.7 advises that the assessment should include the visibility and conspicuousness of the project during its construction and operation and potential impacts on views and visual amenity.	The visual effects resulting from the onshore elements of the Project during construction and operation are assessed in the LVIA in section 28.9.
NPS EN-1	Paragraph 5.9.8 advises that landscape effects depend on the existing character of the local landscape, its current quality, how highly it is valued and its capacity to accommodate change. All of these factors need to be considered in judging the impact of a project on landscape.	The quality, value and capacity of the landscape to accommodate change are considerations of the landscape assessment set out in section 28.8 where they inform the assessment of effects of the onshore infrastructure on the landscape.
NPS EN-1	Paragraph 5.9.8 advises that <i>‘virtually all nationally significant energy infrastructure projects will have effects on the landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.’</i>	The design of the Project has considered and addressed the potential effects on landscape in order to minimise potentially significant effects through mitigation. See section 28.5 of this chapter.
NPS EN-1	Paragraph 5.9.14 of EN-1 advises – <i>‘Outside nationally designated areas, there are local landscapes that may be highly valued locally and protected by local designation. Where a local</i>	None of the components of the Project lie within a nationally designated area such as a National Park or Area of

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	<i>development document in England or a local development plan in Wales has policies based on landscape character assessment, these should be paid particular attention. However, local landscape designations should not be used in themselves to refuse consent, as this may unduly restrict acceptable development.'</i>	Outstanding National Beauty (AONB). Lincolnshire Node OnSS lies outwith the Lincolnshire Wolds AONB. The value of the local landscape is a consideration within the LVIA, as set out in sections 28.7 and 28.8.
NPS EN-1	Paragraph 5.9.17 advises that <i>'The IPC [now the Planning Inspectorate and the Secretary of State] should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape, including by reasonable mitigation.'</i>	Volume 1, Chapter 4: Site Selection and Consideration of Alternatives sets out the iterative process that has influenced the design of the Project. The mitigation of landscape effects set out in Section 28.5 has been considered in the LVIA, to minimise <i>"harm to the landscape"</i> where possible. Detailed design of landscape mitigation will be undertaken in the LEDPP as part of the DCO application.
NPS EN-1	Paragraph 5.9.18 relates to visual effects and in addition to those included in the current NPS EN-1 notes that <i>'Coastal areas are particularly vulnerable to visual intrusion because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast.'</i>	The visual effects resulting from the onshore elements of the Project during construction and operation are assessed in the LVIA in section 28.9.
NPS EN-1	Paragraph 5.9.21 advises that <i>'reducing the scale of a project can help to mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design of a proposed energy infrastructure project may result in a significant operational constraint and reduction in function – for example, the electricity generation output. There may, however, be exceptional circumstances, where mitigation could have a the very significant benefit and warrant a small reduction in function. In these circumstances, the IPC may decide that the benefits of the mitigation</i>	The balance between mitigation of visual and landscape effects and significant operational constraints / reduction in function is considered in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives.

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	<i>to reduce the landscape and/or visual effects outweigh the marginal loss of function.'</i>	
NPS EN-1	Paragraph 5.9.22 of EN-1 advises – <i>'Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within that site, design including colours and materials, and landscaping schemes, depending on the size and type of the proposed project. Materials and designs of buildings should always be given careful consideration.'</i>	As described in Volume 1, Chapter 3: Project Description, the refinement of the OnSS and onshore ECC has been carefully considered alongside the potential for landscape and visual effects and mitigation. See also section 28.5.
Draft Overarching National Policy Statement for Energy (NPS EN-1 (draft)) (DESNZ, 2023a)	Paragraph 4.2.11 advises that <i>'In some instances it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in its application which elements of the proposal have yet to be finalised, and the reasons why this is the case.'</i> At paragraph 4.2.12 it is stated that, where this is the case, the need to ensure that the likely worst case environmental effects are assessed.	Volume 1, Chapter 3: Project Description sets out the details of the project and which areas are and are not settled in precise detail. Section 28.5 sets out the maximum design parameters that have been defined to ensure that the worst case landscape and visual effects are assessed. Detailed design of landscape mitigation will be undertaken in the LEDPP as part of the DCO Application.
NPS EN-1 (draft)	In relation to the topic of <i>'Criteria for Good Design for Energy Infrastructure'</i> , Paragraph 4.6.1 advises that <i>'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.'</i> Paragraph 4.6.2 advises that <i>'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</i>	Volume 1, Chapter 3: Project Description, sets out how the Project responds to this criterion. The LEDPP sets out high level design principles for landscape mitigation and more detail will be provided in the LEDPP that will form part of the DCO Application.

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	<i>energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area.'</i>	
NPS EN-1 (draft)	At paragraph 4.6.5 the concept of design champions is introduced in the following statement; <i>'To ensure good design is embedded within the project development, a project board level design champion could be appointed, and a representative design panel used to maximise the value provided by the infrastructure. Design principles should be established from the outset of the project to guide the development from conception to operation.'</i>	The Applicant considers that there would be merit in appointing a senior member of the Project team as design champion early in the process – ensuring that design options are explored, advice taken and decisions made to achieve a well considered and good design.
NPS EN-1 (draft)	In relation to Good Design paragraph 4.6.6 advises that <i>'Whilst the applicant may not have any or very limited choice in the physical appearance of some energy infrastructure, there may be opportunities for the applicant to demonstrate good design in terms of siting relative to existing landscape character, land form and vegetation. Furthermore, the design and sensitive use of materials in any associated development such as electricity substations will assist in ensuring that such development contributes to the quality of the area. Applicants should also, so far as is possible, seek to embed opportunities for nature inclusive design within the design process.'</i>	Volume 1, Chapter 3: Project Description, sets out how the Project has considered and balanced these criteria. Section 28.5 of this chapter sets out the embedded mitigation that is included for the Project and provision for biodiversity and ecological networks is outlined in the LEDPP.
NPS EN-1 (draft)	Paragraph 4.6.7 sets out that the applicants must demonstrate how the design process was conducted and how the design evolved and design decisions were made. This is in order for the Secretary of State (SoS) to consider the application. In doing so the SoS, as stated at Paragraph 4.6.12 <i>'should take into account the ultimate purpose of the infrastructure and bear in mind the operational, safety and security requirements which the design has to satisfy. Many of the wider impacts of a development, such as landscape and environmental impacts, will be important factors in the design process.'</i> At Paragraph 4.6.13, it is also noted that <i>'Assessment of impacts must be for the stated</i>	The evolution of the design is set out Volume 1, Chapter 4: Site Selection and Consideration of Alternatives, and Volume 1, Chapter 3: Project Description. How the design has evolved in relation to landscape impacts is included in Section 28.5 of this Chapter. The duration of LVIA effects is explained in section 28.6.

Legislation /policy		Key provisions	Section where legislation or policy is addressed
		<i>design life of the scheme rather than a shorter time period.'</i>	
NPS (draft)	EN-1	Paragraph 5.10.1 notes that landscape and visual effects will be varied and that <i>'references to landscape should be taken as covering seascape and townscape where appropriate.'</i>	The varied nature of landscape and visual receptors is explained in section 28.5.
NPS (draft)	EN-1	Paragraph 5.10.6 advises that <i>'Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints, the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.'</i>	Volume 1, Chapter 4: Site Selection and Consideration of Alternatives sets out the iterative process that has influenced the design of the Project. The mitigation of landscape effects set out in section 28.5 has been considered in the LVIA, to minimise "harm to the landscape" where possible.
NPS (draft)	EN-1	Paragraph 5.10.11 of EN-1 advises – <i>'Outside nationally designated areas, there are local landscapes that may be highly valued locally. Where a local development document in England or a local development plan in Wales has policies based on landscape or waterscape character assessment, these should be paid particular attention. However, locally valued landscapes should not be used in themselves to refuse consent, as this may unduly restrict acceptable development.'</i>	The value of the local landscape is a consideration within the LVIA, as set out in sections 28.8 and 28.9.
NPS (draft)	EN-1	Paragraph 5.10.14 states <i>'Coastal areas are particularly vulnerable to visual intrusion because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast.'</i>	The visual effects resulting from the onshore elements of the Project during construction and operation are assessed in the LVIA in section 28.9.
NPS (draft)	EN-1	Paragraph 5.10.15 sets out the need to carry out a landscape and visual impact assessment, including a cumulative assessment in accordance with published guides. Relevant guides are listed as The Landscape Institute and Institute of Environmental Management and Assessment: Guidelines for Landscape and Visual Impact Assessment (2013, 3 rd edition); Landscape and Seascape Character Assessments –	Reference documents and guidance, relevant to the LVIA, are set out in section 28.5

Legislation /policy		Key provisions	Section where legislation or policy is addressed
		https://www.gov.uk/guidance/landscape-and-seascape-character-assessments .	
NPS (draft)	EN-1	Paragraph 5.10.16 goes on to say that <i>‘The landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project. The applicant’s assessment should also take account of any relevant policies based on these assessments in local development documents in England and local development plans in Wales.’</i>	Published landscape character assessments and associated studies for the study area are referred to in section 28.8 of this chapter.
NPS (draft)	EN-1	Paragraph 5.10.18 states that <i>‘The applicant should consider landscape and visual matters in the early stages of siting and design, where site choices and design principles are being established. This will allow the applicant to demonstrate in the ES how both negative effects have been minimised and opportunities for creating positive benefits or enhancement have been recognised.’</i>	The balance between mitigation of visual and landscape effects and significant operational constraint/ reduction in function is considered in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives.
NPS (draft)	EN-1	Paragraph 5.10.19 advises <i>‘The assessment should include the effects on landscape components and character during construction and operation’</i> while paragraph 5.10.20 advises <i>‘The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity.’</i> T	The landscape and visual effects resulting from the onshore elements of the Project during construction and operation are assessed in section 28.8 and section 28.9 respectively.
NPS (draft)	EN-1	At paragraph 5.10.21 the document also states that <i>‘The assessment should also demonstrate how noise and light pollution and other emissions from construction and operational activities on residential amenity and on sensitive locations, receptors and views, will be minimised.’</i>	The mitigation of landscape and visual effects through good design are considered within the LVIA at section 28.9.
NPS (draft)	EN-1	Paragraph 5.10.23 introduces the potential for landscape management plans to be considered as they may help to enhance environmental assets.	The Landscape and Ecology Design Principles Plan (LEDPP) describes measures to be employed during construction and restoration. It also provides longer term outline landscape and habitat management of the OnSS.

Legislation /policy	Key provisions	Section where legislation or policy is addressed
NPS EN-1 (draft)	Paragraph 5.10.25 advises that <i>‘Reducing the scale of a project can help to mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design of a proposed energy infrastructure project may result in a significant operational constraint and reduction in function for example, the electricity generation output. There may, however, be exceptional circumstances, where mitigation could have a significant benefit and warrant a small reduction in function. In these circumstances, the Secretary of State may decide that the benefits of the mitigation to reduce the landscape and/or visual effects outweigh the marginal loss of function’.</i>	The balance between mitigation of visual and landscape effects and significant operational constraint/ reduction in function is considered in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives.
NPS EN-1 (draft)	Paragraph 5.10.26 advises – <i>‘Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within that site, design including colours and materials, and landscaping schemes, depending on the size and type of the proposed project. Materials and designs of buildings should always be given careful consideration.’</i>	As described in Volume 1, Chapter 3: Project Description, the refinement of the OnSS and onshore ECC has been carefully considered alongside the potential for landscape and visual effects and mitigation, as set out in section 28.5.
National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (DECC, 2011b)	Paragraph 2.4.2 of NPS EN3 advises – <i>‘Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology.’</i>	The mitigation of landscape and visual effects through good design are considered within the LVIA, as set out in section 28.5.
NPS EN-3	Paragraph 2.6.204 of NPS EN3 advises – <i>‘As part of the SVIA, photomontages are likely to be required. Viewpoints to be used for the SVIA should be selected in consultation with the statutory consultees at the EIA Scoping stage.’</i> Note: SVIA is an acronym of ‘Seascape and Visual Impact Assessment’ within NPS EN-3.	Viewpoints were shared with statutory consultees as part of the Expert Topic Group (ETG) meeting.
NPS EN-3	Paragraphs 2.6.42 and 2.6.43 relate to the need for flexibility in the project details owing to the complex nature of offshore windfarm development. It is recognised that this may include the location and configuration of	Section 28.5 sets out the maximum design parameters that have been defined to ensure that the worst case

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	turbines and associated development (including offshore substations), the exact turbine dimensions and the precise cable type and route. In accordance with Section 4.2 of EN-1 and recognising there may be a need for flexibility in the consent it is stated that <i>'Where this is sought and the precise details are not known, then the applicant should assess the effects the project could have (as set out in EN-1 paragraph 4.2.8) to ensure that the project as it may be constructed has been properly assessed (the Rochdale Envelope). In this way the maximum adverse case scenario will be assessed, and the IPC should allow for this uncertainty in its consideration of the application and consent.'</i>	landscape and visual effects are assessed.
Draft National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (DESNZ, 2023b)	Paragraph 3.5.2 advises – <i>'Proposals for renewable energy infrastructure should demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-existence / co-location with other marine uses, and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage.'</i>	The mitigation of landscape and visual effects through good design are considered within the LVIA, as set out in section 28.5.
NPS EN-3 (draft)	With reference to guidance on the use of Rochdale Envelopes, paragraph 3.8.87 highlights the complex nature of offshore windfarm development. It is recognised that the details of a proposed scheme, including the location and configuration of turbines and associated development, the exact turbine dimensions, the precise cable type and route and the exact locations of the offshore and onshore substations, may not be known at the time of the application to the SoS.	Section 28.5 sets out the maximum design parameters that have been defined to ensure that the worst case landscape and visual effects are assessed.
NPS EN-3 (draft)	Paragraph 3.8.226 advises – <i>'As part of the SLVIA, photomontages will be required. Viewpoints to be used for the SLVIA should be selected in consultation with the statutory consultees at the EIA Scoping stage.'</i>	Viewpoints were agreed in consultation with statutory consultees as described in Table 28.2.
National Policy	Paragraph 2.8.2 of NPS EN5 advises – <i>'New substations, sealing end compounds and other</i>	The proposed onshore ECC is to be underground. The LVIA

Legislation /policy	Key provisions	Section where legislation or policy is addressed
Statement for Electricity Networks Infrastructure (NPS EN-5) (DECC, 2011c)	<i>above ground installations that form connection, switching and voltage transformation points on the electricity networks can also give rise to landscape and visual impacts. Cumulative landscape and visual impacts can arise where new overhead lines are required along with other related developments such as substations, windfarms and/or other new sources of power generation’.</i>	has assessed the effects of the underground onshore ECC and OnSS in sections 28.7, 28.8 and 28.9.
NPS EN-5	Paragraph 2.8.3 recognises that ‘ <i>Sometimes positive landscape and visual benefits can arise through the reconfiguration or rationalisation of existing electricity network infrastructure’</i>	The proposed onshore ECC is to be underground. The LVIA has assessed the effects of the underground onshore ECC and OnSS in sections 28.7, 28.8 and 28.9.
Draft National Policy Statement for Electricity Networks Infrastructure (NPS EN-5 (draft)) (2023c)	Paragraph 2.9.9 of Draft NPS EN-5 advises – ‘New substations, sealing end compounds (including terminal towers), and other above-ground installations that serve as connection, switching, and voltage transformation points on the electricity network may also give rise to adverse landscape and visual impacts.’	The proposed onshore ECC is to be underground. The LVIA has assessed the effects of the underground onshore ECC and OnSS in sections 28.7, 28.8 and 28.9.
NPS EN-5 (draft)	Paragraph 2.9.10 of Draft NPS EN-5 advises – ‘ <i>Cumulative adverse landscape and visual impacts may arise where new overhead lines are required along with other related developments such as substations, windfarms, and/or other new sources of generation.’</i>	Cumulative landscape and visual effects of the onshore infrastructure are considered in section 28.11.
NPS EN-5 (draft)	Paragraph 2.9.11 of Draft NPS EN-5 advises – ‘ <i>Landscape and visual benefits may arise through the reconfiguration, rationalisation, or undergrounding of existing electricity network infrastructure. Though mitigation of the landscape and visual impacts arising from overhead lines and their associated infrastructure is usually possible, it may not always be so, and the impossibility of full mitigation in these cases does not countermand the need for overhead lines.</i> Paragraph 2.9.12 of Draft NPS EN-5 advises – ‘ <i>However, in nationally designated landscapes (for instance, National</i>	The proposed onshore ECC is to be underground. The LVIA has assessed the effects of the underground onshore ECC and OnSS in sections 28.7, 28.8 and 28.9. Section 28.5 of this chapter sets out the embedded mitigation that is included for the Project and section 28.9 assesses visual impacts.

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	<i>Parks, The Broads and Areas of Outstanding Natural Beauty) even residual impacts may well make an overhead line proposal unacceptable in planning terms.'</i>	
NPS EN-5 (draft)	Paragraph 2.9.18 states <i>'The Horlock Rules – guidelines for the design and siting of substations – were established by National Grid in 2009 in pursuance of its duties under Schedule 9 to the Electricity Act 1989. These principles should be embodied in applicants' proposals for the infrastructure associated with new overhead lines.'</i>	The Horlock Rules are considered in PEIR Appendix 3.3 Onshore Substation Design Principles (document 6.2.3.3).
National Planning Policy Framework (NPPF) (2021)	Paragraph 174 of NPPF advises: <i>'Planning policies and decisions should contribute to and enhance the natural and local environment by:</i> <i>a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);</i> <i>b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;</i> <i>c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;</i> <i>d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;'</i>	The mitigation of landscape and visual effects through good design are considered within the LVIA, as set out at section 28.5. Provision for biodiversity and ecological networks is outlined in the LEDPP.
NPPF (2021)	Paragraph 175 of NPPF advises <i>'Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital</i>	The LVIA includes consideration of effects on landscape character including landscape designations. Effects on landscape character and landscape designations are assessed in section 28.8 of this chapter.

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	<i>at a catchment or landscape scale across local authority boundaries.'</i>	
NPPF (2021)	Paragraph 176 of NPPF advises <i>'Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks. Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.'</i>	The LVIA includes consideration of effects on landscape character including landscape designations. Effects on landscape character and landscape designations are assessed in section 28.8 of this chapter.

28.3 Consultation

28.3.1 Consultation is a key part of the Development Consent Order (DCO) application process. Consultation regarding the LVIA has been conducted through the Evidence Plan Process (EPP), Expert Technical Group (ETG) meetings and the EIA scoping process (ODOW, 2022). An overview of the Project consultation process is presented within Volume 1, Chapter 6: Consultation Process.

28.3.2 A summary of the key issues raised during consultation to date, specific to the LVIA, is outlined in Table 28.2 below, together with how these issues have been considered in the production of this PEIR.

Table 28.2: Summary of consultation relating to LVIA

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
9 th September 2022 Scoping Opinion The Planning Inspectorate	Effect of export cable landfall – O&M The Scoping Report currently provides limited information on the nature of the landfall, both in terms of its location and the structures that could be in place following construction, together with the sensitive receptors that could be affected by the landfall works, and the nature of any restoration and planting works. The ES should include sufficient information on restoration measures and timescales to allow understanding of any change in appearance of land resulting from the Proposed Development. The ES should assess any likely significant effects of the export cable	The potential effects of the landfall are assessed in section 28.7. Information on land restoration is contained in the LEDPP and more detail will be provided in the Landscape and Ecology Design Principles Plan (LEDPP) that will form part of the ES.

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	landfall and also demonstrate how consultation with the relevant consultation bodies and stakeholders has been taken into account.	
9 th September 2022 Scoping Opinion The Planning Inspectorate	Effects of onshore ECC – O&M The Inspectorate agrees that in general the introduction of the ECC is unlikely to give rise to significant long-term effects on landscape character and visual resources during operation of the Proposed Development. However, it is unclear whether any easement required would result in permanent landscape changes and the potential for such effects should be considered. The ES should assess the potential for significant short-term effects during the beginning of the operational phase, as proposed reinstatement measures mature along the export cable route.	The potential for longer term effects associated with the onshore ECC extending into the operational phase are assessed in section 28.7.
9 th September 2022 Scoping Opinion The Planning Inspectorate	Transboundary landscape and visual effects The Inspectorate agrees that onshore landscape and visual effects are likely to be localised and that transboundary onshore landscape and visual effects can be scoped out of the assessment.	Noted and scoping out of transboundary effects referenced at section 28.13.
9 th September 2022 Scoping Opinion The Planning Inspectorate	Study Area The ES should clearly define the study areas that have been used to inform the assessment and give reasons for their selection. This should include reference to a figure showing the extent of the study areas.	The LVIA study area is shown on Figure 28.1, Figure 28.2, Figure 28.3 and Figure 28.4 and the reasons for its extents are explained in section 28.5.
9 th September 2022 Scoping Opinion The Planning Inspectorate	Heritage Coast The ES should assess impacts to this receptor, where significant effects are likely to occur. The ES should ensure appropriate cross references and coordination between aspect chapters, including Archaeology and Cultural Heritage, for the assessment of effects on the Heritage Coast.	The potential effects on the Heritage Coast are assessed at section 28.8. Cross references to other chapters, including Archaeology and Cultural Heritage, are presented in section 28.12.
9 th September 2022 Scoping Opinion The Planning Inspectorate	Assessment Methodology The Scoping Report states that the proposed EIA methodology for the LVIA will be based on the method outlined in Section 5 of the Scoping Report but will also comply with the Guidelines for Landscape and Visual Impact Assessment Version 3 (Landscape Institute, 2013). The ES should explain the methodology used and, where it combines the approach from two different methodologies, any differences or limitations with the adopted approach should be made clear.	Section 28.6 sets out the Assessment Methodology applied in this chapter and highlights the differences and limitations of this methodology.
9 th September 2022	RPGs open to the public The Scoping Report is not clear what ‘open to the public’ will include for the purposes of the assessment and this	Registered Parks and Gardens (RPGs) are considered in this assessment where access is

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
Scoping Opinion The Planning Inspectorate	should be explained in the ES. For example, whether this includes RPGs where there is public access through PRow or permissive access, as well as those sites where wider public access by the landowner is permitted.	permitted by the landowner and where PRow or permissive access ensures public access into the RPG. RPGs are assessed in section 28.8.
9 th September 2022 Scoping Opinion The Planning Inspectorate	Evaluation of significant effects The ES should explain what aspect-specific criteria are used to define receptor value/sensitivity and magnitude of change for the landscape and visual impact assessment.	Section 28.6 Assessment Methodology sets out the criteria.
9 th September 2022 Scoping Opinion The Planning Inspectorate	Mitigation planting The ES should also demonstrate that where advanced planting is identified to mitigate significant landscape and visual effects, that its implementation is such that it will be mature enough to provide the necessary mitigation screening.	The photomontages presented in Volume 2, Appendix 28.1 show an estimate of plant growth after 15 years in order to demonstrate the potential mitigation effect.
30 th August 2022 Scoping Opinion Natural England	Nationally Designated Landscapes Consideration should be given to any potential direct or indirect impacts to designated landscapes. Please note: as there is only an area of search for the cable corridor at this stage, we are unable to provide definitive advice on specific designated landscapes at this time. However, we note that the settings of the Lincolnshire Wolds Area of Outstanding Natural Beauty may require further consideration once the final cable corridor is confirmed.	The potential effects of the onshore ECC and OnSS on the Lincolnshire Wolds AONB is considered in section 28.8.
30 th August 2022 Scoping Opinion Natural England	Landscape/Seascape and visual impacts Natural England would wish to see details of local landscape character areas mapped at a scale appropriate to the development site, as well as any relevant management plans or strategies pertaining to the area. The EIA should include assessments of visual effects on the surrounding area and landscape together with any physical effects of the development, such as changes in topography.	Local Landscape Character Areas covered by the Lincolnshire Node OnSS study area are shown on Figure 28.12 and in conjunction with the ZTV on Figure 28.14. In the absence of Local Landscape Character Areas, National Landscape Character Areas covered by the Weston Marsh North and South OnSS study areas are shown on Figure 28.13 and in conjunction with the ZTV on Figure 28.15 and Figure 28.16. The LEDPPs for the three indicative OnSS locations are shown on Figure 28.29, Figure 28.30 Figure 28.31. The LVIA considers

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
		physical effects on landscape as well as perceptual changes on landscape character and visual amenity in sections 28.7, 28.8 and 28.9.
30 th August 2022 Scoping Opinion Natural England	The EIA should include a full assessment of the potential impacts of the development on local landscape character using landscape/seascape assessment methodologies. We encourage the use of Landscape and Seascape Character Assessment (LCA/SCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA/SCA provides a sound basis for guiding, informing, and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character, as detailed proposals are developed.	The LVIA presents a full assessment of the effects of the Project on local landscape character following the methodology set out in GLVIA3 in section 28.8.
30 th August 2022 Scoping Opinion Natural England	Natural England supports the publication Guidelines for Landscape and Visual Impact Assessment, produced by the Landscape Institute and the Institute of Environmental Assessment and Management in 2013 (3rd edition). The methodology set out is almost universally used for landscape and visual impact assessment. For National Parks and Areas of Outstanding Natural Beauty (AONBs), we advise that the assessment also includes effects on the 'special qualities' of the designated landscape, as set out in the statutory management plan for the area. These identify the particular landscape and related characteristics which underpin the natural beauty of the area and its designation status.	The methodology applied in the LVIA follows GLVIA3 as described in section 28.6. The effects of the Lincolnshire Node OnSS on the 'special qualities' of the Lincolnshire Wolds AONB are assessed at.
30 th August 2022 Scoping Opinion Natural England	In order to foster high quality development that respects, maintains, or enhances, local landscape / seascape character and distinctiveness, Natural England encourages all new development to consider the character and distinctiveness of the area, with the siting and design of the proposed development reflecting local design characteristics and, wherever possible, using local materials. The Environmental Impact Assessment process should detail the measures to be taken to ensure the building design will be of a high standard, as well as detail of layout alternatives together with justification of the selected option in terms of landscape impact and benefit.	Local Landscape Character has been taken into account in developing the three search areas for the location of the OnSS and the selection and refinement of the final location will also be informed by this consideration along with other environmental and technical considerations which are taken into account. Volume 1, Chapter 4: Site Selection and Alternatives sets out the approach to siting and design, and landscape and ecological design principles

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
		are set out in the LEDPP (document 8.7). Building design will be considered as part of the DCO Application, design principles have been set out in PEIR Appendix 3.3 Onshore Substation Design Principles (document 6.2.3.3).
30th August 2022 Scoping Opinion Natural England	The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping stage would be likely to be a material consideration at the time of determination of the planning application.	The cumulative effects of the Project in conjunction with other relevant existing and proposed developments are considered in section 28.11. This assessment includes relevant scoping stage developments.
30th August 2022 Scoping Opinion Natural England	The assessment should refer to the relevant National Character Areas which can be found on our website. Links for Landscape / Seascape Character Assessment at a local level are also available on the same page. https://www.gov.uk/government/publications/seascape-assessments-for-north-east-northwest-south-east-south-west-marine-plan-areas-mmo1134 https://data.gov.uk/dataset/3fed3362-2279-4645-8aaf-c6b431c94485/mmo1037-marinecharacter-areas	Section 28.8 sets out the effects of the Project on landscape character with reference to the Natural England's National Character Areas.
Environmental Topic Group Meeting English Heritage	Historic England queried if a separate piece of work would be undertaken on heritage asset impacts.	Volume 1: Chapter 20 Onshore Archaeology and Cultural Heritage presents a detailed assessment of effects on heritage assets.

28.3.3 As identified in Volume 1, Chapter 4: Site Selection and Alternatives and Volume 1, Chapter 3: Project Description, the Project design envelope has been refined following scoping and will be refined further prior to the DCO Application. This process is reliant on stakeholder consultation feedback.

28.3.4 Design amendments to the landfall, onshore ECC and OnSS are of relevance to this chapter.

28.4 Baseline Environment

Study Area

- 28.4.1 The initial step in the LVIA is the establishment of the study area for the assessment. The onshore LVIA study area for the onshore elements of the Project extend to define a limit beyond which professional judgement considers it would be unlikely for significant effects to arise. This judgement is based on knowledge of similar projects, an understanding of the character of the local landscape, as well as an understanding of the scale of the construction and development of the onshore components of the Project. The LVIA study area covers the landfall, onshore ECC and the three search areas for the OnSS.
- 28.4.2 Those parts of the LVIA study area that cover the landfall and ECC options, extend to a 1km buffer around the search areas for these components. The onshore ECC will comprise a 60m corridor with a working width of 80m. Figure 28.1, Figure 28.2, Figure 28.3, and Figure 28.4 show an indicative 300m wide search area within which the 60m wide permanent corridor of the onshore ECC will be located. The onshore ECC will widen where the landfall and trenchless crossings occur, and the search area and associated buffer which makes up the study area is, therefore, wider in those areas. There are two options for the routing of the central section of the onshore ECC between Wainfleet All Saints in the north and Butterwick in the south, with one route parallel and offset to the north-west of the A52 and the other route parallel and offset to the south-east of the A52.
- 28.4.3 Those parts of the LVIA study area that cover the three options for the OnSS, extend to a 5km buffer around the indicative location for each of the three sites. Together, the 1km buffer around the landfall and onshore ECC and the 5km buffer around the indicative locations for the OnSS, form the onshore LVIA study area for the onshore elements of the Project.
- 28.4.4 The extent of the LVIA study area relevant to each onshore component has been agreed with the statutory consultees through the Expert Topic Group Meeting as documented in Table 28.2.
- 28.4.5 The onshore LVIA study area covers the landfall down to Mean Low Water Springs (MLWS), with the area seaward covered by the offshore SLVIA study area as set out in Volume 1, Chapter 17: Seascape, Landscape and Visual.
- 28.4.6 The onshore LVIA study area is not intended to provide a boundary beyond which the onshore elements of the Project would not be seen, but rather to define the area within which there is potential for significant landscape or visual effects. In addition, a significant effect is very unlikely to occur towards the edges of the onshore LVIA study area.

Data Sources

- 28.4.7 The key data sources used to inform the baseline for the LVIA are presented in Table 28.3 below.

Table 28.3: Data Sources for LVIA

Data Source	Summary	Spatial Coverage of Data
Ordnance Survey (OS)	OS 1:50,000, 1:25,000 Terrain 50 and Terrain 5 DTM data	UK National mapping coverage.

Data Source	Summary	Spatial Coverage of Data
Ordnance Survey (OS) Open Data	National landscape planning designations. Settlements, roads, railways, PRoWs and National Trails.	UK National OS data able to provide designations, settlements, roads, railways, PRoWs and National Trails.
Natural England	National Landscape Character Area Profiles https://nationalcharacterareas.co.uk/	England
English Heritage	Registered Parks and Gardens https://historicengland.org.uk/listing/what-is-designation/registered-parks-and-gardens/	England
Lincolnshire County Council	Rights of Way https://www.lincolnshire.gov.uk/coast-countryside/public-rights-way/3 Central Lincolnshire Plan Adopted April 2023 (pages 142 and 148) chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.n-kesteven.gov.uk/sites/default/files/2023-04/Local%20Plan%20for%20adoption%20Approved%20by%20Committee.pdf	Lincolnshire
East Lindsey District Council	East Lindsey District Landscape Character Assessment, Volumes One and Two, LCA and Landscape Guidelines (November 2011, Land Use Consultants);	District level coverage of landscape character assessments in East Lindsey District.
The Lincolnshire Wolds Countryside Service and Lincolnshire Wolds Joint Advisory Committee (AONB Partnership)	Lincolnshire Wolds AONB Management Plan 2018-2023	Lincolnshire Wolds AONB

Existing Environment

- 28.4.8 This section identifies landscape and visual receptors that have potential to be significantly affected by the onshore elements of the Project. It provides a description of the existing landscape and visual receptors in the area that may be affected, and this is referred to as the landscape and visual baseline.
- 28.4.9 When reviewed alongside the description of the onshore elements of the Project provided in Volume 1, Chapter 3: Project Description, the established baseline will form the basis for the identification and description of landscape and visual effects.

- 28.4.10 The identification of those landscape and visual receptors that may be affected by the Project is primarily determined by their location relative to the onshore elements of the Project. In respect of the OnSS, the ZTV assists in the identification of landscape and visual receptors with potential to be significantly affected (Figure 28.5, Figure 28.6, Figure 28.7, Figure 28.8, Figure 28.9 and Figure 28.10).
- 28.4.11 The baseline also describes current pressures that may cause change in the landscape in the future, and which need to be considered cumulatively with the Project, in particular drawing on information for other developments that are not yet present in the landscape but are at other stages in the planning process.
- 28.4.12 A preliminary assessment has identified those landscape and visual receptors that may have the potential to experience significant effects, which require to be assessed in full (see section 28.8 and 28.9). This section provides a baseline overview, and a detailed baseline description is provided separately within the assessment section for each receptor that has potential to be significantly affected.
- 28.4.13 This LVIA assesses the effects of one search area in respect of the landfall, and two search areas in respect of the onshore ECC, with one connecting the landfall to the proposed Lincolnshire Node OnSS in the north of the LVIA study area and one connecting the landfall to the proposed Weston Marsh OnSS in the south. There are three search areas in respect of the OnSS, one at the Lincolnshire Node in the north and two at Weston Marsh in the south. For the purposes of this assessment, indicative locations for the OnSS have been identified in each of the three search areas and these have been used to generate the ZTVs. These indicative locations are used in the visualisations and form the basis of the assessment.

Landscape Baseline Overview

- 28.4.14 All onshore components of the Project are located in the Lincolnshire County Council area. The landfall search area, Lincolnshire Node search area and associated onshore ECC are located in the East Lindsey District Council area. The Weston Marsh North and South search areas are located in the South Holland District Council area, with the onshore ECC passing through the East Lindsey District Council, Boston Borough Council and South Holland District Council areas.
- 28.4.15 The eastern part of Lincolnshire, within which the LVIA study area occurs, is characterised by the flat coastal plains of the reclaimed marshes in the north and the fens in the south. Coastal towns and resorts occur in the northern part of the LVIA study area, where there are beaches and dune landscapes. Inland from the coastline, the landscape of the study area is largely characterised by agricultural lowland landscapes, with fields of arable and improved pasture and some enclosure from hedgerows and localised tree cover. Large parts of this farmed landscape have been reclaimed from marshland, which is evident in the flatness of the landscape and extent of drainage ditches and channelised river courses. Whilst the landscape of the study area is rural in nature, there is also an influence from larger inland settlements, such as Boston and Spalding and key transport routes including the A16, A52 and connecting rail lines.

Landscape Character

28.4.16 The English landscape is classified at the national level by National Character Areas (NCAs). The 48 NCAs are defined at a broad landscape scale, each with descriptive character profiles. The proposed onshore elements of the Project and the LVIA study area lie within the following NCAs as shown on Figure 28.11.

- 42 - Lincolnshire Coast and Marshes NCA; and
- 46 - The Fens NCA.

28.4.17 On the Natural England website (2022) the Lincolnshire Coast and Marshes NCA is described as follows;

“This area is characterised by a wide coastal plain which extends from Barton-upon-Humber in the north, across to Grimsby at the mouth of the Humber and south to Skegness. The area is bounded by the North Sea along its eastern edge and by the Lincolnshire Wolds to the west. The wide coastal plain incorporates three distinctively different but closely interconnected areas which run broadly parallel with the edge of the Wolds. To the west is the Middle Marsh which comprises a softly undulating arable landscape with a greater number of woodlands and hedgerows than other areas. To the east lies the Outmarsh, an open landscape of arable land, mixed with rich pasture divided by narrow dykes. The Outmarsh has changed in character – and was once as grassy as Romney Marsh or the Somerset Levels. It has gradually turned into an area which is predominately arable, particularly since effective pump drainage was introduced in the 2nd half of the 20th century, following the 1953 floods.”

28.4.18 On the Natural England website (2022) The Fens NLCA is described as follows;

“The Fens National Character Area (NCA) is a distinctive, historic and human-influenced wetland landscape lying to the west of the Wash estuary, which formerly constituted the largest wetland area in England. The area is notable for its large-scale, flat, open landscape with extensive vistas to level horizons. It is a large, low-lying, flat landscape with many drainage ditches, dykes and rivers that slowly drain towards the Wash, England’s largest tidal estuary. The single obvious factor uniting the Fens is the low-lying, level terrain reflecting its geological past. With the exception of the Isle of Ely, which reaches above 20 m, elevations rarely pass the 10m contour, and typically vary by little more than one or two metres over long distances. Much of the land is below sea level, relying on pumped drainage and the control of sluices at high and low tides to maintain its agricultural viability. Four major rivers drain into the Wash: the Witham, Welland, Nene and Great Ouse. All rivers now have artificial canalised courses that run straight for long distances and are bounded by high banks to contain the watercourse from the lower adjacent fields.”

28.4.19 A district level landscape character assessment has been carried out by East Lindsey District Council, providing a more detailed level assessment across the northern half of the LVIA study area. This shows that the Lincolnshire Node OnSS falls close to the boundary between the following two Landscape Character Areas (LCA) which are shown on Figure 28.12.

- 77 - Holton le Clay to Great Steeping Middle Marsh LCA; and

- 83 - Tetney Lock to Skegness Coastal Outmarsh.

28.4.20 The ZTV in conjunction with Landscape Character is presented on Figure 28.14 and shows the extent to which the indicative Lincolnshire OnSS location would be visible across these LCAs, with the effects assessed in detail in section 28.8.

28.4.21 There is no district level character assessment for the southern part of the LVIA study area and, therefore, The Fens NCA is used as the basis of the assessment for the Weston Marsh North and Weston Marsh South OnSS search areas, as shown on Figure 28.13. The ZTVs in conjunction with Landscape Character are presented on Figure 28.15 and Figure 28.16, showing the extent to which the indicative Lincolnshire OnSS location would be visible across the NCA, with the effects assessed in detail in section 28.8.

Landscape Designations

28.4.22 A landscape designation is an area of landscape identified as being of importance at international, national or local level, either defined by statute or identified in development plans or other documents. The landscapes are designated in relation to their special qualities or features which warrant special consideration through the planning system.

28.4.23 There are three ways in which such designations are relevant to the LVIA:

- The presence of a designation can provide an indication of a recognised value that may increase the sensitivity of a landscape character receptor, viewpoint or visual receptor, and may therefore affect the significance of the effect on that receptor;
- The presence of a relevant designation can lead to the selection of a representative viewpoint within the designated area, as the viewpoint will provide a representative outlook from that area; and
- Designated areas may be included as landscape character receptors so that the effects of the proposed onshore elements of the Project on the landscapes that have been accorded particular value can be specifically assessed.

28.4.24 In relation to the proposed onshore elements of the Project, landscape designations within the LVIA study area include:

- Lincolnshire Wolds Area of Outstanding Natural Beauty (AONB).
- Well Hall Registered Park and Garden (RPG).

28.4.25 Landscape Designations are mapped on Figure 28.17 and with the OnSS ZTVs for Lincolnshire Node, Weston Marsh North and Weston Marsh South on Figure 28.18, Figure 28.19 and Figure 28.20 respectively. Despite the limited extent of visibility shown within the AONB, there is the potential that significant effects may arise owing to the sensitivity of the designation and, therefore, a detailed assessment is presented in section 28.8. Registered Parks and Gardens are assessed in Volume 1: Chapter 20: Onshore Archaeology and Cultural Heritage.

Visual Baseline Overview

- 28.4.26 Principal Visual Receptors within the LVIA study area are typical of the East Lindsey, Boston and South Holland coast and their rural and agricultural hinterland. Principal visual receptors found within the LVIA study areas include roads, railways, individual properties, settlements and recreational routes. Principal visual receptors and representative viewpoints are mapped on Figure 28.21 and in conjunction with the ZTVs for Lincolnshire Node, Weston Marsh North and Weston Marsh South in Figure 28.22, Figure 28.23 and Figure 28.24.
- 28.4.27 Settlements are varied in size within this eastern part of Lincolnshire, with the larger settlements of Skegness set on the coast in the northern part of the LVIA study area and Boston set inland in the southern part. Medium sized settlements include Chapel St Leonards on the coast to the north of Skegness and the historic town of Alford set inland to the west. A network of small towns, villages and hamlets extend across much of the rural landscape and while these are generally formed around a historic core in the northern part, they are typically more modern in the southern part, denoting the different period during which these landscapes have been reclaimed.
- 28.4.28 There is a hierarchical network of roads across the LVIA study area with the A16 and A52 forming the main inland and coastal routes between the northern and southern part of the LVIA study area, and other 'A' and 'B' class roads connecting up the main settlements in the more populated northern and southern parts. A fine network of minor roads then provides access to the expanse of rural farmsteads and properties which are a characterising feature of these settled and farmed landscape. There is also a network of railway lines that connect Spalding, Boston and Skegness. Transport routes in this landscape are typically straight owing to the flatness of the landscape and the absence of landscape features with the exception of the channelised rivers which often require transport routes to deviate towards bridging points.
- 28.4.29 Recreational walking and cycling routes are found within the LVIA study area. A section of the England Coast Path follows the eastern coastline between Mablethorpe in the north and Skegness in the south and there are also a number of walking routes along the embankments of the channelised rivers in the southern part of the LVIA study area, most notably the McMillan Way along the River Welland which passes between the Weston Marsh North and Weston Marsh South OnSS search areas. Public Rights of Way (PRoWs) provide access across the rural landscape surrounding the Lincolnshire Node OnSS search area and the Weston Marsh OnSS search areas. Other PRoWs that cross the wider landscape will only experience temporary disruption resulting from the construction of the onshore ECC.

Onshore ECC

- 28.4.30 As the cables are proposed to be buried there will be little or no visual effects resulting from the onshore ECC once operational. In addition, the relatively small scale of the onshore ECC construction works, their location in a predominantly intensively farmed landscape, and the limited occurrence of surrounding settlements and roads, means that only the views of close-range receptors will be affected during the construction phase.

OnSS

- 28.4.31 The built infrastructure proposed for the OnSS will have a much greater extent of visibility than the onshore ECC and, therefore, visual receptors over a wider area will potentially be affected. Visual effects will also likely occur during operation, as well as construction and decommissioning.
- 28.4.32 The viewpoints identified for assessment of the OnSS have been selected to cover a variety of landscape character areas; roads; recreational routes; points from different directions and distances; and to inform the definition of the likely extent of significant visual effects from the identified principal visual receptors. Four or five viewpoints for the landscape and visual assessment were selected for each of the three indicative OnSS locations, with these locations shared with statutory consultees during ETGs in advance of production of this PEIR.
- 28.4.33 Representative viewpoints proposed for the visual assessment of the OnSS are identified in Table 28.4 below and mapped on Figure 28.22, Figure 28.23 and Figure 28.24. The precise viewpoint locations have been finalised based on site survey and potential visibility of the OnSS. Visualisations for the OnSS are provided on Volume 2, Appendix 28.1, Figures 28.32 to 28.46.

Table 28.4: Representative Viewpoints for the indicative OnSS locations

Receptor	Grid Reference		Representative
Lincolnshire Node OnSS			
LN1 Asserby Road	549042E	377693N	Rural residents / Road-users
LN2 Mill Lane	550351E	377919N	Walkers / Rural residents
LN3 Alford Road	550532E	376522N	Road-users / Rural residents
LN4 Bilsby	547532E	377083N	Rural residents / Road-users
Weston Marsh North OnSS			
WMN1 Marsh Lane Manor House	529577E	331949N	Rural residents / Road-users
WMN2 A16 near Marsh Lane junction	528195E	332380N	Road-users / Rural residents
WMN3 A16 near Gosberton Bank junction	527466E	330780N	Road-users / Rural residents
WMN4 Macmillan Way near Ship Inn	528743E	330263N	Walkers / Road-users / Rural residents
WMN5 Macmillan Way near Welland House	529500E	330799N	Walkers / Road-users / Rural residents
Weston Marsh South OnSS			
WMS1 Marsh Road near Crowtree Farm	528973E	329127N	Road-users / Rural residents
WMS2 Marsh Road near Kindergarten Nursery	528104E 327664N	327664N	Road-users / Rural residents
WMS3 B1357 near Loosegate	531721E	325982N	Road-users / Rural residents
WMS4 Carrington Road south	531045E	327306N	Road-users / Rural residents
WMS5 Common Road north	532449E	329670N	Road-users / Rural residents

Cumulative Baseline

- 28.4.34 Existing developments are included in the baseline for the assessment of landscape and visual effects in sections 28.8 and 28.9. These developments have an existing influence on baseline landscape character and visual amenity. There are no existing large-scale developments with an influence on the Lincolnshire Node OnSS search areas. In respect of the Weston Marsh North and South OnSS search areas, overhead electricity transmission lines cross close to these search areas and overhead line towers are a common feature.
- 28.4.35 Adjacent developments may complement one another, or may be discordant with one another, and it is the increased or reduced level of significance of effects which arises as a result of this change that is assessed. Where this occurs, the magnitude of change varies according to cumulative effect factors such as its consistency of image and degree of contrast or integration with the onshore elements of the Project, as well as other 'non-cumulative' factors, such as distance, lateral spread and amount of visibility.

Cumulative sites for consideration in the LVIA

- 28.4.36 Cumulative effects refer to effects upon receptors arising from the onshore elements of the Project, when considered alongside other proposed developments and activities and any other reasonably foreseeable project(s) proposals.
- 28.4.37 GLVIA3 (Landscape Institute and IEMA, 2013, p120) defines cumulative landscape and visual effects as those that *“result from additional changes to the landscape and visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.”*
- 28.4.38 Other proposed developments that have the potential for cumulative effects in combination with the onshore elements of the Project are considered to be those developments that are found within the LVIA study areas. Beyond the LVIA study areas cumulative effects are limited by distance and lack of intervisibility with other proposed developments.
- 28.4.39 NatureScot is an executive non-departmental public body of the Scottish Government responsible for the country's natural heritage. In the absence of UK wide guidance on the assessment of cumulative landscape and visual effects, NatureScot's guidance is commonly referred to in UK based EIA. In respect of the proportionality of the CLVIA NatureScot guidance (NatureScot 2021, p8) states that *“The assessment should be proportionate to the likely impacts and all CLVIA should accord with the guidelines within GLVIA3. The emphasis should be on the production of relevant and useful information, highlighting why the proposals assessed have been included and why others have been excluded, rather than the provision of a large volume of information.”*
- 28.4.40 A comprehensive list of projects that have the potential to contribute to cumulative impacts of the onshore elements of the Project has been compiled and this 'long list' and the approach to compiling this list is described in Volume 1, Chapter 5: EIA Methodology. Those cumulative projects listed within the 'long list' and that lie within the LVIA study areas are listed below in Table 28.5 and shown on Figure 28.25.

Table 28.5: Cumulative Developments relevant to the LVIA

Development	Description	Location
West End, Hogsthorpe Residential Development	Outline application for the erection of up to 89 dwellings and associated works	70m SSW of onshore ECC PEIR Boundary on W of Hogsthorpe
Watery Lane, Butterwick Residential Development	Approval of reserved matters for the erection of 42 dwellings	230m N of onshore ECC PEIR Boundary on S of Butterwick
Church End Lane, Fishtoft Residential Development	Application for the erection of 20 affordable dwellings and associated works	800m NW of onshore ECC PEIR Boundary
Church End Lane, Fishtoft Residential Development	Outline application for the erection of 46 residential dwellings and associated works	850m NW of onshore ECC PEIR Boundary
Marsh Road, Fosdyke Residential Development	Outline application for the erection of 9 self-build dwellings and 2 alms houses	160m SW of onshore ECC PEIR Boundary
Land off Buttock Gate, Fosdyke. Residential Development	Outline application for the erection of 6 dwellings	80m SW of onshore ECC PEIR Boundary

Future Baseline

- 28.4.41 The baseline character of the landscapes associated with the LVIA study area could evolve in the future as a result of land use policy, environmental improvements and development pressures. This has the potential to alter the baseline assessment of the landscape and visual resource over time relating to the onshore elements of the Project.
- 28.4.42 The most likely evolution of the baseline that is predicted to occur over the time between the point of assessment and the time over which the Project will be built and become operational is through the introduction of future developments. Future developments are considered in the assessment of cumulative effects, see section 28.11.

28.5 Basis of Assessment

Scope of the Assessment

- 28.5.1 The scope of the assessment in respect of the potential LVIA impacts and receptors to be scoped in has been informed by a combination of consultation comments (section 28.3), an understanding of the existing environment (section 28.4), an understanding of the project description (section 28.5) and an understanding of the assessment methodology (section 28.6). Where it has been necessary to identify which landscape and visual receptors have potential to be significantly affected or not, 'Preliminary Assessments' have been included (sections 28.8 and 28.9).
- 28.5.2 Volume 1, Chapter 17: Seascape, Landscape and Visual assesses the impacts of the offshore components of the Project on onshore landscape and visual receptors.
- 28.5.3 The following impacts have been scoped into this assessment:
- Construction

- The physical effects on the agricultural land, hedgerows and trees resulting from the excavation works associated with the landfall, onshore ECC and OnSS;
- The effects on landscape character and visual amenity resulting from the presence of the emerging OnSS, temporary construction compounds, access roads, plant, materials, spoil heaps and vehicles, associated with the construction of the landfall, onshore ECC and OnSS;
- The effects on landscape character and visual amenity resulting from the excavation, Trenchless drilling and land restoration associated with the landfall and onshore ECC and, the earthworks and construction works associated with the emerging OnSS; and
- The effects on visual amenity arising from the use of lighting associated with the construction of the OnSS during the hours of darkness.
- Operation and maintenance
 - The effects on landscape character and visual amenity resulting from the presence of the OnSS and associate infrastructure; and
 - The effects on landscape character and visual amenity resulting from the emergence of mitigation and replacement planting.
- Decommissioning
 - The physical effects and effects on landscape character and visual amenity resulting from the removal of electrical equipment from within the onshore project substation buildings and the removal of the main onshore project substation building and minor services equipment;
 - The physical effects and effects on landscape character and visual amenity as a result of the restoration of the site of the OnSS; and
 - The effects on visual amenity arising from the use of lighting associated with the decommissioning of the OnSS during the hours of darkness.

28.5.4 The scope of the assessment in respect of the potential LVIA impacts and receptors to be scoped out has been informed by the same considerations as set out above.

- Operation and maintenance:
 - The physical effects and landscape and visual effects resulting from the operational phase of the landfall and onshore ECC;
 - The landscape and visual effects of the OnSS beyond the 5km radius of the OnSS study area;
 - The visual effects associated with OnSS lighting; and
 - Transboundary effects.

Realistic Worst Case Scenario

- 28.5.5 The following section identifies the Maximum Design Scenario (MDS) in environmental terms, defined by the Project design envelope. The indicative locations for the three OnSS search areas are shown on Figure 28.26, Figure 28.27 and Figure 28.28 and the search area for the landfall and onshore ECC (with its alternative routes for the central section) are shown on Figure 28.1, Figure 28.2, Figure 28.3 and Figure 28.4.
- 28.5.6 The MDS in respect of the LVIA is presented in Table 28.6 below. The key features of this MDS is the consideration of the Gas Insulated Switchgear (GIS) OnSS over the Air Insulated Switchgear (AIS) OnSS, owing to maximum height of the GIS OnSS at 19m being larger than the maximum height of the AIS at 15m being notably smaller. Also, the use of converter sheds to house the larger infrastructure will have a greater presence in the landscape and greater influence on landscape character and visual amenity.

Table 28.6: Maximum design scenario for LVIA for the Project alone

Potential effect	Maximum design scenario assessed	Justification
Construction		
Landfall Landscape and Visual Effects	Landfall logistics compound of 90,000m ² . Up to 6 Trenchless drilling Entry Pits with a total area of 200m ² located either intertidal or below LAT. Trenchless drilling maximum length 1,500m seaward of MHWS. Up to 6 Trenchless drilling Exit Pits with a total working area of 2,500m ² . Six Transition Joint Bays (TJBs).	The MDS includes the maximum dimensions and number of construction compounds and therefore, the greatest area of land disturbance and visible construction activity.
Onshore ECC Landscape and Visual Effects	The onshore ECC represents a corridor with an 80m working width and 60m permanent corridor, albeit that the corridor widens at landfall and at the OnSS. It is approximately 80km in length for Weston Marsh and 11km for Lincolnshire Node and consists of 4 trenches, each 5m wide and of variable depth along with haul road and stockpiling areas associated with cable construction.	The MDS includes the maximum width and, therefore, the greatest area of disturbance and visible construction activity. The assessment considers the 80m working width of the cable route in relation to hedgerow and tree losses to ensure the worst case is being considered.
Onshore ECC Construction Compounds Landscape and Visual Effects	Primary (300 x 150m) and Secondary (80 x 60m) temporary logistic compounds (TLCs) will be required along the route – 18 Primary and 54 Secondary, see Volume 1, Chapter 3: Project Description for further detail. Where trenchless works are required, trenchless works compounds will be required at each end of the works, with maximum dimensions of 150 x 30m. The total number of trenchless works and associated compounds will be defined in the ES.	The MDS includes the maximum dimensions and number of construction compounds and therefore, the greatest area of land disturbance and visible construction activity.
OnSS Construction activities	1 x OnSS temporary construction compound with an area of 270,000m ² .	The MDS includes the maximum area and number of construction compounds and therefore, the greatest area of land

Potential effect	Maximum design scenario assessed	Justification
Landscape and Visual Effects	Lincolnshire Node OnSS access route from B1449 (Long Lane), Weston Marsh North OnSS access route from A16 and Weston Marsh South OnSS access route from A17 which will become the permanent access routes to the OnSS.	disturbance and visible construction activity.
OnSS Landscape and Visual Effects	GIS OnSS with a footprint of 347m x 209m (72,600m ²) footprint and maximum height of 19m. AIS OnSS with a footprint of 285m x 325m (92,700m ²) and maximum height of 15m.	The MDS is based on the GIS OnSS option as the construction of large enclosed buildings represents the greatest visible construction activity.
Construction Period	12 hour working day (7am-7pm Monday to Saturday) 36 months for onshore ECC 36 months for OnSS	Construction lighting will be required during working hours in the winter months, the lights of construction vehicles will also add to the levels of lighting and a lower level of lighting will remain overnight for security purposes.
Operation and Maintenance		
Onshore ECC and Landfall Landscape and Visual Effects	Joints bays will be required approximately every 450m to 2,000m resulting in a maximum of 700 joint bays (including those at TJBs) each with indicative dimensions of 9 x 23m (207m ²) and 2.5m deep. Joint bays will include a manhole at ground level for access.	The MDS includes the maximum amount of visible above ground onshore ECC infrastructure.
OnSS Landscape and visual effects	Maximum area of GIS OnSS is 347m x 209m (72,600m ²).	The final location of the buildings and infrastructure of the OnSS is not known at this stage, however, it will be located within one of the following search areas; Lincolnshire Node OnSS, Weston Marsh North, or Weston Marsh South. The Rochdale Envelope for the OnSS is based on the GIS option that includes for greater height of buildings, despite the slightly smaller footprint. A 3D block model for the GIS option has been included in the visualisations for Viewpoints 1 to 5 for each of the three indicative locations (Volume 2, Appendix 28.1, Figures 28.32 to 28.46).
OnSS Landscape and visual effects	The largest structure within the OnSS will be the OnSS building, with a maximum height of 19m above existing ground level (assuming a GIS design). All other equipment (e.g. transformers, switchgear) will not exceed a height of 19m above ground level. The exception to this will be lightning masts which due to their slender design are not included in the overall consideration of maximum infrastructure height in the LVIA.	The maximum parameter model of 19m is considered to represent the worst case parameter in line with the Rochdale Envelope Approach.

Potential effect	Maximum design scenario assessed	Justification
Decommissioning		
Onshore ECC and Landfall Landscape and Visual Effects	Cable ducts and cables likely left in situ underground.	Effects would relate principally to the decommissioning process, associated plant, materials, infrastructure and temporary structures, as well as the presence of dismantled structures, where they would be visible above ground.
OnSS Landscape and Visual Effects	Removal of the OnSS.	Effects would relate principally to the decommissioning process, associated plant, and materials to remove the OnSS.
Cumulative		
Cumulative Landscape and visual effects	The LVIA considers the potential for significant cumulative effects to arise as a result of the addition of the Project in the context of other large-scale developments that are consented or at application or scoping stage, that are located or proposed within the onshore LVIA study area.	Cumulative landscape and visual effects are not considered to arise as a result of other development outwith the LVIA study area.

Embedded Mitigation

28.5.7 Mitigation measures that were identified and adopted as part of the evolution of the project design (embedded into the project design) and that are relevant to LVIA are set out in the following sections. The mitigation includes embedded measures such as design changes and applied mitigation which is subject to further study or approval of details; these include avoidance measures that will be informed by pre-construction surveys, and necessary additional consents where relevant. The composite of embedded and applied mitigation measures apply to all parts of the Project development works, including pre-construction, construction, O&M and decommissioning.

Primary Embedded Mitigation

28.5.8 Primary Embedded mitigation in respect of the onshore elements of the Project has involved the sensitive siting and design of the areas of search for the onshore infrastructure during site selection, to ensure the potential impacts are avoided or reduced.

- 28.5.9 The site selection process considered constraints relating to physical landscape elements (such as woodlands, trees and hedgerows), landscape character and visual amenity, together with other environmental and technical constraints, including surface water flooding. The sensitivity of the surrounding landscape and of residents, road-users, workers and recreational users of the landscape was also a key consideration. The capacity of the landscape to accommodate the onshore elements of the Project is assessed in relation to the natural screening afforded by landform, woodlands and trees and the degree to which other surrounding infrastructure and buildings influence visual screening. As screening is limited, especially in respect of the Weston Marsh North and South search areas, the approach has been to locate the search areas as far detached as possible from nearby settlements primarily but also roads.
- 28.5.10 The close proximity of existing electricity overhead lines to the Weston Marsh North and South search areas provides a context of electrical infrastructure within and immediately surrounding the search areas. There is also an influence from the Spalding Energy Facility, located to the south of the Weston Marsh North and South search areas. This context was considered in site selection and aligning with it is also considered to be embedded mitigation.
- 28.5.11 Mitigation measures that were identified and adopted as part of the evolution of the project design (embedded into the project design) and that are relevant to the LVIA are presented below.

Construction Phase Mitigation

- 28.5.12 Mitigation opportunities during the construction phase of works will be limited and primarily relate to the restrictions imposed on the working areas and measures identified in the CoCP.
- 28.5.13 The outline LEDPP sets out the principles and key landscape and ecology elements for the onshore elements of the Project. The outline LEDPP and outline CoCP seek to stipulate measures to avoid, reduce or offset environmental effects of the construction works, including those related to landscape and visual amenity. Both documents will be updated and expanded following detailed design and as part of the evolving EIA process.
- 28.5.14 Sensitive siting of construction compound areas away from more visible and larger numbers of receptors, will also be important to reduce the impact on the immediate views. It should be noted that the two options for the onshore ECC and three options for the OnSS provide for an extended iterative design process during the period between PEIR and EIA. These options will be refined in line with the approach already taken in site selection in order to reduce the potential effects on the landscape and visual resource of the area.

Operational Mitigation

- 28.5.15 Outline planting mitigation principles have been developed for the three indicative OnSS locations and are set out in the LEDPP. These mitigation principles include areas of proposed woodland, areas identified for ecological mitigation and an area identified for SuDS. The extent of the indicative proposed woodland planting is presented on Figure 28.29, Figure 28.30 and Figure 28.31 and is also shown at the predicted height after 15 years' establishment on the LVIA visualisations in Volume 2, Appendix 28.1, Figures 28.32 to 28.46.

- 28.5.16 The proposed woodland mostly comprises indigenous woodland species and will be located around the three indicative OnSS locations. The mitigation woodland planting will be designed to comprise a mix of faster growing 'nurse' species and slower growing 'core' species. Nurse species, such as alder, birch, and black poplar will grow quicker so that after 15 years they will be approximately 7 to 10m in height. They will provide shelter to bring on core species, such as oak, elm and sycamore. Whilst the nurse species will be sufficiently fast growing to provide partial screening of the OnSS after 15 years, the core species will outlive the nurse species and provide a preferred native woodland with a more robust structure closer in character to other nearby woodlands associated with the Lincolnshire landscape.
- 28.5.17 In locations where it is possible to undertake planting that will not interfere with construction works and where practical to do so, mitigation woodland could be planted during the early phases of the OnSS construction to ensure robust screening as quickly as possible. If implemented at the start of the construction phase, this woodland planting will give these areas additional growth prior to completion of construction and commencement of operation of the OnSS.
- 28.5.18 Depending on the final design and size of the OnSS, earthworks used to create the OnSS platform may result in surplus soil and excavation material. If available, this could potentially be used in the creation of landscape bunding in areas of proposed woodland within the sites. This will further limit views of the OnSS and provide further landscape and visual mitigation.

Cable Route and Landfall Mitigation

- 28.5.19 As the search area for the onshore ECC presented in the PEIR, sets out a 300m wide search area that will be refined down to a 60m permanent corridor, the assessment is based on the potential effects that could occur in this area. Between PEIR and EIA the onshore ECC will be refined, such that the working width and permanent corridor will be defined. A landscape mitigation strategy for the onshore ECC will be developed to help refine the options and ensure the best environmental fit within the landscape. The landscape and visual strategy is as follows:
- Achievement of the best environmental fit of the preferred 60m cable route where practicable, particularly in relation to reducing hedgerow and tree loss along the cable route;
 - Reinstatement of removed sections of hedgerows, or suitable replacement hedgerows provided for displaced or severed sections of hedgerows where practical;
 - Sensitively siting construction compounds and Trenchless drilling compounds such that these are carefully selected taking into account landscape and visual receptors to reduce impacts during the construction period where practicable;
 - Restoration of all temporary works and construction areas in relation to re-establishment of ground cover;
 - Protection of all retained trees during the construction phase where practicable; and
 - Footpaths or cycleways that are temporarily disrupted by the proposed onshore ECC or landfall will be temporarily diverted and then reinstated as part of the mitigation strategy.

28.5.20 Following construction of the landfall and installation of the onshore ECC, disturbed landcover and habitats will be reinstated. The overall aim of the reinstatement will be the re-establishment of existing ground cover or returning the disturbed ground to its original agricultural use. Where possible, excavated soils will be carefully stored and reinstated as soon as possible.

28.6 Assessment Methodology

Introduction

Types of Effect

28.6.1 The LVIA predicts, describes and assesses the likely significant effects that the Project will have on the landscape and visual resource, and covers the following types of effect which may arise during construction, decommissioning or operation of the onshore elements of the Project.

Landscape Effects

28.6.2 Landscape effects potentially arise from the introduction of new onshore elements which may be visible and may therefore affect the perceived character of the landscape. This may also include effects on designated landscapes.

28.6.3 GLVIA 3, paragraph 5.4, advises that Landscape Character Assessment should be regarded as the main source for baseline studies and identifies the following factors which combine to create areas of distinct landscape character:

- *"the elements that make up the landscape in the study area including:*
 - *physical influences - geology, soils, landform, drainage and water bodies;*
 - *landcover, including different types of the vegetation and patterns and types of tree cover; and*
 - *the influence of human activity, including landuse and management, the character of settlements and buildings, and pattern and type of fields and enclosure.*
- *The aesthetic and perceptual aspects of the landscape - such as, for example, its scale, complexity, openness, tranquillity or wildness;*
- *The overall character of the landscape in the study area, including any distinctive Landscape Character Types or Areas that can be identified, and the particular combinations of elements and aesthetic and perceptual aspects that make each distinctive, usually by identification as key characteristics of the landscape."*

Visual Effects

28.6.4 Visual effects potentially arise from the introduction of onshore elements in views and the resultant effects on visual amenity experienced by people from representative viewpoints and principal visual receptors, for example groups of people, such as within settlements, using transport routes or recreational trails.

Cumulative Effects

28.6.5 In addition to the above, cumulative effects may arise where the study areas for two or more projects overlap so that they are experienced at a proximity where they may have a greater incremental effect, or where projects may combine to have a sequential effect. The LVIA assesses the cumulative effects that would arise through the development of the Project.

Field Survey

28.6.6 Field survey work was undertaken during periods of clear visibility in October and November 2022 and carried out throughout the LVIA study area from publicly accessible locations.

28.6.7 For the OnSS, the focus is on the areas shown on the ZTVs on Figure 28.5, Figure 28.6, Figure 28.7, Figure 28.8, Figure 28.9 and Figure 28.10 to have theoretical visibility. For the proposed onshore ECC and landfall, the focus of the field survey is on those elements of the landscape that will be physically affected, although visibility of these elements is also considered in the 1km onshore ECC study area as part of the wider field survey analysis. The field survey allows the assessors to judge the likely scale, distance, extent and prominence of the onshore elements of the Project directly.

28.6.8 The landscape of the area surrounding the proposed onshore elements of the Project has been assessed for any particular features that contribute to landscape character or that are important to the wider landscape setting. The field surveys provided an experience of the character areas of the onshore LVIA study areas and the verification of how these areas might be affected by the onshore elements of the Project.

28.6.9 The visual amenity of the onshore LVIA study area was surveyed from receptors representative of the range of views and viewer types likely to experience the onshore elements of the Project. Views from a variety of distances, aspects, elevations and extents are included.

Guidance

Guidance relevant to the LVIA is set out in the following documents:

- Landscape Institute and IEMA (2013) - Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3);
- Natural England (2014). An Approach to Landscape Character Assessment;
- Planning Inspectorate (2018) Advice Note Nine: Rochdale Envelope;
- Planning Inspectorate (2019). Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects - the Version 2;
- NatureScot (2021). Assessing the Cumulative Impact of Onshore Wind Energy Developments;
- Landscape Institute (2019). Visual Representation of Development Proposals; and
- NatureScot (2017) - Visual Representation of Windfarms, Guidance (Version 2.2) (herein referred to as 'NatureScot Visual Representation').

28.6.10 Although some of this guidance is from publications by bodies located in other UK nations it is commonly drawn on for work carried out in England where no equivalent guidance exists. The preparation of visual representations that accord with the NatureScot Visual Representation guidance has been agreed with stakeholders as part of the LVIA Expert Topic Group (ETG) consultations.

Approach to Assessment

28.6.11 The LVIA is undertaken using the following steps:

- The features of the onshore elements of the Project that may result in landscape and visual effects are described;
- The overall scope of the assessment is defined, including the study area and range of possible landscape and visual effects;
- The landscape baseline is established using landscape character assessment and the ZTV maps, to identify landscape receptors that may be affected and their key characteristics and value;
- The visual baseline is established by identifying the extent of possible visibility, identifying the people who may be affected, identifying visual receptors and selecting viewpoints;
- A preliminary assessment is undertaken of landscape and visual receptors using ZTV analysis, to identify which landscape and visual receptors are unlikely to be significantly affected and those that are more likely to be significantly affected, which require to be assessed in more detail;
- Interactions are identified between the proposed onshore elements of the Project and landscape and visual receptors, to predict potentially significant effects arising and measures are proposed to mitigate effects;
- An assessment of the susceptibility of landscape and visual receptors to specific change and the value attached to landscape receptors and views is undertaken, combining these judgements to assess the sensitivity of the landscape and visual receptor to the proposed onshore elements of the Project;
- An assessment of the size/ scale of landscape effect, the degree to which landscape elements are altered and the extent to which the effects change the key characteristics of the landscape is undertaken, combining these judgements to assess the magnitude of change on the landscape receptor;
- An assessment of the size/ scale of visual effect, the extent to which the change will affect views, whether this is unique or representative of a wider area, and the position of the proposed onshore elements of the Project in relation to the principal orientation of the view and activity of the receptor. These judgements are combined to assess the magnitude of change on the visual receptor; and
- The assessments of sensitivity to change and magnitude of change are combined to assess the significance of landscape and visual effects.

- 28.6.12 GLVIA3 sets out an approach to the assessment of magnitude of change in which three separate considerations are combined within the magnitude of change rating. These are the size or scale of the effect, its geographical extent and its duration and reversibility. Notably GLVIA3 is not a prescriptive methodology but guidance. The guidance suggests that this approach is to be applied in respect of both landscape and visual receptors. It is considered that the process of combining all three considerations in one rating can distort the aim of identifying likely significant effects of development. For example, a high magnitude of change, based on size or scale, may be reduced to a lower rating if it occurred in a localised geographical area and for a short duration. This might mean that a potentially significant effect will be overlooked if effects are diluted down due to their limited geographical extents and/ or duration or reversibility.
- 28.6.13 As advocated by GLVIA3 the assessment has used professional judgement in defining the methodology for the LVIA. The consideration of the size or scale of the effect, its geographical extent and its duration and reversibility has therefore been undertaken separately, by basing the magnitude of change on size or scale to determine where significant and not significant effects occur, and then describing the geographical extents of these effects and their duration and reversibility separately. Duration and reversibility are stated separately in relation to the assessed effects (for example as short/medium/long-term and temporary/permanent) and are considered as part of drawing conclusions about likely significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.
- 28.6.14 The assessment methodology utilises six scales of magnitude of change - high, medium-high, medium, medium-low, low and negligible/none; which are preferred to the 'maximum of five categories' suggested in GLVIA3 as a means of clearly defining and summarising magnitude of change judgements, as the six scales present more options to describe the magnitude of change.

Defining Impact Significance – Landscape

Sensitivity of the Landscape Receptor

- 28.6.15 The sensitivity of a landscape character receptor is a combination of the judgements made about the value associated with that receptor and the susceptibility of the receptor to the development proposed.

Value of the Landscape Receptor

- 28.6.16 The value of a landscape character receptor is a reflection of the value that society attaches to that landscape. The assessment of the landscape value is classified as high, medium-high, medium, medium-low or low and the basis for this assessment is made clear using evidence and professional judgement, based on the following range of factors.
- 28.6.17 Landscape designations - A receptor that lies within the boundary of a recognised landscape related planning designation is of increased value, depending on the proportion of the receptor that is affected and the level of importance of the designation which may be international, national, regional or local. The absence of designations does not however preclude value, as an undesignated landscape character receptor may be valued as a resource in the local or immediate environment.

- 28.6.18 Landscape quality - The quality of a landscape character receptor is a reflection of its attributes, such as scenic quality, sense of place, rarity and representativeness and the extent to which its valued attributes have remained intact. A landscape with consistent, intact, well-defined and distinctive attributes is considered to be of higher quality and, in turn, higher value, than a landscape where the introduction of elements has detracted from its character.
- 28.6.19 Landscape experience - The experiential qualities that can be evoked by a landscape receptor can add to its value and relates to a number of factors including:
- the perceptual responses it evokes;
 - the cultural associations that may exist in literature or history, or the iconic status of the landscape in its own right;
 - the recreational value of the landscape; and
 - the contribution of other values relating to the nature conservation or archaeology of the area.

Landscape Susceptibility to Change

- 28.6.20 The susceptibility of a landscape character receptor to change is a reflection of its ability to accommodate the changes that will occur as a result of the addition of the proposed development. Some landscape receptors are better able to accommodate change as a result of the development than others due to certain characteristics that are indicative of capacity to accommodate change. These characteristics may or not also be special landscape qualities that underpin designated landscapes.
- 28.6.21 The assessment of the susceptibility of the landscape receptor to change is classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement. The following indicators of landscape susceptibility are considered in the context of the development proposed:
- 28.6.22 Overall strength and robustness: Collectively the overall characteristics and qualities of a particular landscape result in a strong and robust landscape that is capable of reasonably accommodating the influence of the onshore elements of the Project without undue adverse effects on the special landscape qualities (in the case of a designated landscape) or the key characteristics.
- 28.6.23 Landscape scale and topography: The scale and topography are large enough to physically accommodate the influence of the onshore elements of the Project. Topographical features such as more complex, distinctive or small-scale coastal landforms are likely to be more susceptible than simple, broad and homogenous coastal landforms.
- 28.6.24 Openness and enclosure: Openness in the landscape may increase susceptibility to change because it can result in wider visibility, however an open landscape may also be larger scale and simple, which would decrease susceptibility. Conversely, enclosed landscapes can offer more screening potential, limiting visibility to a smaller area, however they may also be smaller scale and more complex which would increase susceptibility.

- 28.6.25 Skyline: Prominent and distinctive skylines and horizons with important landmark features that are identified in the landscape character assessment, are generally considered to be more susceptible to development in comparison to broad, simple skylines which lack landmark features or contain other infrastructure features.
- 28.6.26 Relationship with other development and landmarks: Contemporary landscapes where there are existing similar developments or other forms of development (industry, mineral extraction, masts, urban fringe / large settlement, major transport routes) that already have a characterising influence result in a lower susceptibility to development in comparison to areas characterised by limited development or smaller scale, historic development and landmarks.
- 28.6.27 Perceptual qualities: Notable landscapes that are acknowledged to be particularly scenic, wild or tranquil are generally considered to be more susceptible to development in comparison to ordinary, cultivated or farmed / developed landscapes where perceptions of 'wildness' and tranquillity are less tangible. Landscapes which are either remote or appear natural may vary in their susceptibility to development.
- 28.6.28 Landscape context and association: the extent to which the onshore elements of the Project will influence the character of landscape receptors across the study area relates to the associations that exist between the landscape receptor within which the onshore elements of the Project are located and the landscape receptor from which the onshore elements of the Project are experienced. In some situations, this association is strong, where the landscapes are directly related, and in other situations weak, where the landscape association is weak. The context and visual connection to areas of adjacent landscape character or designations has a bearing on the susceptibility to development.

Landscape Sensitivity Rating

- 28.6.29 An overall sensitivity assessment of the landscape receptor is made by combining the assessment of the value of the landscape character receptor and its susceptibility to change. The evaluation of landscape sensitivity has been applied for each landscape receptor - high, medium-high, medium, medium-low and low - by combining individual assessments of the value of the receptor and its susceptibility to change.

Landscape Magnitude of Change

- 28.6.30 The magnitude of change affecting landscape receptors is an expression of the scale of the change that will result from the onshore elements of the Project and is dependent on a number of variables regarding the size or scale of the change and the geographical extent over which the change will be experienced.

Size or Scale of Change

This criterion relates to the size or scale of change to the landscape that will arise as a result of the onshore elements of the Project, based on the following factors.

- Landscape elements: The degree to which the pattern of elements that makes up the landscape character is altered by the onshore elements of the Project, by removal or addition of elements in the landscape. The magnitude of change will generally be higher if the features that make up the landscape character are extensively removed or altered, and/or if many new elements are added to the landscape.

- Landscape characteristics: The extent to which the effect of the onshore elements of the Project changes, physically or perceptually, the key characteristics of the landscape that may be important to its distinctive character. This may include, for example, the scale of the landform, its relative simplicity or irregularity, the nature of the landscape context, the grain or orientation of the landscape, the degree to which the receptor is influenced by external features and the juxtaposition of the onshore elements of the Project in relation to these key characteristics. If the onshore elements of the Project are located in a landscape receptor that is already affected by other similar development, this may reduce the magnitude of change, particularly if there is a high level of integration and the developments form a unified and cohesive feature in the landscape.
- Landscape designation: In the case of designated landscapes, the degree of change is considered in light of the effects on the special landscape qualities which underpin the designation and the effect on the integrity of the designation. All landscapes change over time and much of that change is managed or planned. Often landscapes will have management objectives for 'protection' or 'accommodation' of development. The scale of change may be localised, or occurring over parts of an area, or more widespread affecting whole landscape receptors and their overall integrity.
- Distance: The size and scale of change is also strongly influenced by the proximity of the onshore elements of the Project to the receptor. Distance may be an influential factor to the extent that over a long range the scale of the influence on landscape receptors may be small or the very limited. Conversely, landscapes closest to the development are likely to be most affected. Where the development is located within a 'host' landscape character area this will be directly affected whilst adjacent areas of landscape character will be indirectly affected.
- Amount and nature of change: The amount of the onshore elements of the Project that is seen. Generally, the greater the amount of the onshore elements of the Project that can be seen, the higher the scale of change. Generally, the magnitude of change is likely to be lower where the Project is largely perceived to be at a distance, rather than 'within' the landscape being considered.

Geographical Extent

- 28.6.31 The geographic extent over which the landscape effects are experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude, but instead expresses the extent of the receptor that will experience a particular magnitude of change and therefore the geographical extents of the significant and non-significant effects.
- 28.6.32 The extent of the effects will vary depending on the specific nature of the onshore elements of the Project and is principally assessed through analysis of the extent of perceived changes to the landscape character through visibility of the onshore elements of the Project.

Duration and Reversibility

28.6.33 The duration and reversibility of landscape effects is based on the period over which onshore elements of the Project are likely to exist (during construction and operation) and the extent to which these elements are removed (during decommissioning) and its effects reversed at the end of that period. Long-term, medium-term, and short-term landscape effects are defined as follows:

- Long-term - more than 10 years (may be defined as permanent or reversible);
- Medium-term - 6 to 10 years; and
- Short-term - 1 to 5 years.

28.6.34 While these definitions are not set out in guidance, they form part of OPEN's standard methodology and have been applied in the LVIAs and SLVIAs for other Nationally Strategic Infrastructure Projects, including East Anglia 1 North, East Anglia 2 and Awel Y Mor.

Landscape Magnitude of Change Rating

28.6.35 The 'magnitude' or 'degree of change' resulting from the onshore elements of the Project is described as 'High', 'High-medium', 'Medium', 'Medium-low', 'Low' or 'Negligible'. In assessing magnitude of change, the assessment focuses on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects, for example as short / medium / long-term and temporary / permanent.

Evaluating Landscape Effects and Significance

28.6.36 The level of landscape effect is evaluated primarily through the combination of landscape sensitivity and magnitude of change. Once the level of effect has been assessed, a judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the Environmental Impact Assessment (EIA) Regulations. This process is assisted by the matrix in Table 28.7, which is used to guide the assessment. Geographical extent and duration and reversibility are considered relevant in drawing conclusions about significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.

28.6.37 Further information is also provided about the nature of the effects, whether these will be direct or indirect; temporary, permanent or reversible; beneficial, neutral or adverse, and cumulative.

28.6.38 A significant effect occurs where the combination of the variables results in the onshore elements of the Project having a defining effect on the landscape receptor, or where changes of a lower magnitude affect a landscape receptor that is of particularly high sensitivity. A major loss or irreversible effect over an extensive area or landscape character, affecting landscape elements, characteristics and / or perceptual aspects that are key to a nationally valued landscape are likely to be significant, particularly if they are of long duration and irreversible.

28.6.39 A non-significant effect will occur where the effect of the onshore elements of the Project is not defining, and the landscape character of the receptor continues to be characterised principally by its baseline characteristics. Equally a small-scale change experienced by a receptor of high sensitivity may not significantly affect the special landscape quality or integrity of a designation. Reversible effects, on elements, characteristics and character that are of small-scale or geographical extent or affecting lower value receptors, are unlikely to be significant.

Defining Impact Significance - Visual

28.6.40 Visual Effects are concerned wholly with the effect of the onshore elements of the Project on views, and the general visual amenity. Visual Effects are defined by the Landscape Institute in GLVIA 3, paragraphs 6.1 as follows:

"An assessment of visual effects deals with the effects of change and development on views available to people and their visual amenity. The concern ... is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views."

28.6.41 Visual effects are identified for different receptors (people) who will experience the view at their place of residence, within their community, during recreational activities, at work, or when travelling through the area. The visual effects may include the following:

- Visual effect: a change to an existing static view, sequential views, or wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view;
- Cumulative visual effects: the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect.

28.6.42 The level of visual effect (and whether this is significant) is determined through consideration of the sensitivity of the visual receptor and their view and the magnitude of change that will be brought about by the onshore elements of the Project.

Zone of Theoretical Visibility (ZTV)

28.6.43 Plans mapping the ZTV are used to analyse the extent of theoretical visibility of the OnSS. The ZTVs provide a starting point in the assessment process and tend towards giving a 'worst case' or greatest calculation of the theoretical visibility. ZTV production for the LVIA, including limitations, is described in at the end of this section 28.6.

Viewpoint Analysis

28.6.44 Viewpoint analysis is used to assist the assessment and is conducted from selected viewpoints within the study area. The purpose of this is to assess both the level of visual effect for particular receptors and to help guide the design process and focus of the assessment. A range of viewpoints are examined in detail and analysed to determine whether a significant visual effect will occur.

28.6.45 The assessment involves visiting the viewpoint location and viewing visualisations prepared for each viewpoint location. The fieldwork is generally conducted in periods of fine weather with good visibility and considers seasonal changes such as reduced leaf cover or hedgerow maintenance. The viewpoint analysis is used to assist in the assessment of effects on visual receptor locations as well as landscape character effects reported in the LVIA.

Evaluating Visual Sensitivity to Change

28.6.46 In accordance with paragraphs 6.31 to 6.37 of GLVIA3, the sensitivity of visual receptors is determined by a combination of the value of the view and the susceptibility of the visual receptors to the change likely to result from the onshore elements of the Project on the view and visual amenity.

Value of the View

28.6.47 The value of a view or series of views reflects the recognition and the importance attached either formally through identification on mapping or being subject to planning designations, or informally through the value which society attaches to the view(s). The value of a view has been classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement, based on the following criteria.

- Formal recognition - The value of views can be formally recognised through their identification on OS or tourist maps as formal viewpoints, sign-posted and with facilities provided to add to the enjoyment of the viewpoint such as parking, seating and interpretation boards. Specific views may be afforded protection in local planning policy and recognised as valued views. Specific views can also be cited as being of importance in relation to landscape or heritage planning designations, for example the value of a view has been increased if it presents an important vista from a designed landscape or lies within or overlooks a designated area, which implies a greater value to the visible landscape.
- Informal recognition - Views that are well-known at a local level and/or have particular scenic qualities can have an increased value, even if there is no formal recognition or designation. Views or viewpoints are sometimes informally recognised through references in art or literature, and this can also add to their value. A viewpoint that is visited or appreciated by a large number of people will generally have greater importance than one gained by the very few people.

Susceptibility to Change

28.6.48 Susceptibility relates to the nature of the viewer experiencing the view and how susceptible they are to the potential effects of the onshore elements of the Project. A judgement to determine the level of susceptibility therefore relates to the nature of the viewer and their experience from that particular viewpoint or series of viewpoints, classified as high, medium-high, medium, medium-low or low and based on the following criteria:

- Nature of the viewer - The nature of the viewer is defined by the occupation or activity of the viewer at the viewpoint or series of viewpoints. The most common groups of viewers considered in the visual assessment include residents, motorists, and people taking part in recreational activity or working. Viewers, whose attention is focused on the landscape, or with static long-term views, are likely to have a higher susceptibility. Viewers travelling in cars or on trains will tend to have a lower susceptibility as their view is transient and moving. The least sensitive viewers are usually people at their place of work as they are generally less susceptible to changes in views.
- Experience of the viewer - The experience of the visual receptor relates to the extent to which the viewer's attention or interest may be focused on the view and the visual amenity they experience at a particular location. The susceptibility of the viewer to change arising from the onshore elements of the Project may be influenced by the viewer's attention or interest in the view, which may be focused in a particular direction, from a static or transitory position, over a long or short duration, and with high or low clarity. For example, if the principal outlook from a settlement is aligned directly towards the onshore elements of the Project, the experience of the visual receptor is altered more notably than if the experience relates to a glimpsed view seen at an oblique angle from a car travelling at high speed. The visual amenity experienced by the viewer varies depending on the presence and relationship of visible elements, features or patterns experienced in the view and the degree to which the landscape in the view may accommodate the influence of the onshore elements of the Project.

Visual Sensitivity Rating

28.6.49 An overall level of sensitivity is applied for each visual receptor or view - high, medium-high, medium, medium-low or low by combining individual assessments of the value of the view and the susceptibility of the visual receptor to change. Each visual receptor, meaning the particular person or group of people likely to be affected at a specific viewpoint, is assessed in terms of their sensitivity.

Visual Magnitude of Change

28.6.50 The visual magnitude of change is an expression of the scale of the change that will result from the onshore elements of the Project and is dependent on a number of variables regarding the size or scale of the change and the geographical extent over which the change will be experienced. A separate assessment is also made of the duration and reversibility of visual effects.

Size or Scale of Change

28.6.51 An assessment is made regarding the size or scale of change in the view that is likely to be experienced as a result of the onshore elements of the Project, based on the following criteria:

- Distance: the distance between the visual receptor/viewpoint and the onshore elements of the Project. Generally, the greater the distance, the lower the magnitude of change, as the onshore elements of the Project will constitute a smaller scale component of the view.

- Size: the amount and size of the onshore elements of the Project that is seen. Visibility may range from small or partial visibility of the onshore elements of the Project, to all of the onshore elements being visible. Generally, the larger and greater number of the onshore elements of the Project that appear in the view, the higher the magnitude of change. This is also related to the degree to which the onshore elements of the Project may be wholly or partly screened by landform, the vegetation (seasonal) and / or built form. Conversely open views are likely to reveal more of the onshore elements of the Project, particularly where this is a key characteristic of the landscape context.
- Scale: the scale of the change in the view, with respect to the loss or addition of features in the view and changes in its composition. The scale of the onshore elements of the Project may appear larger or smaller relative to the scale of the receiving landscape.
- Field of view: the vertical / horizontal field of view (FoV) and the proportion of the view that is affected by the onshore elements of the Project. Generally, the more of the proportion of a view that is affected, the higher the magnitude of change. If the onshore elements of the Project extend across the whole of the open part of the outlook, the magnitude of change is higher as the full view has been affected. Conversely, if the onshore elements of the Project cover just a narrow part of an open, expansive and wide view, the magnitude of change is likely to be reduced as it will not affect the whole open part of the outlook. This can in part be described objectively by reference to the horizontal / vertical FoV affected, relative to the extent and proportion of the available view.
- Contrast: the character and context within which the onshore elements of the Project are seen and the degree of contrast or integration of any new features with existing landscape elements, in terms of scale, form, mass, line, height, colour, luminance and motion. Developments which contrast or appear incongruous in terms of colour, scale and form are likely to be more visible and have a higher magnitude of change.
- Consistency of image: the consistency of image of the onshore elements of the Project in relation to other developments. The magnitude of change of onshore elements of the Project is likely to be lower if its layout design is broadly similar to other developments in the landscape, in terms of its scale, form and general appearance. New development is more likely to appear as logical components of the landscape with a strong rationale for their location.
- Skyline / background: Whether the onshore elements of the Project will be viewed against the skyline or a background landscape may affect the level of contrast and magnitude. If the onshore elements of the Project add to an already developed skyline the magnitude of change will tend to be lower.
- Number: generally, the greater the number of separate onshore elements of the Project seen simultaneously or sequentially, the higher the magnitude of change. Further effects will occur in the case of separate developments and their spatial relationship to each other will affect the magnitude of change. For example, development that appears as an extension to an existing development will tend to result in a lower magnitude of change than a separate, new development.

- Nature of visibility: the nature of visibility is a further factor for consideration. The onshore elements of the Project may be subject to various phases of development change and the manner in which the onshore elements of the Project may be viewed could be intermittent or continuous and / or vary seasonally, due to periodic management or leaf fall.

Geographical Extent

28.6.52 The geographic extent over which the visual effects has been experienced is also assessed, which is distinct from the size or scale of effect and is described in terms of the physical area or location over which it is experienced (described as a linear or area measurement). The extent of the effects varies according to the specific nature of the onshore elements of the Project and is principally assessed through ZTV, field survey and viewpoint analysis of the extent of visibility likely to be experienced by visual receptors.

Duration and Reversibility

28.6.53 The duration and reversibility of visual effects are based on the period over which the onshore elements of the Project are likely to exist (during construction and operation) and the extent to which the onshore elements of the Project are removed (during decommissioning) and the effects reversed at the end of that period.

28.6.54 Long-term, medium-term and short-term visual effects are defined as follows:

- Long-term - more than 10 years (may be defined as permanent or reversible);
- Medium-term - 6 to 10 years; and
- Short-term - 1 to 5 years.

28.6.55 While these definitions are not set out in guidance, they form part of OPEN's standard methodology and have been applied in the LVIAs and SLVIAs for other Nationally Strategic Infrastructure Projects, including East Anglia 1 North, East Anglia 2 and Awel Y Mor.

Visual Magnitude of Change Rating

28.6.56 The 'magnitude' or 'degree of change' resulting from the onshore elements of the Project is described as 'High', 'High-medium', 'Medium', 'Medium-low', 'Low' and 'Negligible'. In assessing the magnitude of change the assessment focuses on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects, for example as short, medium or long-term and temporary or permanent. The basis for the assessment of magnitude for each receptor is made clear using evidence and professional judgement.

Evaluating Visual Significance and Ratings

- 28.6.57 The level of visual effect is evaluated through the combination of visual sensitivity and magnitude of change. Once the level of effect has been assessed, a professional judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the relevant EIA Regulations. This process is assisted by the matrix in Table 28.7 which is used to guide the assessment. Geographical extent and duration and reversibility are considered as part of drawing conclusions about significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.
- 28.6.58 Further information is also provided about the nature of the effects (whether these will be direct or indirect; temporary, permanent, or reversible; beneficial, neutral or adverse, and cumulative).
- 28.6.59 A significant effect is more likely to occur where a combination of the variables results in the onshore elements of the Project having a defining effect on the view or visual amenity or where changes affect a visual receptor that is of high sensitivity.
- 28.6.60 A non-significant effect is more likely to occur where a combination of the variables results in the onshore elements of the Project having a non-defining effect on the view or visual amenity or where changes affect a visual receptor that is of low sensitivity.

Defining Impact Significance – Cumulative Landscape and Cumulative Visual

- 28.6.61 NatureScot's guidance, *Assessing the Cumulative Impact of Onshore Wind Energy Developments* (2021) is widely used across the UK to inform the specific assessment of the cumulative landscape and visual effects of different types of development. Both GLVIA3 and NatureScot's guidance provides the basis for the methodology for the cumulative LVIA. The NatureScot (2021) guidance defines:

"The purpose of a Cumulative Landscape and Visual Impact Assessment (CLVIA) is to describe, visually represent and assess the ways in which a proposed windfarm would have additional impacts when considered with other consented or proposed windfarms. It should identify the significant cumulative impacts arising from the proposed windfarm."

The assessment should be proportionate to the likely impacts and all CLVIA should accord with the guidelines within GLVIA3. The emphasis should be on the production of relevant and useful information, highlighting why the proposals assessed have been included and why others have been excluded, rather than the provision of a large volume of information." (NatureScot 2021, p8);

"Cumulative landscape impacts can change either the physical fabric of character of the landscape, or any special values attached to it" (NatureScot 2021, p7); and

"Cumulative impacts on visual amenity can be caused by 'combined visibility' and/or 'sequential impacts.'" (NatureScot 2021, p7).

28.6.62 In line with this guidance therefore, the objective of the cumulative assessment is different from the assessment of effects of the Project itself. In the cumulative assessment the intention is to establish whether or not the addition of the Project, in combination with other relevant consented or proposed developments, may lead to a significant cumulative landscape or visual effect.

Evaluation of Significance

28.6.63 The matrix presented in Table 28.7 is used as a guide to help inform the threshold of significance when combining sensitivity and magnitude to assess significance. On this basis potential effects are assessed as Negligible, Minor, Moderate-Minor, Moderate, Moderate-Major and Major. In those instances where the magnitude has been assessed as 'no change', the level of effect is recorded as 'No effect'.

28.6.64 For the purposes of this assessment, any effects with a significance level of Major and Moderate-Major have been deemed significant in EIA terms (dark turquoise shaded boxes in Table 28.7). 'Moderate' levels of effect have the potential, subject to the assessor's professional judgement, to be considered as significant or not significant, depending on the sensitivity and magnitude of change factors evaluated (turquoise shaded boxes in Table 28.7). These assessments are explained as part of the assessment, where they occur. Significance can therefore occur at a range of levels depending on the magnitude and sensitivity, however in all cases, a significant effect is considered more likely to occur where a combination of the variables results in the onshore elements of the Project having a defining effect on the landscape character or view. Definitions are not provided for the individual categories of significance shown in the matrix and the reader should refer to the detailed definitions provided for the factors that combine to inform sensitivity and magnitude

28.6.65 Effects assessed as being either Moderate-Minor, Minor or Negligible level are assessed as not-significant (grey shaded boxes in Table 28.7).

Table 28.7: Matrix Used to Guide Determination of Effect Significance

		Magnitude of change					
		High	Medium to high	Medium	Medium to low	Low	Negligible or no change
Sensitivity of receptor	High	Major (Significant)	Major (Significant)	Major / Moderate (Significant)	Moderate (Significant or Not significant)	Moderate / Minor (Not Significant)	Minor (Not significant)
	Medium-high	Major (Significant)	Major / Moderate (Significant)	Moderate (Significant or Not significant)	Moderate (Significant or Not significant)	Moderate / Minor (Not Significant)	Minor (Not significant)
	Medium	Major / Moderate (Significant)	Moderate (Significant or Not significant)	Moderate (Significant or Not significant)	Moderate / Minor (Not Significant)	Minor (Not significant)	Minor (Not significant)
	Medium-low	Moderate (Significant or Not significant)	Moderate (Significant or Not significant)	Moderate / Minor (Not Significant)	Minor (Not significant)	Minor (Not significant)	Negligible (Not significant)
	Low	Moderate / Minor (Not Significant)	Moderate / Minor (Not Significant)	Minor (Not significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)

28.6.66 In line with the emphasis placed in GLVIA3 upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessment made for each landscape and visual receptor. Such narrative assessments provide a level of detail over and above the outline assessment provided by use of the matrix alone.

28.6.67 The landscape and visual assessment, unavoidably, involves a combination of quantitative and qualitative assessment and wherever possible cross reference has been made to objective evidence, baseline figures and / or to photomontage visualisations to support the assessment conclusions. Often a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach. Importantly, each effect results from its own unique set of circumstances and has been assessed on a case-by-case basis. The matrix, as presented in Table 28.7, should, therefore, be considered as a guide and any deviation from this guide has been clearly explained in the assessment.

Nature of Effects

- 28.6.68 The EIA Regulations state that the ES should define 'the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development'.
- 28.6.69 In accordance with the EIA Regulations, in this assessment the nature of effects refers to whether the landscape and / or visual effect of the onshore elements of the Project is positive or negative (herein referred to as 'beneficial', 'neutral' or 'adverse').
- 28.6.70 Guidance provided in GLVIA3 on the nature of effect states that *“in the LVIA, thought must be given to whether the likely significant landscape and visual effects are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity”*, but it does not provide guidance as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and, where applied, this involves reasoned professional opinion.
- 28.6.71 In this LVIA a precautionary approach has been adopted, which assumes that significant landscape and visual effects are weighed on the adverse side of the planning balance, unless otherwise stated. Beneficial or neutral effects may, however, arise in certain situations and are stated in the assessment where relevant, based on the following definitions.
- Beneficial effects - contribute to the landscape and visual resource through the enhancement of desirable characteristics or the introduction of new, beneficial attributes. The development contributes to the landscape by virtue of good design or the introduction of new landscape planting. The removal of undesirable existing elements or characteristics can also be beneficial, as can their replacement with more appropriate components.
 - Neutral effects - occur where the development fits with the existing landscape character or visual amenity. The development neither contributes to nor detracts from the landscape and visual resource and can be accommodated with neither beneficial or adverse effects, nor where the effects are so limited that the change is hardly noticeable. A change to the landscape and visual resource is not considered to be adverse simply because it constitutes an alteration to the existing situation.
 - Adverse effects - are those that detract from the landscape character or quality of visual attributes experienced, through the introduction of elements that contrast, in a detrimental way, with the existing characteristics of the landscape and visual resource, or through the removal of elements that are key in its characterisation.

OnSS Theoretical Visibility Analysis

- 28.6.72 The ZTVs on Figure 28.5, Figure 28.6, Figure 28.7, Figure 28.8, Figure 28.9 and Figure 28.10 have been generated using Geographic Information Systems software to demonstrate the extent to which the OnSS may theoretically be seen from any point in the three respective OnSS study areas.

- 28.6.73 The OnSS technology will employ either Air Insulated Switchgear (AIS) or Gas Insulated Switchgear (GIS). The choice of switchgear affects both the total land area required and the size and type of buildings which will be needed. If a GIS option is selected the land area needed for the OnSS will be up to 347m x 209m (72,600 m²) in area. The maximum height of the GIS building will be 19 m, excluding lightning masts and any land raising. If an AIS option is selected, the OnSS will be up to 285m x 325m (92,700 m²) in area. The maximum height of structures will be 15 m, excluding any land raising, which is notably smaller than the GIS option.
- 28.6.74 The maximum design scenario for the finished ground level of the OnSS zone platform has been estimated using the existing ground levels as a guide to determine the ground level across the entire OnSS platform. It should be noted that the OnSS platform is based on the GIS footprint, because of its greater vertical extents, despite it being smaller in horizontal extents.
- 28.6.75 ZTVs are primarily calculated based on the visibility at 2m above the height of the landform relative to the height of the project (i.e. viewer height of 2m). The ZTVs shown on Figure 28.5, Figure 28.7 and Figure 28.9 reflect bare ground theoretical visibility. The ZTVs shown on Figure 28.6, Figure 28.8 and Figure 28.10 also factor in the potential screening effect of areas of woodland within the study area. An average height of 10m has been attributed to all woodlands, and with heights based on observations during fieldwork, these are considered to be a conservative average. The ZTVs do not take into account the screening effect of smaller groups of trees, hedgerows, hedgerow trees, buildings or other local features. As a result, the ZTVs present a conservative worst case assumption in respect of theoretical visibility.
- 28.6.76 There are limitations in the production of the ZTVs, as presented below, and these should be borne in mind in their consideration and use:
- The ZTVs are based on 5m data grid (Ordnance Survey Terrain 5) with a viewer height of 2m above ground level;
 - The bare ground ZTV does not consider the screening effects of woodlands, vegetation, buildings, or other local features that may prevent or reduce visibility;
 - The screened ZTV illustrates the bare ground situation with major woodland blocks reflected, but does not consider the screening effects of other vegetation, buildings, or other local features that may prevent or reduce visibility;
 - The woodland blocks included in the screened ZTV may differ to the actual height of woodland in the study area. Having undertaken fieldwork, it is considered that the assumed height of 10m used in the screened ZTV represents a conservative average;
 - The ZTV does not indicate the decrease in visibility that occurs with increased distance from the indicative OnSS location. The nature of what is visible from 1km away will differ markedly from what is visible from 5km away, although both are indicated on the ZTV as having the same level of visibility; and
 - There is a wide range of variation within the visibility shown on the ZTV. For example, an area shown as having visibility of the indicative OnSS location, may only gain views of the smallest extremity rather than all of it, as may be the case elsewhere.

28.6.77 These limitations mean that while the ZTV is used as a starting point in the assessment, providing an indication of where the indicative OnSS locations will theoretically be visible from, the information drawn from the ZTV is not completely relied upon to accurately represent visibility of the indicative OnSS locations.

Visualisations

28.6.78 The viewpoint assessment of the OnSS is illustrated by a range of visualisations, including photographs and block model photomontages, which are in line with current best practice and the guidance provided in Landscape Institute – Visual Representation of Development Proposals (2019). Visualisations have a number of limitations when using them to form a judgement on a development. These include:

- The images provided give a reasonable impression of the scale of, and distance to the OnSS, but can never be 100% accurate;
- The viewpoints illustrated are representative of views in the area but cannot represent visibility at all locations;
- To form the best impression of the visual impacts of the OnSS these images are best viewed at the viewpoint locations shown;
- The visualisations must be printed at the right size to be viewed properly (A1 width) and viewed at a comfortable viewing distance;
- The first visualisation sheet for each of the viewpoints illustrates the existing view with a baseline photograph, the second visualisation presents a photomontage using a 3D block model of the OnSS, and the third visualisation presents the photomontage with the block model of the OnSS and the proposed mitigation planting at year 15; and
- The photomontage visualisations for all viewpoints show the maximum parameters of the OnSS as a 3D block model including a maximum building height of 19m.

28.6.79 A 3D block model of the GIS OnSS has been included in the viewpoint visualisations. The parameters of the 3D block model and its location on the estimated OnSS platform taken from existing ground levels, represents the maximum design scenario for PEIR.

28.6.80 The proposed mitigation planting has been included in the viewpoints for each of the three indicative OnSS locations. These visualisations represent the approximate height of mitigation planting after 15 years, estimated to be 7 to 10m and as shown on the year 15 visualisations at an average of 8.5m in height.

28.6.81 The photographs used to produce the photomontages have been taken using Canon EOS 5D and 6D Digital SLR cameras, with a fixed lens and a full-frame (35 mm negative size) CMOS sensor. The photographs are taken on a tripod with a pano-head at a height of approximately 1.5m above ground. To create the baseline panorama, the frames are individually cylindrically projected and then digitally joined to create a planar projected panorama with a 53.5-degree field of view. Tonal alterations are made using Adobe software to create an even range of tones across the photographs once joined.

28.6.82 The photographs and photomontages used in this assessment are for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what will be apparent to the human eye. The assessments are carried out from observations in the field and, therefore, may include elements that are not visible in the photographs.

Assumptions and Limitations

Graphic Production

28.6.83 ZTV and photomontage visualisations have specific limitations which are described in detail in the section above.

Fieldwork

28.6.84 It is not possible to visit every part of the study area when undertaking an LVIA and, therefore, some aspects of the assessment are based on desk-based study and professional experience.

28.7 Impact Assessment: Physical Landscape

Introduction

28.7.1 The proposed building of the OnSS and access road, open trenching relating to the onshore ECC, and creation of temporary access and construction compounds, will have physical landscape effects on trees, hedgerows, agricultural land and coastal land. There are woodlands within the LVIA study area, however, direct impacts to these have been avoided through careful design of the onshore ECC or use of Trenchless drilling (or other trenchless crossing techniques) to install cables beneath woodlands and so avoid disturbance. Therefore, for assessment purposes the physical landscape elements with the potential for significant effects have been divided into five categories: agricultural land; hedgerows; tall hedgerows and hedgerow trees; trees; and coastal land.

28.7.2 As described in section 28.5– Basis of Assessment, the onshore ECC is only considered to have potential for significant effects during the construction phase due to the disturbance of landscape features required to construct the underground infrastructure. Regrowth during the operational phase is also considered as part of this assessment.

Coastal Land

Baseline

28.7.3 This landscape element is made up of several distinct elements that together create the coastal character found at the eastern extent of the onshore ECC and landfall. The distinct elements include the beach, dune grassland, sea bank, coastal marsh and farmland. The area of search for the landfall takes in the coastal land between Anderby Creek in the north and Chapel St Leonard in the south. This area is characterised by the natural features of a broad sandy beach with low hummocky dunes and protected areas of marsh, and the modified features of the sea bank, coastal road, farmland and settlement, including the caravan parks on the northern and southern edges of the area.

Sensitivity

- 28.7.4 The value of the coastal land is medium-high. There are no national or county level landscape planning designations which would otherwise denote a special value. This coastline includes the Wolla Bank Pit and Chapel Pit Nature Reserves and a short section of the much longer English Coast Path, which indicate some degree of scenic value, although the path does pass through a broad range of developed and undeveloped coastal landscapes.
- 28.7.5 The susceptibility of the coastal land is medium. While a number of natural elements have been preserved, including the beach, dunes and marshland, much of this coastal landscape has been modified by the introduction of the sea bank, coastal road, parking and occasional buildings. Arable farmland also extends close to the coastal edge, such that only a narrow strip of unmodified or semi-unmodified land remains. The susceptibility of the coastal land is also moderated by the ease with which it can be restored following the construction of the landfall.
- 28.7.6 The medium-high value and the medium susceptibility of the coastal land gives rise to an overall medium-high sensitivity.

Magnitude of Change

- 28.7.7 The landfall will comprise Trenchless drilling which will be located between Anderby Creek and Chapel St. Leonard. This will extend up to 1,500m underground from the beach inland, thus avoiding disturbance to the features of the coastal land, including the dunes, marshland, coastal path, sea bank and road. The construction sites and compounds associated with the landfall will be located in the agricultural land to the west of the coastal land. The magnitude of change will relate to access onto the beach by machinery and short-term construction works on the beach.
- 28.7.8 Taking these factors into account, the magnitude of change on the coastal land will be low.

Significance of Effect

- 28.7.9 The effect of the landfall on the coastal land will be **not significant** at a **moderate / minor** level. The effect will be adverse, short term and reversible.

Agricultural Land

Baseline

- 28.7.10 Agricultural farmland is the predominant land use along the length of the onshore ECC search areas and in the three OnSS search areas. It largely comprises fields of arable with only occasional fields of pasture for livestock. While the onshore ECC and OnSS search areas in the East Lindsey District Area are located in areas of historic farmland, the onshore ECC and OnSS search areas in the south are largely located in areas of reclaimed marshland.

28.7.11 The agricultural land is constantly being disturbed through ploughing, reseeding and harvesting. The changing appearance of the agricultural landscape and the activities associated with ploughing fields or planting and harvesting crops is, therefore, a common and integral characteristic of the agricultural landscape. The presence and activity of farm machinery is also a feature across the arable landscape and on rural and main roads. There are very few natural areas in the agricultural landscape, especially in the heavily modified reclaimed landscapes to the south.

Sensitivity

28.7.12 The onshore ECC search areas and the OnSS Search areas do not coincide with any designated landscapes and the agricultural land has no special value in relation to its characteristics as a landscape element. The value of the agricultural land is considered to be medium - low.

28.7.13 Grass and arable crops are easily replaced. The level of existing disruption as a result of crop cultivation, combined with the widespread occurrence of agricultural land as a landscape element and the ease with which these types of vegetation can be reinstated, means that susceptibility is considered to be low.

28.7.14 The medium-low value combined with the low susceptibility gives rise to a sensitivity rating of medium – low for the agricultural land.

Magnitude of Change

28.7.15 The level of change relating to cable route trenching, construction of running tracks, and presence of soil bunds within the onshore ECC will form a relatively small-scale, short-term and localised disturbance to the agricultural land. After the cable has been laid, the trench will be backfilled and temporary working areas and haul roads removed. The agricultural land will then return to its previous use. Re-instatement is therefore considered relatively straightforward with minimal disruption required to return the land to its previous uses and productivity.

28.7.16 Construction compounds and the site of the emerging OnSS will require a larger land take and may be there for a longer period, particularly in respect of the Trenchless drilling compounds, although still only occupying a small proportion of the wider agricultural landscape.

28.7.17 Taking these factors into account magnitude of change on the agricultural land is considered to be medium – low.

Significance of Effect

28.7.18 The effect of the onshore ECC and OnSS options on the agricultural land will be **not significant** at a **moderate / minor** level. The effect will be adverse, short term and reversible.

Hedgerows

Baseline

28.7.19 Hedgerows are a common feature in the rural landscape in which the onshore ECC search areas and OnSS Search areas occur. The hedgerows vary in height, continuity and condition, with some hedgerows appearing more formally managed, while others have a scrubbier form often with a fragmented appearance. The amalgamation of fields and the neglect of hedgerows has led to the gradual erosion of the enclosure of fields by hedgerows in this area.

Sensitivity

28.7.20 Hedgerows form an important component of the rural and historic landscape character, and their value is considered to be medium - high.

28.7.21 The sections of hedgerow lost to construction works will be reinstated post construction and as this can be achieved with relative ease this reduces their overall susceptibility to the onshore ECC. Susceptibility for hedgerows is considered to be medium - low.

28.7.22 The medium - high value combined with the medium - low susceptibility gives rise to a sensitivity rating of medium for the hedgerows.

Magnitude of Change

28.7.23 Careful consideration of cable routing has sought to reduce the amount of hedgerow removal along the onshore ECC. The limited presence of hedgerows in many parts of this open agricultural landscape will moderate the potential effect that further removals will have. Furthermore, reinstatement of removed sections of hedgerows will mitigate the effects of lost hedgerows by infilling gaps and completing the enclosure, taking low hedgerows approximately 3 to 5 years to mature.

28.7.24 The magnitude of change for hedgerow losses will give rise to a medium - low magnitude of change as they are either low in height, fragmented or scrubby and as such will be easily replaced.

Significance of Effect

28.7.25 The effect of the onshore ECC on the hedgerows will be **not significant** at a **minor** level. The effect will be adverse, short term and reversible.

Tall Hedgerows and Hedgerow Trees

Baseline

28.7.26 Tall hedgerows and hedgerow trees are also a common feature in the rural landscape in which the onshore ECC search areas and OnSS search areas occur. These also vary in height, continuity and condition, although taller hedgerows tend to be more formally managed. Where trees are found within hedgerows they vary in size, age frequency and condition. The tall hedgerows and hedgerow trees occur along field boundaries and roadsides, emphasising the geometric pattern of this farmed landscape.

Sensitivity

28.7.27 Tall hedgerows and hedgerow trees form an important component of the rural and historic landscape character. All hedgerow trees and particularly mature trees add character and enclosure in an otherwise open and largely featureless agricultural landscape and this function increases their value, which is considered to be medium – high.

28.7.28 The susceptibility of hedgerow trees and better condition, taller hedgerows is higher than smaller hedgerows, as their loss will be more apparent and their reinstatement longer term. For these hedgerows and trees, susceptibility is considered to be medium - high.

28.7.29 The medium - high value combined with the medium - high susceptibility gives rise to a sensitivity rating of medium - high for the hedgerow trees and better condition, taller hedgerows.

Magnitude of Change

28.7.30 Careful consideration of the potential routes for the onshore ECC and locations for the OnSS has sought to reduce the amount of hedgerow and hedgerow tree removal along the onshore ECC search areas and in the OnSS search areas. Reinstatement of removed hedgerows will mitigate the effects of lost hedgerows by infilling gaps and completing the enclosure, taking 5 to 10 years for taller hedgerows to mature to the original height. Restrictions applied to planting over cable corridors prevents hedgerow trees from being replanted within the onshore ECC and parts of the OnSS where underground cables occur. Taking all of this into account, for better condition, taller hedgerows, often with hedgerow trees present, the magnitude of change is considered to be medium.

Significance of Effect

28.7.31 The effect of the onshore ECC on the high hedgerows and hedgerow trees will be **significant** at a **moderate** level. The effect will be adverse, medium, or long term and reversible. Trees removed over the onshore ECC will be unable to be replanted within the lifespan of the Project and only reversible following decommissioning.

Trees

28.7.32 Mature trees are found within parts of the onshore ECC search areas and the OnSS search areas. While many of these are hedgerow trees, there are also individual trees and woodland copses occurring in parts of these search areas. These trees provide a notable contribution to the landscape character of the onshore ECC search areas and OnSS search areas in terms of the character and enclosure they provide in an otherwise open and largely featureless agricultural landscape. They are typically located along field boundaries and roadsides, emphasising the geometric pattern of this farmed landscape.

Sensitivity

28.7.33 Trees are of importance to the historical pattern and character of the landscape. All trees, and particularly mature trees are important in terms of the contribution they make to landscape character, especially in landscapes, such as this, that have been heavily modified by intensive agricultural practices. The value of trees in the onshore ECC search areas and OnSS search areas is considered to be medium-high.

28.7.34 Re-establishment of trees will take a long period of time to achieve and could not be replanted over those areas over the onshore ECC within the lifespan of the Project. These factors heighten the overall susceptibility of the trees and as such, susceptibility is considered to be medium-high.

28.7.35 Taking all of this into account, the sensitivity of trees is considered to be medium-high.

Magnitude of Change

28.7.36 Careful consideration of the potential routes for the onshore ECC and locations for the OnSS has sought to reduce the amount of tree removals along the onshore ECC search areas and in the OnSS search areas. Restrictions applied to planting over cable corridors prevents trees from being replanted within the onshore ECC and parts of the OnSS where underground cables occur. Taking these factors into account, the magnitude of change on the trees being removed is considered to be medium-high.

Significance of Effect

28.7.37 The effect of the onshore ECC and OnSS on the trees to be removed will be **significant** at a **moderate / major** level. The effect will be adverse, long term and reversible. Trees removed over the onshore ECC will be unable to be replanted within the lifespan of the Project and only reversible following decommission.

Summary of Effects on Physical Landscape

28.7.38 The landfall and onshore ECC will not have a significant effect on the coastal land and the onshore ECC and OnSS will not have a significant effect on the agricultural land and hedgerows. Where hedgerows are removed during the construction phase, there will be a short-term effect as these will be replaced post construction and will reach their original height within 3 to 5 years. Where taller hedgerows are removed during the construction phase, the effect will be significant and medium-term as it will take these taller hedgerows 5 to 10 years to reach their original height. Where trees and hedgerow trees are removed during the construction phase, the effect will be significant and long-term, as restrictions on planting over the cables will prevent the replacement of tree species until after decommissioning.

28.8 Impact Assessment: Landscape Character

Introduction

28.8.1 Landscape character receptors within the LVIA study area, including LCAs and landscape designations, are assessed to identify which have potential to be significantly affected by the onshore elements of the Project.

28.8.2 In considering the potential effects of the construction of the landfall and onshore ECC on the LCAs and landscape designations, there are a number of factors that ensure these effects will not be significant. Firstly, the extent of land affected by the construction of the landfall and onshore ECC will be limited to those localised areas on and around the landfall and the 80m working width of the onshore ECC. Secondly, the construction works will all be at or below ground level with the most visible elements formed by the machinery required for trenchless drilling and cutting operations. These first two factors combine to ensure that the construction works are relatively small in scale and contained. Thirdly, the construction works associated with the landfall and onshore ECC will occur in landscapes characterised by arable farming, where the disturbance of soil and presence of machinery is a common feature in relation to agricultural land-uses. The construction works will occur on land that is routinely worked by machinery and the construction works will typically not have a sufficient influence to redefine the character of these landscapes. It should also be noted that the occurrence and extent of tree cover and hedgerows is limited, especially in the southern part of Lincolnshire, and therefore this moderates the susceptibility of the LCAs and AONB to these potential effects. Fourthly, where the landfall or onshore ECC is located in the LCA and direct effects will arise, the construction works will occupy an especially small proportion of the much wider LCA, and where the landfall or onshore ECC is located outwith the LCA or AONB and indirect effects occur, the influence would be even weaker. It is in this context that the construction works will not have a sufficient influence to redefine the character of these much wider LCAs or AONB.

28.8.3 Whilst some permanent tree removal will occur as a result of the onshore ECC, the effect will be limited when considered within the overall characteristics of the wider areas. It is considered that whilst these effects will have some association with the LCAs in which the proposed onshore ECC and landfall will occur, these LCAs are only likely to experience a low scale of change and/ or effects experienced over limited geographic areas. The onshore ECC and landfall do not lie within any of the identified designated landscapes.

- 28.8.4 As a result, it is considered that the construction of the proposed onshore ECC and landfall will not become a prevailing or defining element or characteristic within the context of the existing landscape character and, therefore, does not have potential to give rise to significant effects and is not assessed any further in the LVIA. There is no potential for the landfall and onshore ECC to give rise to effects during the operational phase as the infrastructure will mostly be buried underground and therefore not visible. While there is the potential for residual effects associated with tree or hedgerow removals to extend beyond the construction phase and into the operational phase, there is not enough detail at PEIR to present a detailed assessment of these effects and, therefore, this has been deferred until the DCO Application.
- 28.8.5 This section of the LVIA focusses on the effects of the OnSS during the construction and operational phases. The landscape effects of the landfall, onshore ECC and OnSS during the decommissioning phase will be the same or less than those identified during the construction phase, as described at section 28.10 and are therefore not assessed in detail in this assessment.

OnSS Lincolnshire Node

Preliminary Assessment

- 28.8.6 The Lincolnshire Node OnSS search area is located approximately 4.2km to the north-west of the town of Alford and 1.3km to the east of the village of Huttoft in the area covered by the East Lindsey District Landscape Character Assessment, as shown on Figure 28.1.
- 28.8.7 Figure 28.14 illustrates the LCAs in conjunction with the screened ZTV and Figure 28.18 illustrates the landscape designations in conjunction with the screened ZTV. These figures show that the Lincolnshire Node OnSS search area and indicative location lie between the I1 Holton le Clay to Great Steeping Marsh LCA and J1 Tetney Lock to Skegness Coastal Outmarsh LCA. Figure 28.14 shows that only these two LCAs have the potential to be affected by the OnSS and these are assessed in detail below. Figure 28.18 shows that although there is only a marginal overlap between the study area and the south-east corner of the Lincolnshire Wolds AONB, there is the potential that localised visibility may arise. Owing to the sensitivity attributed to the AONB, it has been included in the detailed assessment below, despite the separation distance and the limited extent of visibility.

I1 Holton le Clay to Great Steeping Middle Marsh LCA

Baseline

- 28.8.8 I1 Holton le Clay to Great Steeping Middle Marsh LCA covers an area of land that follows a broadly north to south alignment, in parallel with the coast and separated from the coast by the intervening J1 Tetney Lock to Skegness Coastal Outmarsh LCA and K1 Donna Nook to Gibraltar Point Naturalistic Coast LCA. This LCA extends from Holton le Clay in the north to Great Steeping Middle Marsh in the south. The key characteristics, set out in the East Lindsey District Landscape Character Assessment, are as follows;
- *“Gently undulating foothills to the Wolds rising from Tetney Lock to Skegness Coastal Outmarsh with views to Binbrook to Tetford Wolds Farmland and Little Cawthorpe to Skendleby Wolds Farmland.*

- *Predominantly arable farmland with medium to large scale fields, some pasture with grazing sheep and cattle, bounded by ditches and dykes.*
- *Meandering rivers and streams, and the Louth Canal contained by flood embankments, which flow from the Wolds eastwards to the coast.*
- *Scattered blocks of mixed deciduous woodland throughout but more frequent around the south-western boundary.*
- *Frequent scattered villages, hamlets, farmsteads and dwellings include a line of merging villages at the foot of the Wolds.*
- *Traditional and distinctive historic market towns of Louth, Alford and Burgh le Marsh.*
- *Scattered scheduled monuments and heritage features such as windmills and water mills, ridge and furrow fields, deserted medieval villages and disused railway tracks.*
- *A distinctive and tranquil rural landscape with very few minor detractors.”*

28.8.9 The local landscape around the OnSS is typical of this description in that it is characterised by arable farmland and presents an attractive rural landscape with few detractors, albeit with only a limited extent of woodland cover. The location of the OnSS close to the eastern boundary of the LCA where it abuts J1 Tetney Lock to Skegness Coastal Outmarsh LCA, means that the landform is relatively flat and low-lying with none of the foothills referenced in the description, albeit with gentle undulations occurring in the area around the site. The historic town of Alford lies to the south-west with the smaller villages of Bilsby to the south-west and the smaller hamlets of Markby to the north-west and Thurlby to the south.

Sensitivity

28.8.10 The value of I1 Holten le Clay to Great Steeping Middle Marsh LCA is medium. There are no landscape planning designations covering this LCA which would otherwise denote a special scenic value.

28.8.11 The susceptibility of this LCA to the effects of the OnSS is medium-high. The high part of the rating relates to the small-scale and rural character of the LCA in which there are very few large-scale developments, thus presenting a context in which the OnSS will appear at variance in scale and character. The medium part of the rating relates to the extent to which this LCA has already been modified by human influences, most notably the extent of highly intensive arable farmland, but also the presence of built development in the form of settlements, rural properties and farmsteads.

28.8.12 The combination of the medium value of this LCA and its medium-high susceptibility to the Project, gives rise to an overall medium-high sensitivity.

Magnitude of Change

28.8.13 The majority of the LCA will either undergo no change owing to no visibility of the Lincolnshire Node OnSS or a negligible or low magnitude of change owing to distant and limited extents of visibility. The ZTV on Figure 28.14 shows the limited extents of visibility concentrated in a localised part of the wider LCA.

- 28.8.14 The magnitude of change, across the localised part of the LCA around the OnSS, during the construction and operational phase will be high, medium-high, or medium while the magnitude of change on the remaining parts of the LCA will be medium-low, low or with no effect.
- 28.8.15 As this is a relatively flat landscape, the extents of the effects will be largely determined by the location of woodland, tree cover and settlement, as well as the subtle undulations in the surrounding landform. The high magnitude of change will extend north from the OnSS to Asserby, where the enclosing tree cover and hedgerows around the properties and along the minor road will form a partial screen. A similar situation will occur to the south, where the tree cover and hedgerows along Alford Road and properties in Thurlby will mark the limit of the high magnitude of change. The high magnitude of change will extend west towards Sutton Road (A1111). In these areas the close-range presence of the OnSS means that it will appear as a large-scale modern development, at variance with the predominantly small scale and rural character of the LCA. To the immediate east lies the neighbouring J1 Tetney Lock to Skegness Coastal Outmarsh LCA which is assessed separately below.
- 28.8.16 The tree cover, hedgerows and settlement, which define this area, also form a partial screen and sense of separation to those parts of the LCA that lie beyond this area where a high magnitude of change will occur. While visibility beyond will typically comprise vertical sections or roof sections of the OnSS seen between or above the screening elements, there may also be instances where openings present much fuller visibility. The magnitude of change will be medium-high or medium in the area which extends out towards Markby, approximately 1.6km to the north-west, out to Bilsby approximately 2.0km to the west and just beyond the B1449 approximately 1.8km to the south.
- 28.8.17 Beyond these extents, the increased separation distance, which will reduce the perceived scale of the OnSS, and the accumulation of the screening effect of intervening vegetation, will combine to reduce the magnitude of change to medium-low or low. The limited visibility of the OnSS from these more distant locations and the stronger influence from the closer-range baseline landscape will ensure that the OnSS will not form the defining feature in terms of landscape character.

Significance of Effect

- 28.8.18 The overall effect of the construction and operation of Lincolnshire Node OnSS on I1 Holton le Clay to Great Steeping Middle Marsh LCA will be **not significant** at a moderate / minor or minor level, owing to the broad extent of the LCA and the limited extent to which the Lincolnshire Node OnSS will be visible across it.
- 28.8.19 There will, however, be localised effects that will be **major** and **significant** out to approximately 500m to the north-west, 800m to the south, and 1.2km to the west. Effects that are **major / moderate** or **moderate** and **significant** will occur beyond these extents out to approximately 1.4km to 1.8km to the north and south and out to 2.0km to the west. The effects beyond these extents will either be **moderate**, **moderate / minor** or **minor** and **not significant** or there will be **no effect**.

J1 Tetney Lock to Skegness Coastal Outmarsh LCA

Baseline

28.8.20 J1 Tetney Lock to Skegness Coastal Outmarsh LCA covers an area of land that follows a broadly north to south alignment, in parallel with the coast and only separated by the narrow band of K1 Donna Nook to Gibraltar Point Naturalistic Coast LCA which forms the coast. This LCA extends from Tetney Lock in the north to Skegness Coastal Outmarsh in the south. The key characteristics set out in the East Lindsey District Landscape Character Assessment are as follows;

- *“A low lying, drained coastal plain contained to the east by sea embankments, sand dunes and sea defences. Mostly flat with some areas of gentle undulations including some saltern mounds.*
- *Some wide open views and big skies. Some views enclosed by landform, embankments, sand dunes or trees.*
- *Extensive network of drains, ditches and dykes with a strong geometric pattern in the northern and central parts of the area.*
- *Rivers and the historic Louth Canal cross from the Lincolnshire Wolds in the west towards the coast.*
- *Predominantly mixed agricultural landuse with both arable and pasture, and some remnants of ridge and furrow.*
- *Several important coastal nature reserves with a high level of nature conservation designation with associated wildlife.*
- *Sparsely scattered settlements set within mature ornamental trees and hedgerows.*
- *A stretch of coastal resorts from Mablethorpe to Skegness with caravan parks, and new residential and commercial developments on their outskirts.*
- *An extensive network of raised minor roads with a few larger A roads serving the coastal resorts.*
- *A predominantly intact and distinctive rural landscape with some man-made influences including a gas terminal, a oil storage facility and several windfarms.”*

28.8.21 The local landscape around the OnSS is typical of this description in that it is characterised by arable farmland and presents an attractive rural landscape with few detractors, albeit with only a limited extent of woodland cover. The location of the OnSS close to the western boundary of the LCA where it abuts I1 Holten le Clay to Great Steeping Marsh LCA, means that the landform is relatively flat and low-lying with none of the foothills referenced in the description, albeit with some gentle undulations. The historic town of Alford lies to the south-west, with the smaller villages of Huttoft to the east and Bilsby to the south-west, and the smaller hamlets of Markby to the north-west and Thurlby to the south.

Sensitivity

- 28.8.22 The value of J1 Tetney Lock to Skegness Coastal Outmarsh LCA is medium. There are no landscape planning designations covering this LCA which would otherwise denote a special scenic value.
- 28.8.23 The susceptibility of this LCA to the effects of the OnSS is medium-high. The high part of the rating relates to the small-scale and rural character of the LCA in which there are very few large-scale developments, presenting a context in which the OnSS will appear at variance in scale and character. The medium part of the rating relates to the extent to which this LCA has already been modified by human influences, most notably the extent of highly intensive arable farmland, but also the presence of built development in the form of settlements, rural properties and farmsteads. There is also the influence in this LCA from wind turbines and masts to the north-east of the Lincolnshire Node search area and to the west and south of Mablethorpe respectively.
- 28.8.24 The combination of the medium value of this LCA and its medium-high susceptibility to the Project, gives rise to an overall medium-high sensitivity.

Magnitude of Change

- 28.8.25 The majority of the LCA will either undergo no change owing to no visibility of the Lincolnshire Node OnSS or a negligible or low magnitude of change owing to distant and limited extents of visibility. The ZTV on Figure 28.14 show the limited extents of visibility concentrated in a localised part of the wider LCA.
- 28.8.26 The magnitude of change across the localised part of the LCA around the OnSS during the construction and operational phases will be high, medium-high, or medium while the magnitude of change on the remaining parts of the LCA will be medium-low, low or with no effect.
- 28.8.27 As this is a relatively flat landscape, the extents of the effects will be largely determined by the location of woodland, tree cover and settlement, as well as the subtle undulations in the surrounding landform. The high magnitude of change will extend north from the OnSS to Crawcroft Lane, where the enclosing tree cover and hedgerows around the properties and along the minor road will form a partial screen. A similar situation will occur to the south, where the tree cover, hedgerows and properties will mark the limit of the high magnitude of change between Alford Road and Thurlby. The high magnitude of change will extend east and south-east to the dismantled railway where the mature tree cover will present a more substantial screen. In these areas the close-range presence of the OnSS means that it will appear as a large-scale modern development, at variance with the small scale and rural character of the LCA. To the immediate west lies the neighbouring I1 Holton le Clay to Great Steeping Middle Marsh LCA which is assessed separately above.

- 28.8.28 The tree cover, hedgerows and built development, which define this area, where a high magnitude of change will occur, also form a partial screen and sense of separation to those parts of the LCA that lie beyond this area. While visibility will typically comprise vertical sections or roof sections of the OnSS seen between or above the screening elements, there may also be instances where openings present much fuller visibility. The magnitude of change will be medium-high or medium in the area which extends out towards Crawcroft Lane approximately 1.6 to 1.8km to the north-east, out to the western edge of Huttoft approximately 1.5km to the east, and just beyond the B1449 approximately 1.8km to the south.
- 28.8.29 Beyond these extents, the increased separation distance, which will reduce the perceived scale of the OnSS, and the accumulation of the screening effect of intervening vegetation will reduce the extent of visibility, these factors combining to reduce the magnitude of change to medium-low or low. The limited visibility of the OnSS from these more distant locations and the stronger influence from the close-range baseline landscape will ensure that the OnSS will not form the defining feature in terms of landscape character.

Significance of Effect

- 28.8.30 The overall effect of the construction and operation of Lincolnshire Node OnSS on I1 Holton le Clay to Great Steeping Marsh LCA will be **not significant**, owing to the broad extent of the LCA and the limited extent to which the Lincolnshire Node OnSS will be visible across it.
- 28.8.31 There will, however, be localised effects that will be **major** and **significant** out to approximately 1.4km to the north-east, and 800m to the east and south. Effects that are **major / moderate** or **moderate** and **significant** will occur beyond these extents out to approximately 1.4km to 1.8km to the north, east and south. The effects beyond these extents will either be **moderate**, **moderate / minor** or **minor** and **not significant** or there will be **no effect**.

Lincolnshire Wolds AONB

Baseline

- 28.8.32 The Lincolnshire Wolds AONB covers an extensive area to the north-west of the Lincolnshire Node OnSS study area. It extends from the settlements of Caistor and Laceby in the north to Candlesby and Welton le Marsh in the south, and from Market Rasen in the west to Horncastle in the east. It was designated in 1973 following much campaigning and is managed by The Lincolnshire Wolds Countryside Service and Lincolnshire Wolds Joint Advisory Committee (AONB Partnership). A Management Plan 2018-2023 has been produced by this group, which sets out the special qualities of the AONB, identifies the threats to these special qualities, and sets out ways in which these special qualities can be better protected in the future. Table 28.8 sets out these special qualities, along with an assessment of their potential to be affected by the Lincolnshire Node OnSS.
- 28.8.33 The Management Plan makes reference to the Lincolnshire Wolds Landscape Character Assessment (CCP414, 1993) which covers the AONB. It identifies and describes the following key features that make the area special and contribute to its overall 'sense of place':
- *"A rolling upland landscape of strongly cohesive identity."*

- *A pronounced scarp edge to the west comprising rough pasture and scrub, affording fine panoramic views to the Central Lincolnshire Vale.*
- *A combination of elevated plateau and deep-sided valleys.*
- *Large rectilinear fields with wide hedgerows from the late enclosure.*
- *Archaeologically rich, with ancient trackways, deserted villages and burial mounds.*
- *Sparse settlements of small-nucleated villages, often in sheltered valleys and associated with modest country houses and small parklands. The diverse geology gives rise to a variety of building materials.*
- *Broad verges to some roads and tracks providing valuable flower-rich habitats.*
- *Occasional shelterbelts concentrated on steeper-sided valley and scarp slopes emphasising landform.*
- *Broader south-west valleys of the Rivers Lymn and Bain. Associated alder carr woodland and tree-lined watercourses.”*

28.8.34 The south-eastern corner of the AONB, which is covered by the Lincolnshire Node OnSS study area, is characteristic of the wider AONB in that it comprises steep valley sides, albeit on the eastern side of the Wolds and with panoramic views extending across the coastal plain to the east coast. The predominant land-use is arable farmland with large geometric fields and hedgerow enclosure characterising this landscape. Another feature of this area, which isn't listed out in the key characteristics, are the historic halls and their associated designed landscapes, such as Harrington, Dalby and Scremby.

28.8.35 Table 1 of the Management Plan sets out the 20 special qualities of the Lincolnshire Wolds AONB and these are set out in Table 28.8 in relation to their potential to be affected by the Lincolnshire Node OnSS. These special qualities mostly relate to the intrinsic features of the AONB, and, as such, are not susceptible to the effects of the Lincolnshire Node OnSS, as it would be located outwith the designated area and would therefore have only indirect effects through distant visibility. There are, however, three special qualities, namely 'scenic beauty and rural charm', 'expansive sweeping views' and 'peace and tranquillity', which have potential to be affected owing to the indirect effect that the OnSS could have on the wider setting of the AONB. . The effects on these special qualities are assessed below.

Table 28.8 Potential effects on Special Qualities of Lincolnshire Node OnSS

Special Quality	Potential to be affected by Lincolnshire Node OnSS
Scenic beauty and rural charm	While there is the potential for this Special Quality to be affected by the location of the OnSS within the wider setting, the separation distance and limited visibility ensures that the effect will not be significant.
Expansive sweeping views	While there is the potential for this Special Quality to be affected by the location of the OnSS within the wider setting, the separation distance and limited visibility ensures that the effect will not be significant.
Peace and tranquillity	While there is the potential for this Special Quality to be affected by the location of the OnSS within the wider setting, the separation distance and limited visibility ensures that the effect will not be significant.

Special Quality	Potential to be affected by Lincolnshire Node OnSS
Farmed land	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Chalk upland – plateau valley landscape	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Glacial / periglacial features	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Geological qualities	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Calcareous, meadow, pasture and wet grasslands	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Beech clumps	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Woodlands	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Ancient woodlands	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
River streams and ponds	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Hedegrows	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Road verges and green lanes	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Ancient route-ways	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Scheduled Monuments	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Burial mounds and monuments	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Deserted mediaeval villages	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.
Roman villas and settlements	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.

Special Quality	Potential to be affected by Lincolnshire Node OnSS
Literary / artistic	There is no potential for this Special Quality to be affected as it is a physical feature of the AONB and cannot be affected by the indirect visual influence of the OnSS.

Sensitivity

- 28.8.36 The value of the Lincolnshire Wolds AONB is high. This reflects the national level of the AONB landscape planning designation covering this area.
- 28.8.37 The susceptibility of the AONB to the effects of the OnSS is medium. The OnSS will be located outwith the boundary of the AONB with a minimum separation distance of more than 5km, such that it will not have a close-range effect. The medium-high part of the rating relates to the small-scale and rural character of the AONB in which there are very few large-scale developments, thus raising its sensitivity to the introduction of the OnSS. The medium-low part of the rating relates to the fact that the OnSS will be located outwith the AONB and, therefore, will have only indirect and not direct effects on the AONB. Furthermore, there are large-scale developments in the same eastern sector to the AONB as the OnSS, including wind turbines and masts, and these establish energy developments as a feature of the wider baseline context to the AONB and moderate the susceptibility of the AONB to the addition of the OnSS. The medium-high and medium-low components of the rating combine to give an overall medium rating of susceptibility.
- 28.8.38 The combination of the high value and the medium susceptibility gives rise to an overall medium-high sensitivity.

Magnitude of Change

- 28.8.39 During the construction and operational phases, the magnitude of change will be low in those localised parts where visibility will arise and there will be no change across the majority of the AONB where there will be no visibility. The ZTV on Figure 28.18 illustrates the relatively limited extent to which the OnSS will be visible across the AONB. The limited extent of visibility combined with the minimum separation distance of more than 5km means that both the geographical extent of visibility across the AONB and the extent of the OnSS visible from these areas will be limited. While the OnSS will add an additional large-scale energy development in the landscape to the east of the AONB, its effect will be moderated by its relatively low vertical extent which means that it will sit within the broader enclosure of surrounding woodland and tree cover. The effect will also be moderated by the existing influence from the taller structures of the windfarm turbines and masts visible in the same easterly sector.
- 28.8.40 In respect of ‘scenic beauty and rural charm, ‘expansive sweeping views’ and ‘peace and tranquillity’, the effect of the Lincolnshire Node OnSS on these special qualities will be limited chiefly by the separation distance of more than 5 km and the limited extent to which the OnSS will be visible from the AONB. The AONB assessment presented above which identifies a low magnitude of change where visibility arises and no change where there is no visibility, also applies to the three special qualities with potential to be affected.

Significance of Effect

28.8.41 The significance of the effect of the construction and operation of the Lincolnshire Node OnSS on the AONB as a whole and the three special qualities of ‘scenic beauty and rural charm, ‘expansive sweeping views’ and ‘peace and tranquillity’, will be **moderate / minor** and **not significant** where visibility arises and there will be **no effect** across the majority of the AONB where there will be no visibility. The Special Qualities of the AONB and the purposes of this designation would not be significantly affected.

OnSS Weston Marsh North

Preliminary Assessment

28.8.42 The search area for Weston Marsh North lies in the narrow band of land to the immediate east of the A16 and to the immediate west of the River Welland. The location of the indicative Weston Marsh North OnSS is set relatively central within this search area. The following assessment considers the effects of the OnSS on the landscape character of this area. In the absence of any county or district level landscape character assessment, this assessment is based on Natural England’s National Character Area Profiles.

28.8.43 Figure 28.15 illustrates the NCAs in conjunction with the screened ZTV and Figure 28.19 illustrates the landscape designations in conjunction with the screened ZTV. These figures show that the Weston Marsh North OnSS search area and indicative location lie in 46 Fens NCA. Figure 28.15 shows that only this NCA has the potential to be affected by the OnSS and this is assessed in detail below. Figure 28.19 shows that no landscape designations will be affected by the Weston Marsh North OnSS.

The Fens

Baseline

28.8.44 The Fens NCA covers an extensive area of land that extends from Skegness in the north to Cambridge in the south, and from Peterborough in the west to Kings Lynn in the east. The NCA lies to the west of The Wash and largely comprises farmland reclaimed from marshland. The key characteristics, set out in Natural England’s National Character Area Profile 46, are as follows;

- *“Expansive, flat, open, low-lying wetland landscape influenced by the Wash estuary, and offering extensive vistas to level horizons and huge skies throughout, provides a sense of rural remoteness and tranquillity.*
- *Jurassic clays are overlain by rich, fertile calcareous and silty soils over the coastal and central fens and by dark, friable fen peat further inland. The soils are important for agriculture, which is hugely significant for the rural economy in the Fens. There are over 4,000 farms in the Fens; enough wheat is grown here annually to produce a quarter of a million loaves of bread and one million tons of potatoes are grown here. In addition to traditional vegetables, exotics such as pak choi are now cultivated. Some 40 per cent of England’s bulbs and flowers are also produced in the Fens.*

- *The Wash is the largest estuarine system in Britain, supporting internationally important intertidal and coastal habitats influenced by constant processes of accretion and deposition, forming salt marsh and mudflats and providing habitats for wildfowl, wading birds and other wildlife, including grey seals and approximately 90 per cent of the UK's common seals. It also provides important natural sea defences and plays a key role in climate change regulation. Flood storage areas on the Nene, Cam, Lark and Ouse washes also provide significant biodiversity interest. True fen mainly occurs at remnant conservation sites, such as Baston or Wicken Fen.*
- *Overall, woodland cover is sparse, notably a few small woodland blocks, occasional avenues alongside roads, isolated field trees and shelterbelts of poplar, willow and occasionally leylandii hedges around farmsteads, and numerous orchards around Wisbech. Various alders, notably grey alder, are also used in shelterbelts and roadside avenues.*
- *The predominant land use is arable – wheat, root crops, bulbs, vegetables and market gardening made possible by actively draining reclaimed land areas. Associated horticultural glasshouses are a significant feature. Beef cattle graze narrow enclosures along the banks of rivers and dykes and on parts of the salt marsh and sea banks.*
- *Open fields, bounded by a network of drains and the distinctive hierarchy of rivers (some embanked), have a strong influence on the geometric/rectilinear landscape pattern. The structures create local enclosure and a slightly raised landform, which is mirrored in the road network that largely follows the edges of the system of large fields. The drains and ditches are also an important ecological network important for invertebrates, fish including spined loach, and macrophytes.*
- *The area is very rich in geodiversity and archaeology, with sediments containing evidence for past environmental and climate changes and with high potential for well-preserved waterlogged site remains at the fen edge, within some of the infilled palaeo-rivers and beneath the peat.*
- *Large, built structures exhibit a strong vertical visual influence, such as the 83 m-high octagonal tower of 'Boston Stump' (St Botolph's Church), Ely Cathedral on the highest part of the Isle of Ely dominating its surrounding fen, windfarms and other modern large-scale industrial and agricultural buildings, while drainage and flood storage structures and embanked rail and road routes interrupt the horizontal fen plain.*
- *Settlements and isolated farmsteads are mostly located on the modestly elevated 'geological islands' and the low, sinuous roddon banks (infilled ancient watercourses within fens). Elsewhere, villages tend to be dispersed ribbon settlements along the main arterial routes through the settled fens, and scattered farms remain as relics of earlier agricultural settlements. Domestic architecture mostly dates from after 1750 and comprises a mix of late Georgian-style brick houses and 20th century bungalows."*

28.8.45 The local landscape around the OnSS is typical of this description in that it is characterised by flat and low-lying arable farmland that has been reclaimed from marshland. As such, the landscape follows the geometric pattern of the drainage ditches and channelised water courses. There is also very limited woodland cover leaving much of this area appearing open and exposed. While there are no settlements within close proximity of this search area, only farmsteads and dispersed rural properties, there is a concentration of larger settlements to the south with Pinchbeck and Spalding, and the towns of Gosberton to the west and Sutterton to the north. The main features in and around the search area are the busy A16 and the overhead transmission line that crosses this area from the north-west to the south-east.

Sensitivity

28.8.46 The value of The Fens NCA is medium. There are no landscape planning designations covering this NCA which would otherwise denote a special scenic value.

28.8.47 The susceptibility of this NCA to the effects of the OnSS is medium. Although the landscape is predominantly rural, comprising arable farmland and rural settlement, there are also a number of human influences which moderate its susceptibility, most notably the electricity transmission lines which pass through the search area, as well as the reclamation of the landscape and the extent of highly intensive arable farmland. There is also the influence in this LCA from settlements, roads and larger industrial and energy developments to the north of Spalding.

28.8.48 The combination of the medium value and the medium susceptibility gives rise to an overall medium sensitivity.

Magnitude of Change

28.8.49 The magnitude of change across the localised part of the LCA around the OnSS during the construction and operational phases will be high, medium-high, or medium while the magnitude of change on the remaining parts of the LCA will be medium-low, low or with no effect.

28.8.50 As this is a flat and low-lying landscape, the extents of the effects will be largely determined by the location of woodland and tree cover, as well as the earthworks associated with river channels, farmsteads and settlements. The high magnitude of change will extend approximately 0.7km north from the OnSS to Marsh Lane with its hedgerows and intermittent tree cover, approximately 1.0km east to the River Welland with its steep 3 to 4m high embankment, approximately 0.6km west to the A16 with its intermittent tree cover and approximately 1.1km south to Surfleet Bank to the south, also with its intermittent hedgerows and tree cover. In these areas the close-range presence of the OnSS means that it will appear as a large-scale modern development, at variance with the small to medium scale and predominantly rural character of the NCA, despite the presence of the overhead electricity transmission line.

- 28.8.51 The tree cover, hedgerows, river embankment, farmsteads and rural properties, which define this area, also form a partial screen and sense of separation to those parts of the NCA that lie beyond this area. While visibility will typically comprise vertical sections or roof sections of the OnSS seen between or above the screening elements, there may also be instances where openings present much fuller visibility. The magnitude of change will be medium-high or medium in the area which extends out towards Surfleet Seas End approximately 1.6 to 1.8km to the south, out across Wragg Marsh beyond the River Welland approximately 1.5km to the east, out across Sutterton Marsh approximately 1.7km to 1.9km to the north and north-west and out across Gosberton Marsh approximately 2.0km to the west.
- 28.8.52 Beyond these extents, the increased separation distance, which will reduce the perceived scale of the OnSS, and the accumulation of the screening effect of intervening vegetation will reduce the extent of visibility, these factors combining to reduce the magnitude of change to medium-low or low. The limited visibility of the OnSS from these more distant locations and the stronger influence from the close-range baseline landscape will ensure that the OnSS will not form the defining feature in terms of landscape character.

Significance of Effect

- 28.8.53 The overall effect of the construction and operational phases of Weston Marsh North OnSS on The Fens NCA will be **not significant**, owing to the broad extent of the NCA and the limited extent to which the Weston Marsh North OnSS will be visible across it.
- 28.8.54 There will, however, be localised effects that will be **major** and **significant** out to approximately 0.7km to the north, 0.6km to the west, 1.0km to the east and 1.1km to the south. Effects that are **major / moderate** or **moderate** and **significant** will occur beyond these extents out to approximately 1.9km to the north, 2.0km to the west, 1.8km to the south and 1.5km to the east. The effects beyond these extents will either be **moderate**, **moderate / minor** or **minor** and **not significant** or there will be **no effect**.

Weston Marsh South OnSS

- 28.8.55 The search area for Weston Marsh South OnSS lies in an area of land to the immediate east of the River Welland and Macmillan Way and to the west of the B1357 and A17. The location of the indicative Weston Marsh South OnSS is set relatively central within this search area. The following assessment considers the effects of the OnSS on the landscape character of this area. In the absence of any county or district level landscape character assessment, this assessment is based on Natural England's National Character Area Profiles.
- 28.8.56 Figure 28.16 illustrates the NCAs in conjunction with the screened ZTV and Figure 28.20 illustrates the landscape designations in conjunction with the screened ZTV. These figures show that the Weston Marsh North OnSS search area and indicative location lie in 46 Fens NCA. Figure 28.20 shows that only this NCA has the potential to be affected by the OnSS and this is assessed in detail below. Figure 28.20 shows that no landscape designations will be affected by the Weston Marsh North OnSS.

The Fens

Baseline

- 28.8.57 The Fens NCA covers an extensive area of land that extends from Skegness in the north to Cambridge in the south, and from Peterborough in the west to Kings Lynn in the east. The NCA lies to the west of The Wash and largely comprises farmland reclaimed from marshland. The key characteristics, set out in Natural England's National Character Area Profile 46, are listed at paragraph 28.8.44 above.
- 28.8.58 The local landscape around the OnSS is typical of this description in that it is characterised by flat and low-lying arable farmland that has been reclaimed from marshland. As such, the landscape follows the geometric pattern of the drainage ditches and channelised water courses. There is also very limited woodland cover leaving much of this area appearing open and exposed. Older settlement typically occurs as nucleated villages, with larger towns located to the south. Newer settlement occurs typically as linear or dispersed settlements aligning the roads in this area.

Sensitivity

- 28.8.59 The value of The Fens NCA is medium. There are no landscape planning designations covering this NCA which would otherwise denote a special scenic value.
- 28.8.60 The susceptibility of this NCA to the effects of the OnSS is medium-high. The high part of the rating relates to the small-scale and rural character of the LCA in which there are very few large-scale developments, presenting a context in which the OnSs will appear at variance in scale and character. The medium part of the rating relates to the extent to which this LCA has already been modified by human influences, most notably the reclamation of the landscape and the extent of highly intensive arable farmland. There is also the influence in this LCA from settlements, roads and larger industrial and energy developments to the north of Spalding.
- 28.8.61 The combination of the medium value and the medium-high susceptibility gives rise to an overall medium-high sensitivity.

Magnitude of Change

- 28.8.62 The magnitude of change across the localised part of the LCA around the OnSS during the construction and operational phases will be high, medium-high, or medium while the magnitude of change on the remaining parts of the LCA will be medium-low, low or with no effect.

- 28.8.63 As this is a flat and low-lying landscape, the extents of the effects will be largely determined by the location of woodland and tree cover, as well as the earthworks associated with river channels, farmsteads and settlements. The high magnitude of change will extend approximately 1.2km north from the OnSS to Marsh Road with its hedgerows and intermittent tree cover, approximately 1.1km west to the River Welland with its steep 3 to 4m high embankment, approximately 0.7km east to the Lord's Drain with its tree cover and approximately 1.9km south to Stone Gate to the south, also with its intermittent hedgerows and tree cover. In these areas the close-range presence of the OnSS means that it will appear as a large-scale modern development, at variance with the small to medium scale and predominantly rural character of the NCA, despite the presence of the overhead electricity transmission lines.
- 28.8.64 The tree cover, hedgerows, river embankment, farmsteads and rural properties, which define this area, also form a partial screen and sense of separation to those parts of the NCA that lie beyond this area. While visibility will typically comprise vertical sections or roof sections of the OnSS seen between or above the screening elements, there may also be instances where openings present much fuller visibility. The magnitude of change will be medium-high or medium in the area which extends out towards Surfleet Seas End approximately 1.9km to the west, out to the B1357 approximately 2.9km to the east, out across Wragg Marsh to the River Welland approximately 1.9km to the north and out to the north of Weston approximately 2.0km to the south.
- 28.8.65 Beyond these extents, the increased separation distance, which will reduce the perceived scale of the OnSS, and the accumulation of the screening effect of intervening vegetation will reduce the extent of visibility, these factors combining to reduce the magnitude of change to medium-low or low. The limited visibility of the OnSS from these more distant locations and the stronger influence from the close-range baseline landscape will ensure that the OnSS will not form the defining feature in terms of landscape character.

Significance of Effect

- 28.8.66 The overall effect of the construction and operation of Weston Marsh South OnSS on The Fens NCA will be **not significant**, owing to the broad extent of the NCA and the limited extent to which the Weston Marsh South OnSS will be visible across it.
- 28.8.67 There will, however, be localised effects that will be **major** and **significant** out to approximately 0.7km to the east, 1.1km to the west, 1.2km to the north and 1.9km to the south. Effects that are **major / moderate** or **moderate** and **significant** will occur beyond these extents out to approximately 1.8km to the north, 1.9km to the west, 2.6km to the south and 2.9km to the east. The effects beyond these extents will either be **moderate**, **moderate / minor** or **minor** and **not significant** or there will be **no effect**.

28.9 Impact Assessment: Visual Amenity

Introduction

- 28.9.1 Visual receptors within the LVIA study area, including residents, road-users and walkers, are assessed to identify which have potential to be significantly affected by the onshore elements of the Project.

- 28.9.2 In considering the potential effects of the construction of the landfall and onshore ECC on visual receptors, these are likely to be limited in occurrence and extent owing to the following factors. Firstly, the extent of land affected by the construction of the landfall and onshore ECC will be limited to those localised areas of the landfall and the 80m working width of the onshore ECC. Secondly, the construction works will all be at or below ground level with the most visible elements formed by the machinery required for trenchless drilling and cutting trenches. These first two factors combine to ensure that the construction works are relatively small in scale and contained. Thirdly, the construction works associated with the landfall and onshore ECC will occur in landscapes characterised by arable farming, where the disturbance of soil and presence of machinery is a common feature in relation to agricultural land-uses. The construction works will occur on land that is routinely worked by machinery and the construction works will typically not have a sufficient influence to redefine the character of views across these areas of land.
- 28.9.3 Whilst there is potential for some localised significant effects on visual receptors, these will only occur where a special set of conditions arise, typically where the onshore ECC is routed close to settlements, roads or PRoWs and / or where mature tree cover or hedgerow is removed. It should be noted that the occurrence and extent of tree cover and hedgerows is limited, especially in the southern part of Lincolnshire, and therefore this moderates the susceptibility of visual receptors to these potential effects. The PEIR assessment considers an 80m working width to be located somewhere within a 300m wide search area corridor. As potential visual effects will be localised, these can only be assessed in respect of the exact location of the onshore ECC which at PEIR stage has not been determined. The detailed assessment of visual effects, as a result of the construction of the landfall and onshore ECC has, therefore, been deferred until the DCO Application. The effects of the landfall and onshore ECC during the operational phase will be limited to the residual effects relating to tree or hedgerow loss and these will also be considered as part of the DCO Application.
- 28.9.4 This section of the LVIA focusses on the visual effects of the OnSS during the construction and operational phases. The visual effects of the landfall, onshore ECC and OnSS during the decommissioning phase will be the same or less than those identified during the construction phase, as described at section 28.10 and are therefore not assessed in detail in this assessment.

The assessment of effects on visual amenity considers the impacts associated with the indicative OnSS location at all three of the potential search areas; namely Lincolnshire Node, Weston Marsh North and Weston Marsh South. Four or five viewpoints have been selected to represent the potential effects on visual amenity associated with the three indicative OnSS locations. The assessment of these viewpoints is presented below and the viewpoint locations are shown on Figure 28.26 (Lincolnshire Node), Figure 28.27 (Weston Marsh North) and Figure 28.28 (Weston Marsh South).

28.9.5 Table 28.9 sets out the figure references for the viewpoint visualisations.

Table 28.9 Viewpoint Visualisations Figure References

Receptor		Existing	Proposed Substation	Proposed Substation with Mitigation Planting (15 years growth)
Lincolnshire Node OnSS				
LN1	Asserby Road	28.32a	28.32b	28.32c
LN2	Mill Lane	28.33a	28.33b	28.33c
LN3	Alford Road	28.34a	28.34b	28.34c
LN4	Bilsby	28.35a	28.35b	28.35c
Weston Marsh North OnSS				
WMN1	Marsh Lane Manor House	28.36a	28.36b	28.326c
WMN2	A16 near Marsh Lane junction	28.37a	28.37b	28.37c
WMN3	A16 near Gosberton Bank junction	28.38a	28.38b	28.38c
WMN4	Macmillan Way near Ship Inn	28.39a	28.39b	28.39c
WMN5	Macmillan Way near Welland House	28.40a	28.40b	28.40c
Weston Marsh South OnSS				
WMS1	Marsh Road near Crowtree Farm	28.41a	28.41b	28.41c
WMS2	Marsh Road near Kindergarten Nursery	28.42a	28.42b	28.42c
WMS3	B1357 near Loosegate	28.43a	28.43b	28.43c
WMS4	Carrington Road south	28.44a	28.44b	28.44c
WMS5	Common Road north	28.45a	28.45b	28.45c

OnSS Lincolnshire Node

Introduction

28.9.6 The Lincolnshire Node OnSS search area is located approximately 4.2km to the north-west of the town of Alford and 1.3km to the east of the village of Huttoft in the area covered by East Lindsey District Council. The indicative OnSS location has been set relatively centrally in the search area to represent both a worst case and realistic scenario. The indicative layout for the Lincolnshire Node OnSS is shown on Figure 28.26 and the indicative layout for the mitigation planting is shown on Figure 28.29.

Viewpoint 1: Asserby Road

Baseline

28.9.7 This viewpoint is located on the minor road that connects the A1111 in the west and the A52 in the east. It provides access to a small number of farmsteads and rural properties, with the cluster to the west of Willow Farm referred to as Asserby. This viewpoint is located to the west of Asserby and looks south-east through a gap in the road-side hedgerow towards the Lincolnshire Node search area. The view is representative of the views of residents in this local area and road-users on this local road.

28.9.8 The view looks across a relatively flat and low-lying landscape, characterised by medium sized arable fields with some enclosure from hedgerows and tree cover. There are no focal features other than the pole mounted transmission line that extends across the middle range of the view. While there is no other readily visible built development in the southerly sector of the view, to the north there is a rural property and the small settlement of Markby in the distance. Overall, this is a view of a heavily modified farmed landscape with farmsteads comprising large sheds, albeit with a predominantly rural character.

Sensitivity

28.9.9 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

28.9.10 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with properties have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by the large farm sheds and mature vegetation which potentially restricts their views out.

28.9.11 The susceptibility of road-users is medium. There is the potential that views from the minor road have the potential to be affected by the OnSS and although the generally open character of the farmland will give rise to visibility, this will be moderated in parts by the enclosure of buildings, high hedgerows and trees. The susceptibility of road-users is moderated by the transitory nature and short duration of their views and the extent of road-side enclosure.

28.9.12 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.13 The magnitude of change during the construction phase will be high. This rating relates to a combination of the proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within this local area and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the south of these visual receptors. The magnitude of change will be moderated to some extent by the enclosure formed by trees, hedgerows and buildings, although the proximity of properties and the minor road means that even partly screened visibility will still have a notable effect.
- 28.9.14 The magnitude of change during the operational phase will be high. The photomontage in Volume 2, Appendix 28.1, Figure 28.32b shows a 3D representation of the extents of the OnSS. The change will relate to the presence of the OnSS which will be located a minimum distance of 0.5 km from the viewpoint. While the intervening tree cover will screen a notable part of the OnSS from this viewpoint, it is likely to be more fully visible from the road and properties to the east. It will be seen as a large-scale structure that will form a notable feature in the southerly sector of the view, owing to its industrial character relative to the smaller scale and predominantly rural character of the agricultural landscape. The OnSS will have a notable effect on the views of road-users on Asserby Road and local residents with open aspects in this southerly direction.
- 28.9.15 The magnitude of change following 15 years growth on mitigation planting will reduce to medium. The photomontage in Volume 2, Appendix 28.1, Figure 28.32c shows that mitigation planting will screen the OnSS with the exception of the upper parts of the electrical infrastructure which will remain visible. It is also anticipated that visibility further west on Asserby Road will be fuller without the screening effect of the closer range existing planting. This means that despite the screening of the mitigation planting, the OnSS will remain as the defining feature in views from this area, owing to its close proximity and contrasting character and scale relative to the rural context.

Significance of Effect

- 28.9.16 The effect of the OnSS on residents and road-users associated with Asserby Road is considered to be of a high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The significance of the residual effect is, therefore, concluded to be major or **major / moderate**, which is **significant** in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.17 The effect will gradually reduce to a **moderate** level after an approximate 15 year period, during which mitigation planting will grow to partially screen visibility of the OnSS. The effect will remain **significant**.

Viewpoint 2: Mill Lane

Baseline

- 28.9.18 This viewpoint is located at the western end of Mill Lane, which extends west from the A52, at a point to the north of the village of Huttoft. While there is some hedgerow and tree cover along Mill Lane, views of walkers and road-users are relatively open. The view is taken from the bridge over the Boy Grift Drain and is representative of the views of walkers on this public access way as well as the small number of road-users and residents on Mill Lane, as well as the slightly more distant Crawcroft Lane.
- 28.9.19 This view looks south-west across an open farmed landscape towards the Lincolnshire Node search area. The landscape is relatively flat and low-lying, characterised by medium sized arable fields with some enclosure from hedgerows and tree cover across the middle range. There are no focal features other than the engineered drainage channel that extends to the north and south from the viewpoint. The influence of built development is limited to the small number of farmsteads and rural properties located at Asserby and along Crawcroft Lane to the north. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

- 28.9.20 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.21 The susceptibility of walkers is high. While there is some enclosure along Mill Lane from hedgerows and trees, there are also long open sections from which views of the surrounding landscape are largely uninterrupted. Although the views of walkers will be of a relatively short duration, they will typically have a heightened awareness of their surroundings that will raise their susceptibility.
- 28.9.22 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties on Mill Lane and Crawcroft Lane have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by farm sheds and vegetation which potentially restricts their views out.
- 28.9.23 The susceptibility of road-users is medium. There is the potential that views from Mill Lane and Crawcroft Lane have the potential to be affected by the OnSS and although the generally open character of the farmland will give rise to visibility, this will be moderated in parts by the enclosure of buildings, hedgerows and trees. The susceptibility of road-users is moderated by the short-term and transitory nature of their views, and the extent of road-side enclosure.
- 28.9.24 The combination of the medium value and the medium-high susceptibility of walkers and residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.25 The magnitude of change during the construction phase will be medium-high. This rating relates to a combination of the relative proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the south-west of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the partial screening by intervening mature tree cover and the extent to which this landscape has been modified by agricultural practices.
- 28.9.26 The magnitude of change during the operational phase will be medium-high. The photomontage in Volume 2, Appendix 28.1, Figure 28.33b shows a 3D representation of the extents of the OnSS. The change will relate to the presence of the OnSS which will be located a minimum distance of approximately 1.4 km from the viewpoint. Although the separation distance moderates the perceived scale of the OnSS as seen from this area and the intervening mature tree cover screens a substantial part of the OnSS, it is the contrast that this type of development presents relative to the rural and small scale character of the agricultural landscape that will make it the defining feature. Consideration has also been given to the fact that visibility of the OnSS will be fuller during the winter months when the intervening trees are not in leaf and also from other parts of this north-eastern sector to the OnSS where they do not form an intervening feature.
- 28.9.27 The magnitude of change after an approximate 15 year period will reduce to medium. This takes into account the partial screening effect of proposed mitigation planting on the north-east side of the OnSS, which will screen visibility of the lower parts of the OnSS, albeit with the upper parts remaining visible, as shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.33c. While the OnSS will not be fully screened, the partial screening combined with the visual integration that the mitigation planting forms with the local landscape helps to reduce its prominence and prevent it from forming the defining feature.

Significance of Effect

- 28.9.28 The effect of the OnSS is considered to be of a medium-high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be at a **major / moderate** or **moderate** level during both the construction and operational phases, which is significant in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.29 The significant effect will gradually reduce to a **not significant** effect at a **moderate** level after an approximate 15 year period during which mitigation planting will grow to partly screen visibility of the OnSS.

Viewpoint 3: Alford Road

Baseline

- 28.9.30 This viewpoint is located on Alford Road, which connects Huttoft and the A52 to the east, with Thurlby and the B1159 to the south-west. The view is taken from a point to the west of the dismantled railway line and is representative of road-users on this road as well as the small number of residents on the western edge of Huttoft and in the rural area beyond. While there is enclosure from tree cover and hedgerows at the eastern and southern ends of the road, the central section is open, and it is in this section that the viewpoint is located.
- 28.9.31 This view looks north-west across an open farmed landscape towards the Lincolnshire Node search area. Although the local landscape is generally flat and low-lying, from Alford Road, there is a slight rise to the north which restricts the extent of the view to the foreground, with the middle ground screened. The view is characterised by the large arable field that occupies the foreground, although there is some enclosure from hedgerows and tree cover on the south-side of the road and in the wider landscape to the west and east. While tree cover largely screens the built development of Huttoft, and other development is not evident, there is the influence from the scrap yard on the southern side of the road, albeit largely screened by tree cover. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

- 28.9.32 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.33 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the properties on the western edge of Huttoft have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by vegetation which potentially restricts their views out.
- 28.9.34 The susceptibility of road-users is medium. There is the potential that views from Alford Road have the potential to be affected by the OnSS and although the generally open character of the farmland will give rise to visibility, this will be moderated in parts by the enclosure of buildings, hedgerows and trees. The susceptibility of road-users is moderated by the short-term and transitory nature of their views, and the extent of road-side enclosure.
- 28.9.35 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.36 The magnitude of change during the construction phase will be medium-high. This rating relates to a combination of the relative proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the south-west of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the partial screening by intervening mature tree cover and the extent to which this landscape has been modified by agricultural practices.
- 28.9.37 The magnitude of change during the operational phase will be medium-high. The photomontage in Volume 2, Appendix 28.1, Figure 28.33b shows a 3D representation of the extents of the OnSS. The change will relate to the presence of the OnSS which will be located a minimum distance of approximately 1.4 km from the viewpoint. Although the separation distance moderates the perceived scale of the OnSS as seen from this area and the intervening mature tree cover screens a substantial part of the OnSS, it is the contrast that this type of development presents relative to the rural and small scale character of the agricultural landscape that will make it the defining feature. Consideration has also been given to the fact that visibility of the OnSS will be fuller during the winter months when the intervening trees are not in leaf and also from other parts of this north-eastern sector to the OnSS where they do not form an intervening feature.
- 28.9.38 The magnitude of change after an approximate 15 year period will reduce to medium. This takes into account the partial screening effect of proposed mitigation planting on the north-east side of the OnSS, which will screen visibility of the lower parts of the OnSS, albeit with the upper parts remaining visible, as shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.33c. While the OnSS will not be fully screened, the partial screening combined with the visual integration that the mitigation planting forms with the local landscape helps to reduce its prominence and prevent it from featuring as the defining feature.

Significance of Effect

- 28.9.39 The effect of the OnSS is considered to be of a medium-high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be at a **major / moderate** or **moderate** level during both the construction and operational phases, which is significant in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.40 The significant effect will gradually reduce to a **not significant** effect at a **moderate** level after an approximate 15 year period during which mitigation planting will grow to partly screen visibility of the OnSS.

Viewpoint 4: Bilsby

Baseline

- 28.9.41 This viewpoint is located on the northern side of Bilsby, adjacent to the A1111 which connects Sutton-on-Sea in the north-east with Alford in the south-west. The view is representative of road-users on the A1111 and of residents on the northern and eastern edges of Bilsby. Views from the centre of this small settlement are enclosed by the built development and tree cover it contains, and it is only on the outer edges that there is potential for views to open up across the surrounding landscape, although these views are also often limited by the enclosure of vegetation and other buildings. While road-side planting along the A1111 largely contains the views of road-users, there are open sections where views extend out to the east, where the Lincolnshire Node search area is located.
- 28.9.42 This view looks east across an open farmed landscape towards the Lincolnshire Node search area. The landscape is generally flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover along the A1111 and property to the south, and where they form field boundaries across the middle and distant ranges of the view. Built development is largely concealed by tree cover despite the proximity of the viewpoint to the northern side of Bilsby. The only other development evident in the wider landscape is a pole mounted transmission line that runs across the middle range from north to south. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

- 28.9.43 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.44 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties on the northern and eastern edges of Bilsby have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by vegetation, which may restrict their views out.
- 28.9.45 The susceptibility of road-users is medium. There is the potential that views from the A1111 have the potential to be affected by the OnSS, especially in the open section to the north of Bilsby and intermittently open sections towards the village of Markby. The susceptibility of road-users is moderated by the short-term and transitory nature of their views and the extent of road-side enclosure from vegetation along parts of the A1111.
- 28.9.46 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.47 The magnitude of change during the construction phase will be medium. This rating relates to a combination of the relative proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within the landscape to the east of the viewpoint, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the east of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the extent to which this landscape has been modified by agricultural practices, the partial screening by intervening mature tree cover, hedgerows and buildings, and the separation distance of approximately 1.3 km.
- 28.9.48 The magnitude of change during the operational phase will be medium. The photomontage in Volume 2, Appendix 28.1, Figure 28.36b shows a 3D representation of the extents of the OnSS. The change will relate to the presence of the OnSS which will be located a minimum distance of approximately 1.3 km from the viewpoint. Although the separation distance moderates the perceived scale of the OnSS as seen from this area and the intervening mature tree cover screens a substantial part of the OnSS, it is the contrast that this type of development presents relative to the rural and small scale character of the agricultural landscape that will make it the defining feature. Consideration has also been given to the fact that visibility of the OnSS will be fuller during the winter months when the intervening trees and hedgerows are not in leaf.
- 28.9.49 As shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.36c, the mitigation planting after an approximate 15 year period of growth will not be readily visible from this viewpoint owing to its location to the rear of the intervening mature tree cover and hedgerows and, therefore, will not alter the magnitude of change rating of medium.

Significance of Effect

- 28.9.50 The effect of the OnSS is considered to be of a medium magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be at a **moderate** level during both the construction and operational phases, which is **significant** in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.51 The significant effect will not be reduced by mitigation planting owing to its location to the rear of the intervening mature tree cover and hedgerows and therefore will remain **moderate** and **significant** after 15 years of growth.

OnSS Weston Marsh North

Introduction

28.9.52 The Weston Marsh North OnSS search area is located in the area of land to the east of the A16 and the west of the River Welland in the area covered by South Holland District Council. The indicative OnSS location has been set relatively centrally in the search area to represent both a worst case and realistic scenario. The indicative layout for the Weston Marsh North OnSS is shown on Figure 28.27 and the indicative layout for the mitigation planting is shown on Figure 28.30.

Viewpoint 1: Marsh Lane near Manor House

Baseline

28.9.53 This viewpoint is located near Manor House on Marsh Lane, which extends east from the A16. The view is representative of road-users on Marsh Lane and the small number of residents in this rural area. Views from Marsh Lane are mostly enclosed by hedgerows although with some notable open sections from which views extend across the open farmland to the south. Marsh Lane provides access to a small number of farmsteads and rural properties and although most are fairly well enclosed by mature vegetation, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces.

28.9.54 This view looks south-west across an open farmed landscape towards the Weston Marsh North search area. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, in the close range, along Marsh Lane and in the middle range along more distant field boundaries. Built development is evident in the form of an overhead electricity transmission line seen to the south, and the small number of rural properties occurring intermittently, as well as the noise of traffic on the A16 to the west. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

28.9.55 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

28.9.56 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by mature trees and hedgerows which potentially restricts their views out.

28.9.57 The susceptibility of road-users is medium. There is the potential that views from Marsh Lane have the potential to be affected by the OnSS, especially in the open sections between the enclosure of the road-side hedgerow. The susceptibility of road-users is moderated by the transitory nature of their views and the extent of road-side enclosure along this route.

28.9.58 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

28.9.59 The magnitude of change during the construction phase will be medium-high. This rating relates to a combination of the proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the south-west of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the presence of the overhead electricity transmission line and the extent to which this landscape has been modified by agricultural practices.

28.9.60 The magnitude of change during the operational phase will be medium-high. The photomontage in Volume 2, Appendix 28.1, Figure 28.37b shows a 3D representation of the extents of the OnSS, with the full extents being visible. The openness of the view combined with the absence of intervening landform or vegetation, means that despite the separation distance of 1.4 km, the OnSS will present a new and defining feature that will appear prominent in this view. Although the presence of the overhead electricity transmission line, the medium scale of the fields and heavily modified state of the agricultural land will moderate the effect of the OnSS to some extent, the contrast between the large scale and industrial character of the OnSS compared to the relatively rural character of the baseline context, will be notable.

28.9.61 As shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.37c, the mitigation planting will not screen the OnSS in views from this north-easterly direction. This is because the onshore cables will enter the OnSS from this direction and tree planting over these cables will not be permitted. During the approximate 15 year period of growth, the mitigation planting will, therefore, not alter the medium-high magnitude of change.

Significance of Effect

28.9.62 The effect of the OnSS is considered to be of a medium-high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **major / moderate** or **moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.

28.9.63 There will be no change to the assessment of a **major / moderate** or **moderate**, level and a **significant** effect following an approximate 15 year period of growth of the mitigation planting, as it will not screen the OnSS.

Viewpoint 2: A16 near Marsh Lane junction

Baseline

- 28.9.64 This viewpoint is located on the A16, where the junction east to Marsh Lane occurs. The view is representative of road-users on the A16 and the small number of residents in this rural area. In the section of the A16 to the north of the viewpoint, the views of road-users are largely contained by dense roadside planting on the eastern side, albeit relatively open on the western side. To the south of the viewpoint, roadside planting on the eastern side is more intermittent, such that views open up along notable sections from where the Weston Marsh North search area is visible. The A16 is the main road between Grimsby in the north and Peterborough in the south and, as such, experiences fairly heavy traffic flows. The roads off the A16 provide access to a small number of farmsteads and rural properties and although most of these are fairly well enclosed by vegetation, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces.
- 28.9.65 This view looks south-east across an open farmed landscape towards the Weston Marsh North search area. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover in the close range along the A16 and Marsh Lane, and in the middle range along more distant field boundaries. Built development is evident in the form of an overhead electricity transmission line seen to the south-east, and the small number of farmsteads and rural properties occurring intermittently, as well as the presence and noise of traffic on the A16 to the immediate west. Overall, this is a view of a heavily modified farmed landscape, with a rural character that is influenced by the presence of the A16 and the overhead electricity transmission line.

Sensitivity

- 28.9.66 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.67 The susceptibility of road-users is medium. There is the potential that views from the A16 have the potential to be affected by the OnSS, especially in the long open sections to the south of the viewpoint where the views of south-bound road-users open up towards the Weston Marsh north search area. The susceptibility of road-users is moderated by the short-term and transitory nature of their views, the speed of traffic and busyness of this main road, and the extent of road-side enclosure along parts of this road.
- 28.9.68 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by trees and hedgerows which potentially restricts their views out.
- 28.9.69 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.70 The magnitude of change during the construction phase will be medium-high. This rating relates to a combination of the proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the south-east of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the presence of the overhead electricity transmission line and the extent to which this landscape has been modified by agricultural practices.
- 28.9.71 The magnitude of change during the operational phase will be medium-high. The photomontage in Volume 2, Appendix 28.1, Figure 28.38b shows a 3D representation of the extents of the OnSS, with the full extents being visible. The openness of the view combined with the absence of intervening landform or vegetation, means that despite the separation distance of 1.1 km, the OnSS will present a new and defining feature that will appear prominent in this view. Although the presence of the overhead electricity transmission line, the medium scale of the fields and heavily modified state of the agricultural land will moderate the effect of the OnSS to some extent, the contrast between the large scale and industrial character of the OnSS compared to the relatively rural character of the baseline context, will be notable.
- 28.9.72 The magnitude of change after an approximate 15 year period will reduce to medium-low. This takes into account the partial screening effect of proposed mitigation planting on the north-west side of the OnSS, which will screen visibility of the lower parts of the OnSS, albeit with the upper parts remaining visible, as shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.38c. While the OnSS will not be fully screened, the partial screening combined with the visual integration that the mitigation planting forms with the local landscape helps to reduce its prominence and prevent it from forming the defining feature.

Significance of Effect

- 28.9.73 The effect of the OnSS is considered to be of a medium-high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **major / moderate** or **moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.74 The significant effect will gradually reduce to a **not significant** effect at a **moderate** or **moderate / minor** level after an approximate 15 year period during which mitigation planting will grow to partly screen visibility of the OnSS.

Viewpoint 3: A16 at Surfleet Bank junction

Baseline

- 28.9.75 This viewpoint is located on the A16, where the junction east to Surfleet Bank and west to Gosberton Banks occurs. The view is representative of road-users on the A16 and the small number of residents in this rural area. In the section of the A16 to the north of the viewpoint, the views of road-users are largely open owing to the intermittent occurrence of roadside planting on the eastern side. To the south of the viewpoint, there is an industrial development and other farmsteads that restrict the extent of views eastwards and then further south, roadside planting on the eastern side reduces the extent of views to shorter open sections. The A16 is the main road between Grimsby in the north and Peterborough in the south and, as such, experiences fairly heavy traffic flows. The roads off the A16 provide access to a small number of farmsteads and rural properties and although most of these are fairly well enclosed by mature vegetation, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces.
- 28.9.76 This view looks east across an open farmed landscape towards the Weston Marsh North search area. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, in the close range, along the A16 and Surfleet Bank, and in the middle range along more distant field boundaries. Built development is evident in the form of an overhead electricity transmission line seen to the north and extending east, and the small number of farmsteads and rural properties occurring intermittently, as well as the presence and noise of traffic on the A16 to the immediate west. Overall, this is a view of a heavily modified farmed landscape, with a rural character that is influenced by the presence of the A16 and the overhead electricity transmission lines.

Sensitivity

- 28.9.77 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.78 The susceptibility of road-users is medium. There is the potential that views from the A16 have the potential to be affected by the OnSS, especially in the long open sections to the north of the viewpoint where the views of road-users open up obliquely towards the Weston Marsh North search area. The susceptibility of road-users is moderated by the short-term and transitory nature of their views, the speed of traffic and busyness of this main road, and the extent of road-side enclosure along parts of this road.
- 28.9.79 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by trees and hedgerows which potentially restricts their views out.
- 28.9.80 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.81 The magnitude of change during the construction phase will be high. This rating relates to a combination of the proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the east of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the presence of the overhead electricity transmission lines and the extent to which this landscape has been modified by agricultural practices.
- 28.9.82 The magnitude of change during the operational phase will be high. The photomontage in Volume 2, Appendix 28.1, Figure 28.39b shows a 3D representation of the extents of the OnSS, with the full extents readily visible. The openness of the view combined with the absence of intervening landform or vegetation, means that despite the separation distance of 0.7 km, the OnSS will present a new and defining feature that will appear especially prominent in this view. Although the roadside vegetation along the A16 will form an effective screen of the OnSS, from the opening at the Surfleet Bank junction and the open road that extends east, the OnSS will form an especially close range and large scale feature. It is in this context that the presence of the overhead electricity transmission line, the medium scale of the fields and heavily modified state of the agricultural land will do little to moderate the effect of the OnSS, which will form the clear focus and defining feature of the view.
- 28.9.83 The magnitude of change after an approximate 15 year period will reduce to medium. This takes into account the partial screening that the proposed mitigation planting will provide on the south-west side of the OnSS. This will screen visibility of the lower parts of the OnSS, albeit with the upper parts remaining visible, as shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.39c. While the mitigation planting will provide partial screening and some degree visual integration with the local landscape, the close proximity of the OnSS will ensure it remains the defining feature of the view.

Significance of Effect

- 28.9.84 The effect of the OnSS is considered to be of a high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **major** or **major / moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.85 While the high magnitude of change will reduce to medium during the approximate 15 year period during which mitigation planting will grow, the effect will remain **significant**, albeit reduced to a **moderate** level.

Viewpoint 4: Macmillan Way at Surfleet Bank

Baseline

- 28.9.86 This viewpoint is located on the Macmillan Way, which follows the raised embankment on the western shore of the River Welland. It is located close to the Ship Inn on the northern side of the settlement named Surfleet Seas End. The view is representative of walkers on the Macmillan Way from where an elevated view extends out across the surrounding landscape. The view is also representative of the views of lower-lying road-users on the minor roads in this area and residents on the northern side of Surfleet Seas End and other properties in the local rural area.
- 28.9.87 This view looks north across an open farmed landscape towards the Weston Marsh North search area. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, visible along field boundaries in the middle and distant ranges. Built development is evident in the form of an overhead electricity transmission line seen to the north and routed north-west to south-east, and the small number of farmsteads and rural properties occurring intermittently. Human influences are also evident in the straight channel of the River Welland and the engineered embankments on either side. Overall, this is a view of a heavily modified farmed landscape, with a rural character that is influenced by the presence of the channelised water course and the overhead electricity transmission lines.

Sensitivity

- 28.9.88 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.89 The susceptibility of walkers is high. The path is situated along the top of the embankment where there is very little enclosing vegetation, with the result that walkers experience elevated and unobstructed views of the surrounding landscape. Although the views of walkers will be of a relatively short duration, they will typically have a heightened awareness of their surroundings that raises their susceptibility.
- 28.9.90 The susceptibility of road-users is medium. There is the potential that views from the minor roads in this area have the potential to be affected by the OnSS, especially from the long open sections of Marsh Drove, to the north of the viewpoint where the views of road-users open up towards the Weston Marsh North search area. The susceptibility of road-users is moderated by the transitory nature of their views, and the extent of road-side enclosure from embankments and vegetation along Surfleet Bank.
- 28.9.91 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by other buildings and vegetation which may restrict their views out.
- 28.9.92 The combination of the medium value and the high susceptibility of walkers gives rise to a medium-high sensitivity. The sensitivity of residents will also be medium-high and the sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.93 The magnitude of change during the construction phase will be high. This rating relates to a combination of the relative proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the north of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the presence of the overhead electricity transmission lines and the extent to which this landscape has been modified by agricultural practices and other human influences.
- 28.9.94 The magnitude of change during the operational phase will be high. The photomontage in Volume 2, Appendix 28.1, Figure 28.40b shows a 3D representation of the extents of the OnSS, with the full extents readily visible. The openness of the view combined with the limited presence of intervening vegetation, means that despite the separation distance of 0.7 km, the OnSS will present a new and defining feature that will appear especially prominent in this view. There is very little enclosure from vegetation along Macmillan Way and as such, clear views of the OnSS will be experienced from the section between Surfleet Seas End and Fosdyke Bridge, although the viewpoint represents a closer view than these more distant parts. The OnSS will form an especially close range and large scale feature. It is in this context that the presence of the overhead electricity transmission line, the medium scale of the fields and heavily modified state of the agricultural land will do little to moderate the effect of the OnSS, which will form the clear focus and defining feature of the view.
- 28.9.95 The magnitude of change after an approximate 15 year period will remain high. While the mitigation planting will screen part of the south-west aspect of the OnSS, the south-east aspect will remain exposed in views from this direction, as shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.40c. While the mitigation planting will provide partial screening and some degree of visual integration with the local landscape, the close proximity of the OnSS and its exposed south-eastern aspect will ensure it remains the defining feature of the view.

Significance of Effect

- 28.9.96 The effect of the OnSS is considered to be of a high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **major** or **major / moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.97 The high magnitude of change will remain high during the approximate 15 year period during which mitigation planting will grow, and, therefore, the effect will remain **significant**, at a **major** or **major / moderate** level.

Viewpoint 5: Macmillan Way near Welland House Farm

Baseline

- 28.9.98 This viewpoint is located on the Macmillan Way, which follows the raised embankment on the western shore of the River Welland. It is located to the south of Welland House Farm, from where the open and elevated track extends to both the south-west and north-east. The view is representative of walkers on the Macmillan Way from where an elevated view extends out across the surrounding landscape. The view is also representative of the views of lower-lying road-users on the minor roads in this area and residents in the local farmsteads and other properties in the local rural area.
- 28.9.99 This view looks west across an open farmed landscape towards the Weston Marsh North search area. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, visible along field boundaries in the middle and distant ranges. Built development is evident in the form of an overhead electricity transmission line seen to the west and routed north-west to south-east, and the small number of farmsteads and rural properties occurring intermittently. Human influences are also evident in the straight channel of the River Welland and the engineered embankments on either side. Overall, this is a view of a heavily modified farmed landscape, with a rural character that is influenced by the presence of the channelised water course and the overhead electricity transmission lines.

Sensitivity

- 28.9.100 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.101 The susceptibility of walkers is high. The path is situated along the top of the embankment where there is very little enclosing vegetation, with the result that walkers experience elevated and unobstructed views of the surrounding landscape. Although the views of walkers will be of a relatively short duration, they will typically have a heightened awareness of their surroundings that raises their susceptibility.
- 28.9.102 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by mature trees and hedgerows which may restrict their views out.
- 28.9.103 The susceptibility of road-users is medium. There is the potential that views from the minor roads in this area have the potential to be affected by the OnSS, especially from the long open sections of Marsh Drove, to the south-east of the viewpoint where the views of road-users are open towards the Weston Marsh North search area. The susceptibility of road-users is, however, moderated by the short-term and transitory nature of their views.
- 28.9.104 The combination of the medium value and the high susceptibility of walkers gives rise to a medium-high sensitivity. The sensitivity of residents will also be medium-high and the sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.105 The magnitude of change during the construction phase will be high. This rating relates to a combination of the relative proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the west of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the presence of the overhead electricity transmission line and the extent to which this landscape has been modified by agricultural practices and other human influences.
- 28.9.106 The magnitude of change during the operational phase will be high. The photomontage in Volume 2, Appendix 28.1, Figure 28.41b shows a 3D representation of the extents of the OnSS, with the full extents readily visible. The openness of the view combined with the limited presence of intervening vegetation, means that despite the separation distance of 1.0 km, the OnSS will present a new and defining feature that will appear especially prominent in this view. There is very little enclosure from vegetation along Macmillan Way and as such, clear views of the OnSS will be experienced from the section between Surfleet Seas End and Fosdyke Bridge, although the viewpoint represents a closer view than these more distant parts. The OnSS will form an especially close range and large scale feature. It is in this context that the presence of the overhead electricity transmission line, the medium scale of the fields and heavily modified state of the agricultural land will do little to moderate the effect of the OnSS, which will form the clear focus and defining feature of the view.
- 28.9.107 The magnitude of change after an approximate 15 year period will reduce to medium-high. While the mitigation planting will screen the north-east aspect of the OnSS, the south-east aspect will remain exposed in views from this direction, as shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.41c. While the mitigation planting will provide partial screening and some degree of visual integration with the local landscape, the close proximity of the OnSS and its exposed south-eastern aspect will ensure it remains the defining feature of the view.

Significance of Effect

- 28.9.108 The effect of the OnSS is considered to be of a high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **major** or **major / moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.109 The magnitude of change will reduce to **medium-high** during the approximate 15 year period during which mitigation planting will grow, and, therefore, the effect will remain **significant**, at a **major / moderate** or **moderate** level.

OnSS Weston Marsh South

Introduction

28.9.110 The Weston Marsh South OnSS search area is located in the area of land to the west of the River Welland and to the east of the A17 and B1357 in an area covered by South Holland District Council. The indicative OnSS location has been set relatively centrally in the search area to represent both a worst case and realistic scenario. The indicative layout for the Weston Marsh South OnSS is shown on Figure 28.28 and the indicative layout for the mitigation planting is shown on Figure 28.31.

Viewpoint 1: Marsh Road near Crowtree Farm

Baseline

28.9.111 This viewpoint is located near Crowtree Farm on Marsh Road, which extends north from the northern edge of Spalding to access the farmsteads in this area. The view is representative of road-users on Marsh Road and the small number of residents in this rural area. Views from Marsh Road are mostly open with only very localised sections of hedgerow and tree cover forming enclosure. Marsh Road provides access to a small number of farmsteads and rural properties and although some are fairly well enclosed by mature vegetation, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces.

28.9.112 This view looks south across an open farmed landscape towards the Weston Marsh South search area. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, around properties in the close-range and along field boundaries in the middle to distant ranges. Built development is evident in the form of an overhead electricity transmission line seen crossing the view from the north-west to south-east, and the small number of rural properties occurring intermittently. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

28.9.113 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

28.9.114 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around many of the properties by mature trees and hedgerows which may restrict their views out.

28.9.115 The susceptibility of road-users is medium. There is the potential that views from Marsh Road have the potential to be affected by the OnSS, especially along the many open sections. The susceptibility of road-users is moderated by the short-term and transitory nature of their views and the baseline influence from the existing electricity transmission line.

28.9.116 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

28.9.117 The magnitude of change during the construction phase will be high. This rating relates to a combination of the proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the south of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the extent to which this landscape has been modified by the presence of the overhead electricity transmission lines and the intensive agricultural practices.

28.9.118 The magnitude of change during the operational phase will be high. The photomontage in Volume 2, Appendix 28.1, Figure 28.42b shows a 3D representation of the extents of the OnSS, with the full extents readily visible. The openness of the view combined with the absence of intervening landform or vegetation, means that at a minimum of approximately 0.5 km, the OnSS will present a new and defining feature that will appear especially prominent in this view. The openness that characterises this view is typical of the openness experienced along much of the length of Marsh Road. It is in this context that the presence of the overhead electricity transmission line, the medium scale of the fields and heavily modified state of the agricultural land will do little to moderate the effect of the OnSS, which will form the clear focus and defining feature of the view and the views of associated visual receptors.

28.9.119 The magnitude of change after an approximate 15 year period will reduce to medium. This takes into account the partial screening that the proposed mitigation planting will provide on the north-west side of the OnSS. This will screen visibility of the lower parts of the OnSS, albeit with the upper parts remaining visible, as shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.42c. While the mitigation planting will provide partial screening and some degree of visual integration with the local landscape, the close proximity of the OnSS will ensure it remains the defining feature of the view.

Significance of Effect

28.9.120 The effect of the OnSS is considered to be of a high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **major** or **major / moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.

28.9.121 While the high magnitude of change will reduce to medium during the approximate 15 year period during which mitigation planting will grow, the effect will remain **significant**, albeit reduced to a **moderate** level.

Viewpoint 2: Marsh Road near Kindergarten Nursery

Baseline

- 28.9.122 This viewpoint is located near Kindergarten Plants on Marsh Road, which extends north from the northern edge of Spalding to access the farmsteads in this area. The view is representative of road-users on Marsh Road and the small number of residents in this rural area. Views from Marsh Road are mostly open with only very localised sections of hedgerow and tree cover forming enclosure. Marsh Road provides access to a small number of farmsteads and rural properties and although there are some sections of hedgerow along the roadside, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces of these rural properties.
- 28.9.123 This view looks north-east across an open farmed landscape towards the Weston Marsh South search area. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, around properties in the close-range and along field boundaries in the middle to distant ranges. Built development is evident in the form of an overhead electricity transmission line seen crossing the view from the north-west to south-east, and the small number of rural properties occurring intermittently. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

- 28.9.124 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.125 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around many of the properties by mature trees and hedgerows which may restrict their views out.
- 28.9.126 The susceptibility of road-users is medium. There is the potential that views from Marsh Road have the potential to be affected by the OnSS, especially along the many open sections. The susceptibility of road-users is moderated by the short-term and transitory nature of their views and the baseline influence from the existing electricity transmission line.
- 28.9.127 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.128 The magnitude of change during the construction phase will be medium-high. This rating relates to a combination of the proximity of the OnSS construction to the visual receptors represented by this viewpoint, the extent of the construction site and compound within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the north-east of these visual receptors. The construction of the OnSS will appear at variance with the rural and medium-scale character of this local landscape, despite the presence of the overhead electricity transmission line and the extent to which this landscape has been modified by agricultural practices.
- 28.9.129 The magnitude of change during the operational phase will be medium-high. The photomontage in Volume 2, Appendix 28.1, Figure 28.43b shows a 3D representation of the extents of the OnSS, with the full extents being visible. The openness of the view combined with the absence of intervening landform or vegetation, means that despite the separation distance of 1.6 km, the OnSS will present a new and defining feature that will appear prominent in this view. Although the presence of the overhead electricity transmission line, the medium scale of the fields and heavily modified state of the agricultural land will moderate the effect of the OnSS to some extent, the contrast between the large scale and industrial character of the OnSS compared to the relatively rural character of the baseline context, will be notable.
- 28.9.130 The magnitude of change after an approximate 15 year period will reduce to medium-low. This takes into account the screening effect of proposed mitigation planting on the south-west side of the OnSS, which will effectively screen visibility of the outdoor electrical infrastructure of the OnSS, such that only the upper part of the OnSS building will be visible, as shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.43c. The mitigation planting will merge visually with the existing planting in the wider context to create an integrated appearance. While the OnSS will still have a presence and influence in this view, the very limited extent to which it will be visible will ensure it no longer forms the defining feature.

Significance of Effect

- 28.9.131 The effect of the OnSS is considered to be of a medium-high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **major / moderate** or **moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.132 The significant effect will gradually reduce to a **not significant** effect at a **moderate** or **moderate / minor** level after an approximate 15 year period during which mitigation planting will grow to largely screen visibility of the OnSS.

Viewpoint 3: B1357 near Loosegate

Baseline

- 28.9.133 This viewpoint is located on Seas End Road (B1357), to the south of Moulton Seas End. The view is representative of road-users on the Seas End Road and residents in this rural area between settlements. In the section of Seas End Road to the north of the viewpoint, the views of road-users are largely open owing to the intermittent occurrence of roadside planting, mostly associated with residential properties on this northern side of the road. To the south of the viewpoint, there are also some notable open sections, albeit with a greater occurrence of enclosure from intermittent properties and road-side vegetation. The viewpoint represents a section where views to the north are more extensive whilst in either direction middle range vegetation typically reduces the extent of the views. There are a number of farmsteads and rural properties accessed from this road and although most are fairly well enclosed by mature vegetation, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces.
- 28.9.134 This view looks north across an open farmed landscape towards the Weston Marsh South search area. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, in the close range, along Seas End Road and around built development, and in the middle and distant range along field boundaries. Built development is evident in the form of an overhead electricity transmission line seen in close-range to the north-east and extending north, and the rural properties occurring intermittently along the road, as well as across the wider landscape. Overall, this is a view of a heavily modified farmed and settled landscape, with a rural character that is influenced by the presence of Seas End Road and the overhead electricity transmission lines.

Sensitivity

- 28.9.135 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.136 The susceptibility of road-users is medium. There is the potential that views from Seas End Road have the potential to be affected by the OnSS, especially in the section to the immediate east of the viewpoint where the views of road-users open up obliquely towards the Weston Marsh South Area of Search. The susceptibility of road-users is moderated by the short-term and transitory nature of their views, the speed of traffic, and the extent of road-side enclosure along parts of this road.
- 28.9.137 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by mature trees and hedgerows which may restrict their views out.

28.9.138 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

28.9.139 The magnitude of change during the construction phase will be low. This rating relates to the separation distance between the OnSS construction, and the visual receptors represented by this viewpoint, whereby the construction works will be seen as a relatively distant and small scale feature occupying a small proportion of a much wider view. While many of the ground level construction works will be close to ground level which and these will be partially screened by middleground trees, taller features, such as the construction cranes and emerging building will be more readily visible. The influence of these features on the view will, however, be moderated by the overhead electricity transmission line which forms the defining feature in this view.

28.9.140 The magnitude of change during the operational phase will be low. The photomontage in Volume 2, Appendix 28.1, Figure 28.44b shows a 3D representation of the extents of the OnSS, with the OnSS shown as a relatively distant and small scale feature occupying a small proportion of a much wider view. There will be some partial screening by middleground trees, and the height of the OnSS building and outdoor electrical infrastructure will appear commensurate with the height of background tree cover. While the OnSS will be apparent from this section of the road and residential properties in the area, it will not redefine these views owing to its distant location and the more notable influence from the adjacent overhead electricity transmission line.

28.9.141 The magnitude of change after an approximate 15 year period will remain low. As shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.44c, the mitigation planting will screen the lower part of the OnSS while the upper part will remain visible. It will merge visually with the existing planting in the wider context to create an integrated appearance. While the OnSS will still have a presence and influence in this view, the very limited extent to which it will be visible will ensure it does not form the defining feature.

Significance of Effect

28.9.142 The effect of the OnSS is considered to be of a low magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **moderate / minor** or **minor** in level during both the construction and operational phases and **not significant** in EIA terms. The effect will be adverse, long term and reversible.

28.9.143 The **moderate / minor** or **minor** and **not significant** effect will remain after an approximate 15 year period during which mitigation planting will grow to partly screen visibility of the OnSS.

Viewpoint 4: Carrington Road south

Baseline

- 28.9.144 This viewpoint is located at the southern end of Carrington Road, to the west of the small settlement of Moulton Seas End. Carrington Road is orientated south to north and is a dead-end road providing access to the farmsteads and other properties in this area. Views from Carrington Road are mostly open with only very localised sections where buildings, hedgerow or tree cover forms enclosure. The view is representative of road-users on Carrington Road and the small number of residents in this rural area, and although there is some enclosure from hedgerows and tree cover, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces of these properties.
- 28.9.145 This view looks north-west across an open farmed landscape towards the Weston Marsh South search area. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, around properties in the close-range and along field boundaries in the middle to distant ranges. Built development is evident in the form of an overhead electricity transmission line seen crossing the view from the north-west to south-east, and the rural properties occurring intermittently along the road. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

- 28.9.146 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.147 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around many of the properties by mature trees and hedgerows which may restrict their views out.
- 28.9.148 The susceptibility of road-users is medium. There is the potential that views from Carrington Road have the potential to be affected by the OnSS, especially along the many open sections. The susceptibility of road-users is moderated by the short-term and transitory nature of their views and the baseline influence from the existing electricity transmission line.
- 28.9.149 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.150 The magnitude of change during the construction phase will be medium-low. This rating relates to the separation distance between the OnSS construction, and the visual receptors represented by this viewpoint, whereby the construction works will be seen as a medium range and medium scale feature occupying a contained proportion of a wider view. While many of the ground level construction works will be close to ground level and these will be partially screened by intervening mature tree cover, taller features, such as the construction cranes and emerging building will be more readily visible. The influence of these features on the view will, however, be moderated by the overhead electricity transmission line which forms the defining feature in this view, as well as the influence of the closer range farm buildings.
- 28.9.151 The magnitude of change during the operational phase will be medium-low. The photomontage in Volume 2, Appendix 28.1, Figure 28.45b shows a 3D representation of the extents of the OnSS, with the OnSS shown as a medium range and medium scale feature occupying a contained proportion of a wider view. There will be some partial screening by intervening mature tree cover, and while the height of the outdoor electrical infrastructure will appear commensurate with the height of surrounding tree cover, the OnSS building will rise slightly above this. While the OnSS will be apparent from this section of the road and residential properties in the area, it will not redefine these views owing to its distant location and the more notable influence from the adjacent overhead electricity transmission line.
- 28.9.152 The magnitude of change after an approximate 15 year period will reduce to low. As shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.45c, the mitigation planting will help to consolidate the existing planting such that a more continuous screen will be formed. While the upper parts of the OnSS will remain visible, the combination of the existing and mitigation planting will help to integrate the OnSS into the landscape and in so doing further reduce its prominence.

Significance of Effect

- 28.9.153 The effect of the OnSS is considered to be of a medium-low magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **moderate** or **moderate / minor** in level during both the construction and operational phases and **not significant** in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.154 The medium-low magnitude of change will reduce to low during the approximate 15 year period during which mitigation planting will grow, and the effect will remain **not significant**, albeit reduced to a **moderate / minor** or **minor** level.

Viewpoint 5: B1357 Common Road north

Baseline

- 28.9.155 This viewpoint is located at the northern end of Common Road (B1357), south of where it branches off the A17 and south of Fosdyke Bridge. This section of Common Road sets out a straight course following a north to south orientation towards Moulton Seas End. Views from Common Road are mostly open with only very localised sections where buildings, hedgerow or tree cover forms enclosure. The view is representative of road-users on Common Road and the residents in this rural area, and although there is some enclosure from hedgerows and tree cover, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces of properties.
- 28.9.156 This view looks south-west across an open farmed landscape towards the Weston Marsh South search area. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, around properties and along field boundaries in the middle to distant ranges. Built development is evident in the form of an overhead electricity transmission line seen crossing the view from the north-west to south-east, and the occasional farmstead or rural property seen in the distance. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

- 28.9.157 The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.
- 28.9.158 The susceptibility of road-users is medium. There is the potential that views from Common Road have the potential to be affected by the OnSS, especially along the many open sections. The susceptibility of road-users is moderated by the short-term and transitory nature of their views and the baseline influence from the existing electricity transmission line.
- 28.9.159 The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around many of the properties by mature trees and hedgerows which may restrict their views out.
- 28.9.160 The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity. The sensitivity of road-users will be medium.

Magnitude of Change

- 28.9.161 The magnitude of change during the construction phase will be low. This rating relates to the separation distance between the OnSS construction, and the visual receptors represented by this viewpoint, whereby the construction works will be seen as a relatively distant and small scale feature occupying a small proportion of a much wider view. While many of the ground level construction works will be close to ground level and these will be partially screened by middleground trees, taller features, such as the construction cranes and emerging building will be more readily visible. The influence of these features on the view will, however, be moderated by the overhead electricity transmission line which forms a notable feature along the low skyline.
- 28.9.162 The magnitude of change during the operational phase will be low. The photomontage in Volume 2, Appendix 28.1, Figure 28.46b shows a 3D representation of the extents of the OnSS, with the OnSS shown as a relatively distant and small scale feature occupying a small proportion of a much wider view. There will be some partial screening by middleground trees, and the height of the OnSS building and outdoor electrical infrastructure will appear largely commensurate with the height of surrounding tree cover. While the OnSS will be apparent from this section of the road and residential properties in the area, it will not redefine these views owing to its distant location and the baseline influence from the overhead electricity transmission line seen along the low skyline. The effect is also moderated by the heavily modified state of the agricultural landscape and presence of agricultural buildings.
- 28.9.163 The magnitude of change after an approximate 15 year period will remain low. As shown in the photomontage in Volume 2, Appendix 28.1, Figure 28.46c, the mitigation planting will add to the screening effect formed by the existing mature tree cover, such that the lower part of the OnSS will be mostly screened, while the upper part will remain visible. It will merge visually with the existing planting in the wider context to create an integrated appearance. While the OnSS will still have a presence and influence in this view, the limited extent to which it will be visible will ensure it does not form the defining feature.

Significance of Effect

- 28.9.164 The effect of the OnSS is considered to be of a low magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **moderate / minor** or **minor** in level during both the construction and operational phases and **not significant** in EIA terms. The effect will be adverse, long term and reversible.
- 28.9.165 The **moderate / minor** or **minor** and **not significant** effect will remain after an approximate 15 year period during which mitigation planting will grow to partly screen visibility of the OnSS.

28.10 Decommissioning

- 28.10.1 This section describes the potential impacts of the decommissioning of the onshore elements of the Project with regard to impacts on landscape and visual receptors.

- 28.10.2 No decision has been made regarding the final decommissioning policy for the onshore cables, as it is recognised that industry best practice, rules and legislation change over time. It is likely that the onshore cables and the ducts would be left in situ in order to minimise further ground disturbance.
- 28.10.3 In relation to the OnSS, the programme for decommissioning is expected to be similar in duration to the construction phase. The detailed activities and methodology would be determined later within the project lifetime, but are expected to include:
- Dismantling and removal from site of outside electrical equipment located within the OnSS compound and removal of cabling from site;
 - Dismantling and removal of electrical equipment from within the OnSS buildings and removal of OnSS buildings; and
 - Removal of areas of hard standing; and
 - Reinstatement of the OnSS footprint and platform areas to agricultural land-uses and hedgerows.
- 28.10.4 Whilst details regarding the decommissioning of the OnSS are currently unknown, considering the worst case assumption (which would be the removal and reinstatement of the current land use at the OnSS site) it is anticipated that the impacts would be similar to or less than those assessed during construction. The difference at the decommissioning phase would be that mitigation planting would have matured over the operational life of the onshore elements of the Project and would therefore screen the decommissioning works from many of the surrounding landscape and visual receptors.
- 28.10.5 The decommissioning methodology would need to be finalised nearer to the end of the lifetime of the onshore elements of the Project so as to reflect current guidance, policy and legislation at that point. Any such methodology would be agreed with the relevant authorities and statutory consultees. The decommissioning works could be subject to a separate licensing and consenting approach.

28.11 Cumulative Impact Assessment

Introduction

- 28.11.1 This cumulative impact assessment for LVIA has been undertaken in accordance with the methodology provided in Volume 1, Chapter 5: EIA Methodology.
- 28.11.2 As described in section 28.4, a comprehensive list of projects that have the potential to contribute to cumulative impacts of the OnSS, onshore ECC and landfall has been compiled and this list and the approach to compiling this list is described in Volume 1, Chapter 5: EIA Methodology. The LVIA has undertaken a process of scoping out projects and activities from this list, based on professional judgement, assessment rationale and guidance relevant to landscape and visual impacts.

- 28.11.3 Cumulative developments are shown in Figure 28.25. This shows that no cumulative developments fall within the 2 km Study Area of the landfall nor the 5 km Study Area of the Lincolnshire Node Search Area for the OnSS. There is, therefore, no potential for cumulative effects to arise in respect of these components of the Project. In respect of the Weston Marsh North and Weston Marsh South Search Areas for the OnSS, there are two proposed residential developments within the 5 km Study Area. Both these developments are located at Fosdyke Bridge, approximately 3.3 km from the Weston Marsh North Search Area and approximately 4.3 km from the Weston Marsh South Search Area. Despite these proposed residential developments being located within the 5 km Study Area, there is no potential for a significant cumulative effect to arise owing to their limited influence on the cumulative situation. This relates to the fact that they are relatively small residential developments, comprising 6 and 9 dwellings, that they are located in an existing settlement where there is already an urban influence and that they are located adjacent to the busy A17 which further accentuates the human influences in this local area. Furthermore, there is tree cover and hedgerows in the intervening area between these proposed residential developments and the OnSS such that the occurrence of inter-visibility will be limited.
- 28.11.4 In light of these factors, the cumulative effects in relation to the landfall and the three search areas for the OnSS have been scoped out of this cumulative assessment.
- 28.11.5 In respect of the onshore ECC, Figure 28.25 shows that there are a number of cumulative developments that lie within the 2 km Study Area of the onshore ECC. A preliminary assessment has been carried out in order to highlight those cumulative developments that have potential to interact with the onshore ECC to give rise to significant cumulative effects. The results of this preliminary assessment are presented in the Preliminary Assessment of Cumulative Developments in Table 28.10.

Table 28.10: Preliminary Assessment of Cumulative Developments

Development name / type	Project	Status	Distance / Direction	Scoping in / Scoping out of LVIA
West End, Hogsthorpe Residential Development	Outline application for the erection of up to 89 dwellings and associated works	Application	70m SSW of onshore ECC PEIR Boundary on W of Hogsthorpe	Scope in owing to potential close proximity of cumulative development to onshore ECC
Watery Lane, Butterwick Residential Development	Approval of reserved matters for the erection of 42 dwellings	Application	230m N of onshore ECC PEIR Boundary on E of Butterwick	Scope out owing to separation distance between cumulative development and onshore ECC and baseline influences from development
Church End Lane, Fishtoft Residential Development	Application for the erection of 20 affordable dwellings and associated works	Application	800m NW of onshore ECC PEIR Boundary	Scope out owing to separation distance between cumulative development and onshore ECC and baseline influences from development

Development name / type	Project	Status	Distance / Direction	Scoping in / Scoping out of LVIA
Church End Lane, Fishtoft Residential Development	Outline application for the erection of 46 residential dwellings and associated works	Application	850m NW of onshore ECC PEIR Boundary	Scope out owing to separation distance between cumulative development and onshore ECC and baseline influences from development
Marsh Road, Fosdyke Residential Development	Outline application for the erection of 9 self-build dwellings and 2 alms houses	Application	160m SW of onshore ECC PEIR Boundary	Scope in owing to potential close proximity of cumulative development to onshore ECC
Land off Buttock Gate, Fosdyke. Residential Development	Outline application for the erection of 6 dwellings	Application	80m SW of onshore ECC PEIR Boundary	Scope in owing to potential close proximity of cumulative development to onshore ECC

28.11.6 The cumulative MDS for the construction and operational phases of the Project is as set out for the main assessment in Table 28.6.

Cumulative Assessment

Onshore ECC

28.11.7 There is the potential for a significant cumulative effect to arise as a result of the onshore ECC of the Project in conjunction with the following proposed residential developments;

- West End, Hogsthorpe;
- Marsh Road, Fosdyke; and
- Land off Buttock Gate, Fosdyke.

28.11.8 There would be no cumulative effects on landscape character owing to the relatively small scale of the onshore ECC construction, the intensively farmed nature of the land that the majority of the onshore ECC is routed through and the broad expanse of the LCTs which ensure that the onshore ECC will occupy only a small proportion and will have a limited influence on the overall character.

28.11.9 There is the potential that the onshore ECC in conjunction with each of the three relevant proposed residential developments may give rise to significant cumulative effects on the views of visual receptors, such as nearby residents, walkers or road-users.

28.11.10 The potential for cumulative visual effects to arise in respect of the onshore ECC are limited by the factors set in the introduction to section 28.9 and will only be likely to arise during construction in instances where the onshore ECC is located close to visual receptors, such as residents, road-users and walkers, as well as close to the cumulative developments, and /or where tree or hedgerow losses are notable.

28.11.11 The PEIR assessment considers the onshore ECC in terms of an 80m working width to be located somewhere within a 300m wide search area corridor. As potential visual effects will be localised, these can only be assessed in respect of the exact location of the onshore ECC which at PEIR stage has not been determined. The separation distances between the PEIR boundary and the proposed residential developments referenced in Table 28.11 Table 28.10 are a minimum and the exact location of the onshore ECC within the 300m search area could be more distant and have different effects.

28.11.12 The detailed assessment of cumulative visual effects, as a result of the construction of the onshore ECC has, therefore, been deferred until the DCO Application. The effects of the onshore ECC during the operational phase will be limited to the residual effects relating to tree or hedgerow loss and these will also be considered as part of the DCO Application.

28.12 Inter-Relationships

Table 28.11 Inter-relationships between the LVIA and other chapters in the PEIR.

Topic Chapter	Where addressed in the LVIA	Rationale
Volume 1, Chapter 21: Onshore Ecology.	Section 28.5 Basis of the Assessment Sections 28.7, 28.8 and 28.9.	Both chapters consider the potential effects of hedgerow and tree removal, the LVIA considering the impact on hedgerows and trees as landscape elements, and the Onshore Ecology assessment considering the impact on hedgerows and trees as ecological assets. Both chapters consider the mitigation of hedgerow and tree loss in respect of planting proposed as outline landscape mitigation principles.
Volume 1, Chapter 20: Onshore Archaeology and Cultural Heritage.	Sections 28.4, 28.8 and 28.9.	Both chapters consider the potential effects of the onshore elements of the Project on designated Registered Historic Parks and Gardens and their setting within the landscape.
Volume 1, Chapter 29: Socio-Economics.	Section 28.9.	Both chapters consider the potential effects of the onshore elements of the Project on the visual amenity of recreational users in the local area.
Volume 1, Chapter 17 SLVIA.	Section 28.5	The LVIA considers the inter-relationship between the SLVIA and the LVIA.

28.13 Transboundary Effects

28.13.1 The Scoping Opinion provided by the Planning Inspectorate agrees that transboundary effects in relation to the LVIA topic, can be scoped out of the assessment, as presented in the summary of consultation responses in Table 28.2. It is considered no transboundary effects will arise and, therefore, no assessment is included.

28.14 Conclusions

Summary of Effects

Landscape

- 28.14.1 The landscape will be directly affected by the onshore elements of the Project. The siting and design of the onshore elements of the Project has sought to minimise the removal of landscape elements across the LVIA study area. As a result of this, physical landscape effects within the LVIA study area would be kept to a minimum to ensure that the character along the onshore ECC and of the Lincolnshire Node, Weston Marsh North or Weston Marsh South search areas are retained for future benefit. However, likely significant effects will occur within localised areas related to the removal of higher sensitivity landscape elements such as trees, taller hedgerows and hedgerow trees along the onshore ECC and within the OnSS search areas.
- 28.14.2 The Lincolnshire Node OnSS search area and indicative location lie between the I1 Holton le Clay to Great Steeping Marsh LCA and J1 Tetney Lock to Skegness Coastal Outmarsh LCA such that both of these LCAs have the potential to be significantly affected. While the OnSS will have no effect across the majority of these LCAs, owing to their broad extent and the limited extents of visibility, there will also be significant effects in those localised parts of these LCAs surrounding the OnSS. I1 Holton le Clay to Great Steeping Marsh LCA will undergo significant effects out to approximately 1.4 to 2.0 km, while J1 Tetney Lock to Skegness Coastal Outmarsh LCA will undergo significant effects out to approximately 1.4 to 1.8 km. The remaining parts of the LCA will either undergo not significant effects or no effect owing to no visibility.
- 28.14.3 The Weston Marsh North OnSS search area occurs in The Fens NCA, which will undergo significant effects out to approximately 1.5 to 2.0 km. The remaining parts of the NCA will either undergo not significant effects or no effect owing to no visibility. The Weston Marsh South OnSS search area also occurs in The Fens NCA, which will undergo significant effects out to approximately 1.8 to 2.9 km. The remaining parts of the NCA will either undergo not significant effects or no effect owing to no visibility.
- 28.14.4 No significant effects on landscape character will arise as a result of the construction of the onshore ECC or at landfall or as a result of operational effects associated with these components of the onshore infrastructure.

Visual

- 28.14.5 The OnSS is the component of the onshore infrastructure with greatest potential to give rise to significant visual effects, owing to its large-scale and modern appearance which will be at variance with the predominantly rural character of the three potential search areas. Four or five viewpoints have been selected for each of the three indicative OnSS locations.
- 28.14.6 The assessment has found that the effect of the OnSS on all of these viewpoints would be significant, in relation to scale and appearance of the OnSS, but also the open and exposed nature of the flat and low-lying farmed landscapes where these three search areas occur. These significant effects all typically occur within the first 1 or 2 km, denoting the extent to which an accumulation of small-scale rural features, such as trees, hedgerows, farmsteads and embankments reduce the extent and level of visibility beyond these close-ranges.

- 28.14.7 In respect of the indicative Lincolnshire Node OnSS, the assessment found that of the four representative viewpoints, four will undergo significant effects during the construction and operational phases. Over a 15 year period within which mitigation planting would grow to semi-mature, the effect at two of the viewpoints will reduce to not significant and remain significant at the other two viewpoints. These significant effects will all occur within a minimum of 1.4km from the OnSS making them close range and localised.
- 28.14.8 In respect of the indicative Weston Marsh North OnSS, the assessment found that of the five representative viewpoints, all five will undergo significant effects during the construction and operational phases. Over a 15 year period within which mitigation planting would grow to semi-mature, the effect at one of the viewpoints will reduce to not significant and remain significant at the other four viewpoints. These significant effects will all occur within a minimum of 1.4km from the OnSS making them close range and localised.
- 28.14.9 In respect of the indicative Weston Marsh South OnSS, the assessment found that of the five representative viewpoints, two will undergo significant effects during the construction and operational phases and three will undergo not significant effects. Over a 15 year period within which mitigation planting would grow to semi-mature, the effect at one of the viewpoints will reduce to not significant and remain significant at the other one viewpoint. These significant effects will all occur within a minimum of 1.6km from the OnSS making them close range and localised.
- 28.14.10 In respect of the construction of the landfall and the onshore ECC, the occurrence of significant effects on visual receptors will typically be localised and for that reason a detailed assessment of these effects will require defined locations and this will therefore be undertaken as part of the DCO application.

Cumulative

- 28.14.11 None of the cumulative developments in the study area are considered to have the potential to contribute to significant cumulative landscape or visual effects in respect of the three indicative OnSS locations and the landfall. This is largely due to distance or separation between the onshore elements of the Project and the cumulative development or due to landscape elements / built structures that limit the level of intervisibility and, therefore, cumulative effect. While there is some potential for significant cumulative effects to arise in respect of localised parts of the onshore ECC and a select number of nearby application stage residential developments, the localised nature of these effects means that a defined route for the onshore ECC will be required for the cumulative assessment and this will, therefore, be undertaken as part of the DCO application.

Conclusions

- 28.14.12 This LVIA has considered the potential effects that the onshore elements of the Project may have on the existing landscape resource of the onshore LVIA study area and the visual amenity of its receptors. It has considered the physical effects of the landfall and onshore ECC on the physical elements of the LVIA study area and the landscape and visual effects of the three potential options for the siting of the OnSS, one of which will be taken forward to the EIA stage.

28.14.13 The onshore elements of the Project will give rise to significant effects on the more sensitive physical elements during the construction phase. For the onshore cable route these significant construction effects are limited to localised areas as a result of the physical disruption caused by the construction activities or vegetation removal. For the onshore OnSS these also tend to occur for receptors at close proximity although significant visual effects have been found at distances of 1.6km from the more open and exposed parts of the surrounding landscapes.

28.14.14 Whilst the onshore elements of the Project will give rise to significant residual landscape and visual effects as a result of the proposed onshore OnSS, the LVIA has assessed that there will be no residual significant effects to the landscape and visual resource as a result of the landfall and onshore cable ECC. All developments of this scale are likely to give rise to some effects on landscape character and visual amenity.

Table 28.12 Summary of Landscape and Visual Effects

Receptor	Sensitivity	Magnitude of Change Construction	Magnitude of Change Operation	Significance of Effect
Landfall and Onshore ECC				
Coastal Landscape	Medium-high	Low	N/A	Moderate / minor Not significant
Agricultural Land	Medium-low	Medium-low	N/A	Minor Not significant
Hedgerows	Medium	Medium-low	N/A	Moderate / minor Not significant
Tall Hedgerows and Hedge Trees	Medium-high	Medium	N/A	Moderate Significant (where removals occur)
Trees	Medium-high	Medium-high	N/A	Moderate / major Significant (where removals occur)
Lincolnshire Node OnSS				
Holton le Clay to Great Steeping Middle March LCA	Medium	High / Medium-high / Medium Medium-low / Low No change	High / Medium-high / Medium Medium-low / Low No change	Major, major / moderate, or moderate Significant (out to approximately 1.4 to 2 km) Not significant No effect
Tetney Lock to Skegness Coastal Outmarsh LCA	Medium	High / Medium-high / Medium Medium-low / Low No change	High / Medium-high / Medium Medium-low / Low No change	Major, major / moderate, or moderate Significant (out to approximately 1.4 to 1.8 km) Not significant No effect
Lincolnshire Wolds AONB	High	Low	Low	Moderate / minor Not significant
Viewpoint 1: Asserby Road	Medium-high – residents	High	High	Major or major / moderate and significant reducing to

Receptor	Sensitivity	Magnitude of Change Construction	Magnitude of Change Operation	Significance of Effect
	Medium – road-users			moderate and remaining significant after 15 years
Viewpoint 2: Mill Lane	Medium-high – walkers Medium-high – residents Medium – road-users	Medium-high	Medium-high	Major / moderate or moderate and significant reducing to moderate or moderate / minor and not significant after 15 years
Viewpoint 3: Alford Road	Medium-high – walkers Medium-high – residents Medium – road-users	Low	Low	Moderate / minor or minor and not significant remaining moderate / minor or minor and not significant after 15 years
Viewpoint 4: Thurlby	Medium-high – walkers Medium-high – residents Medium – road-users	Medium-high	Medium-high	Major / moderate or moderate and significant remaining major / moderate or moderate and significant after 15 years
Viewpoint 5: Bilsby	Medium-high – residents Medium – road-users	Medium	Medium	Moderate and significant remaining moderate and significant after 15 years
Weston Marsh North OnSS				
The Fens	Medium	High / Medium-high / Medium Medium-low / Low No change	High / Medium-high / Medium Medium-low / Low No change	Major, major / moderate, or moderate and significant (out to approximately 1.5 to 2 km) Not significant No effect
WMN1 Marsh Lane near Manor House	Medium-high – residents Medium – road-users	Medium-high	Medium-high	Major / moderate or moderate and significant remaining major / moderate or moderate and significant after 15 years
WMN2 A16 near Marsh Lane junction	Medium-high – residents Medium – road-users	Medium-high	Medium-high	Major / moderate or moderate and significant reducing to moderate or moderate / minor and not significant after 15 years
WMN3 A16 at Surfleet Bank junction	Medium-high – residents Medium – road-users	High	High	Major or major / moderate and Significant reducing to moderate and significant after 15 years

Receptor	Sensitivity	Magnitude of Change Construction	Magnitude of Change Operation	Significance of Effect
WMN4 Macmillan Way at Surfleet Bank	Medium-high – walkers Medium-high – residents Medium – road-users	High	High	Major or major / moderate and Significant remaining major or major / moderate and significant after 15 years
WMN5 Macmillan Way near Welland House	Medium-high – walkers Medium-high – residents Medium – road-users	High	High	Major or major / moderate and significant reducing to major / moderate or moderate and significant after 15 years
Weston Marsh South OnSS				
The Fens	Medium	High / Medium-high / Medium Medium-low / Low No change	High / Medium-high / Medium Medium-low / Low No change	Major, major / moderate, or moderate and significant (out to approximately 1.8 to 2.9 km) Not significant No effect
WMS1 Marsh Road near Crowtree Farm	Medium-high – residents Medium – road-users	High	High	Major or major / moderate and Significant reducing to moderate and significant after 15 years
WMS2 Marsh Road near Kindergarten Nursery	Medium-high – residents Medium – road-users	Medium-high	Medium-high	Major / moderate or moderate and significant reducing to moderate / minor or minor and not significant after 15 years
WMS3 B1357 near Loosegate	Medium-high – residents Medium – road-users	Low	Low	Moderate / minor or minor and not significant remaining moderate / minor or minor and not significant after 15 years
WMS4 Carrington Road south	Medium-high – residents Medium – road-users	Medium-low	Medium low	Moderate or moderate / minor and not significant reducing to moderate / minor or minor and not significant after 15 years
WMS5 Common Road north	Medium-high – residents Medium – road-users	Low	Low	Moderate / minor or minor and not significant remaining moderate / minor or minor and not significant after 15 years

28.15 References

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DECC, 2011b - NPS EN-3, National Policy Statement for Renewable Energy Infrastructure.

DECC, 2011c - NPS EN-5, Electricity Networks Infrastructure.

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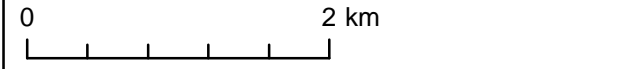
Legend

-  PEIR Boundary
-  PEIR Boundary 1km Study Area
-  Lincolnshire Node OnSS Search Area

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Coordinate System: British National Grid



Scale: 1:50,000

Study Area
Lincolnshire Node Substation (1 of 4)

Figure 28.1



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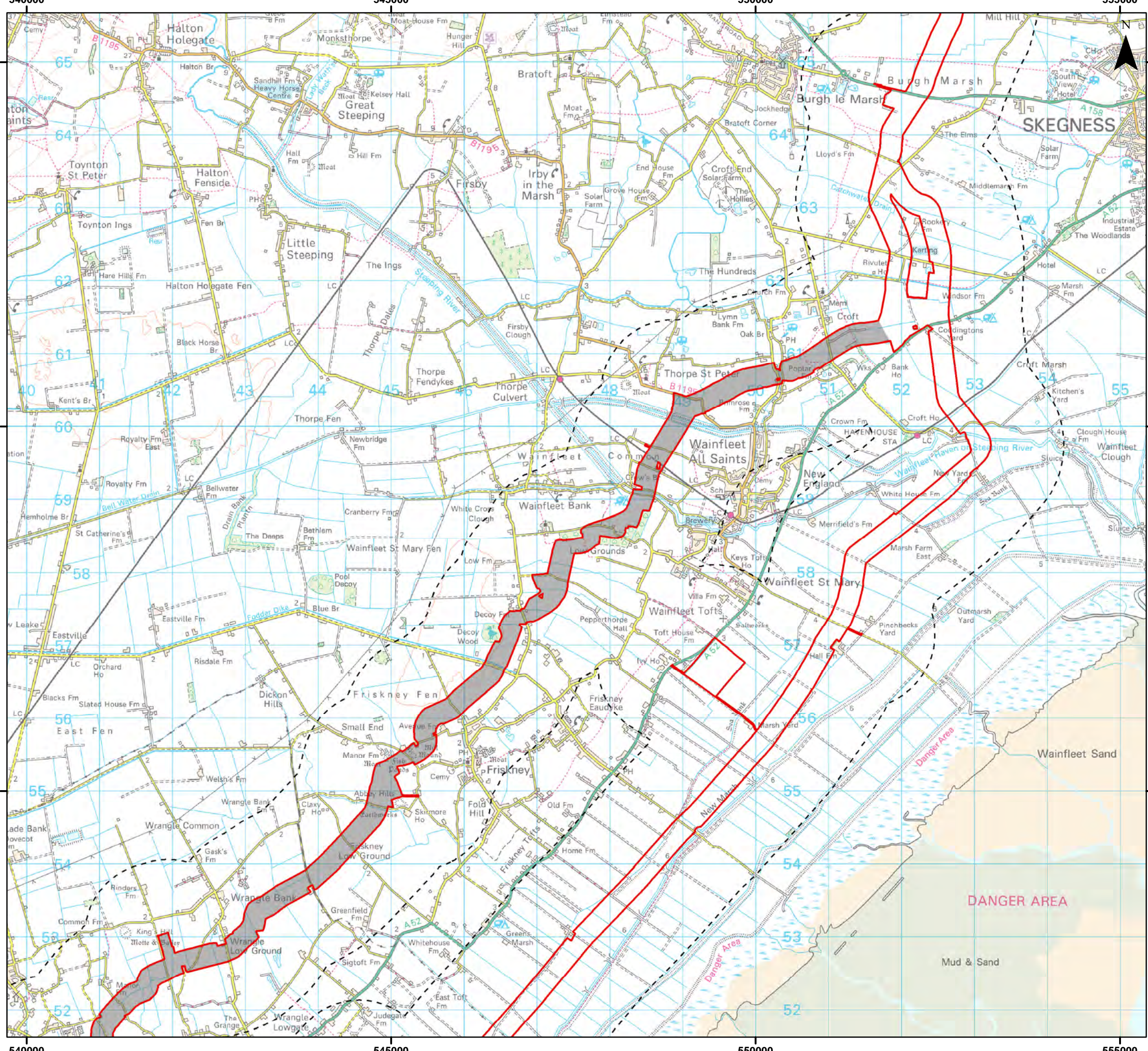
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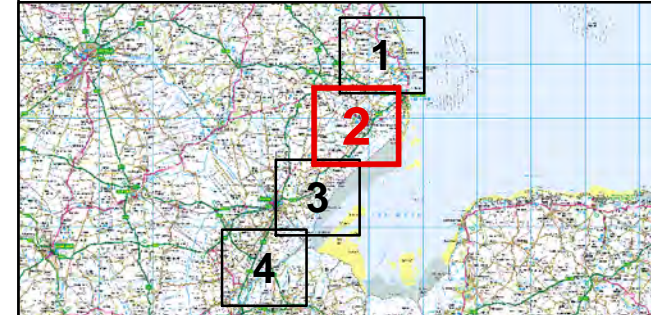
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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area

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Coordinate System: British National Grid
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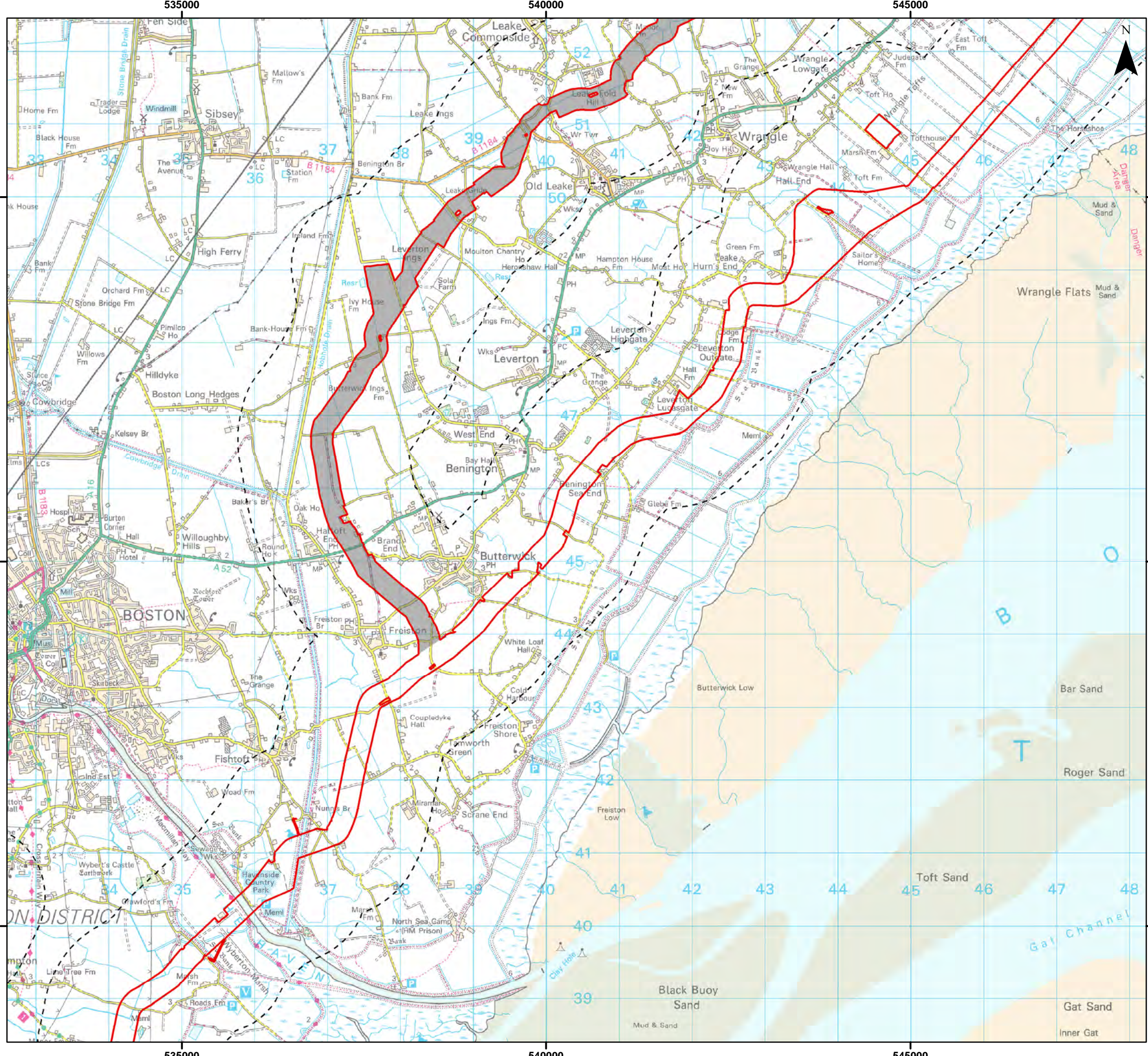
Study Area
 Onshore Cable Route (North) (2 of 4)

Figure 28.2

OUTER DOWSING
OFFSHORE WIND

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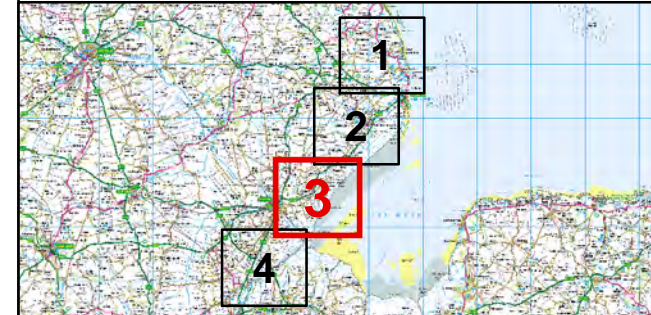
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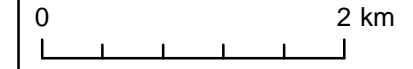
Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area

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Coordinate System: British National Grid



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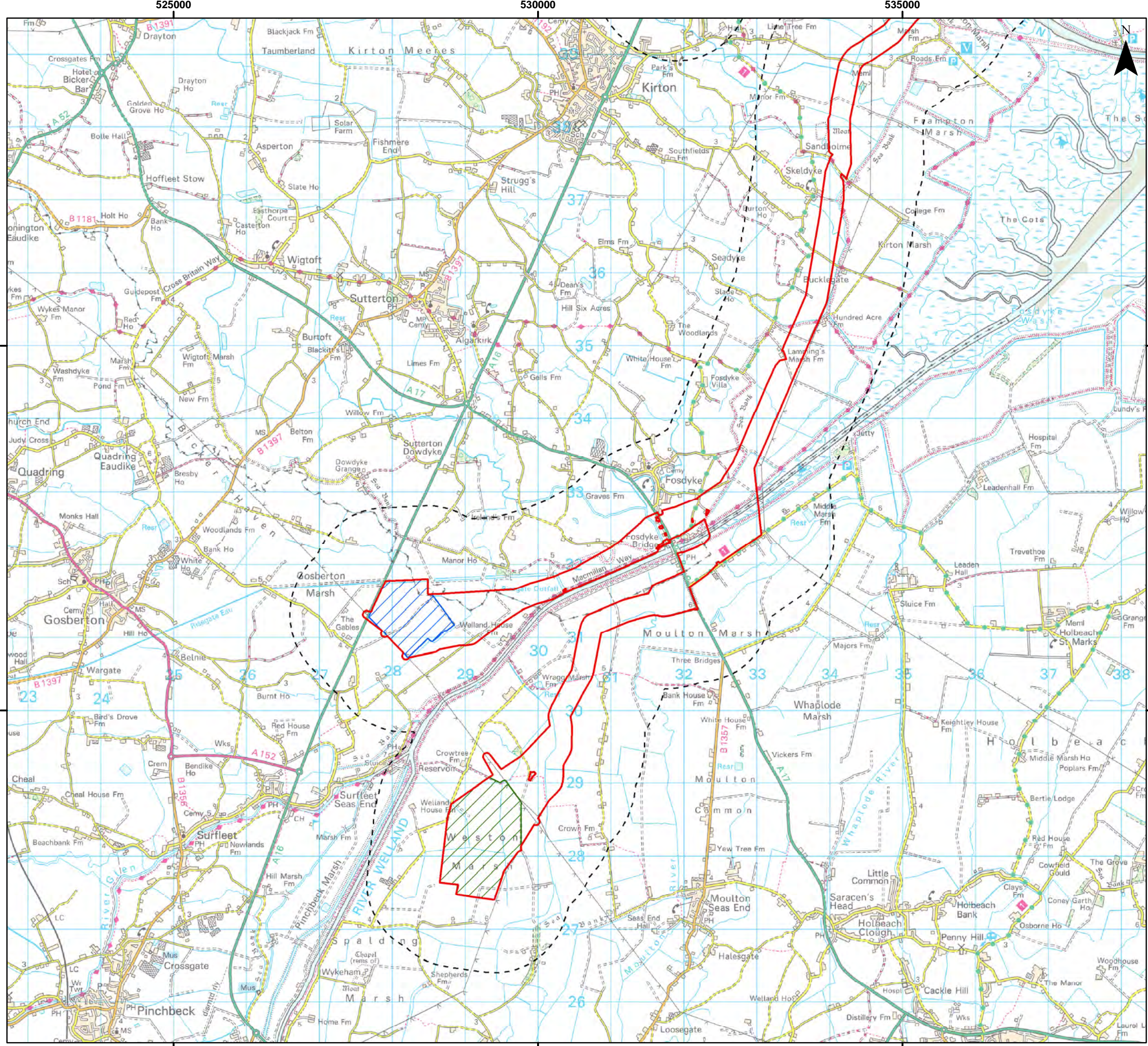
Study Area
 Onshore Cable Route (South) (3 of 4)

Figure 28.3







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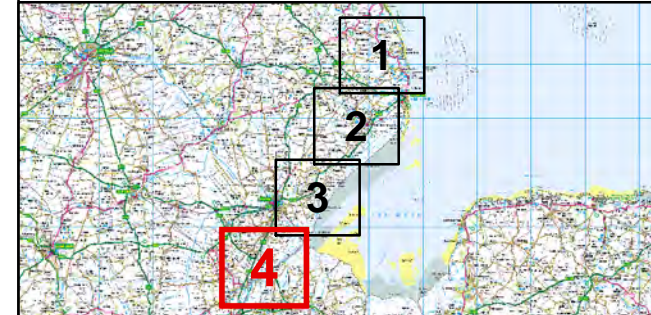





Legend

-  PEIR Boundary
-  PEIR Boundary 1km Study Area
-  Weston Marsh North OnSS Search Area
-  Weston Marsh South OnSS Search Area

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Coordinate System: British National Grid
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Study Area
 Western Marsh Substation (4 of 4)

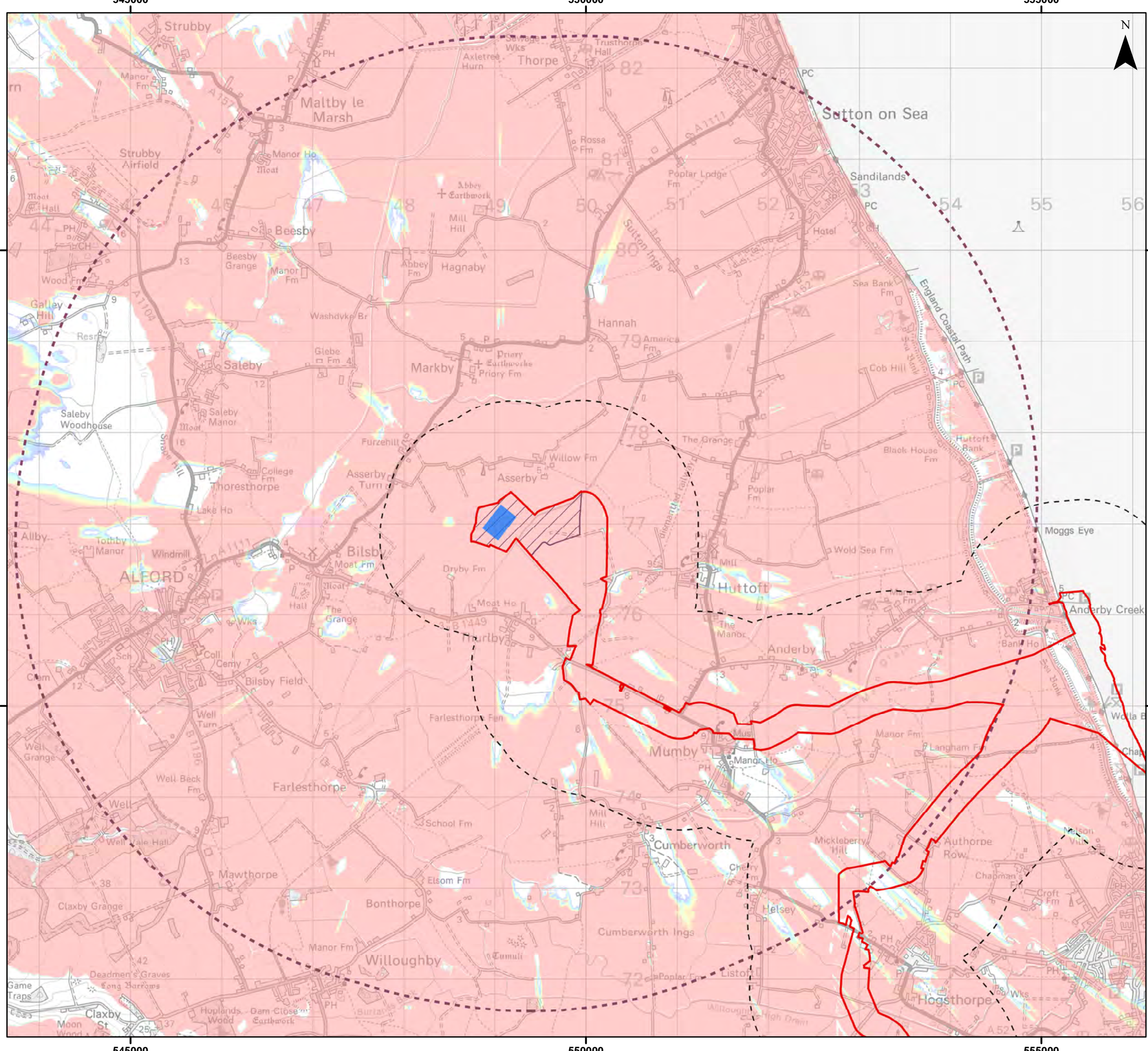
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 Revision: 4



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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Lincolnshire Node OnSS Search Area
- Lincolnshire Node OnSS 5km Study Area

Lincolnshire Node OnSS ZTV*

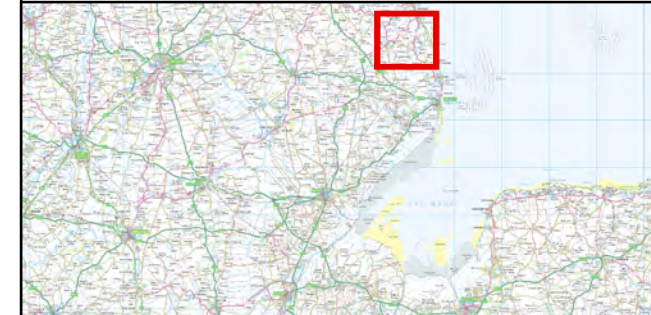
(Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)

High

Low

Substation Height:	19m	Observer height:	2m
DTM:	EA LIDAR DTM 2m	Surface features:	Excluded
DTM resolution:	2m	Earth curvature:	Included

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Coordinate System: British National Grid

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Scale: 1:40,000

Bare Ground ZTV
 Lincolnshire Node OnSS

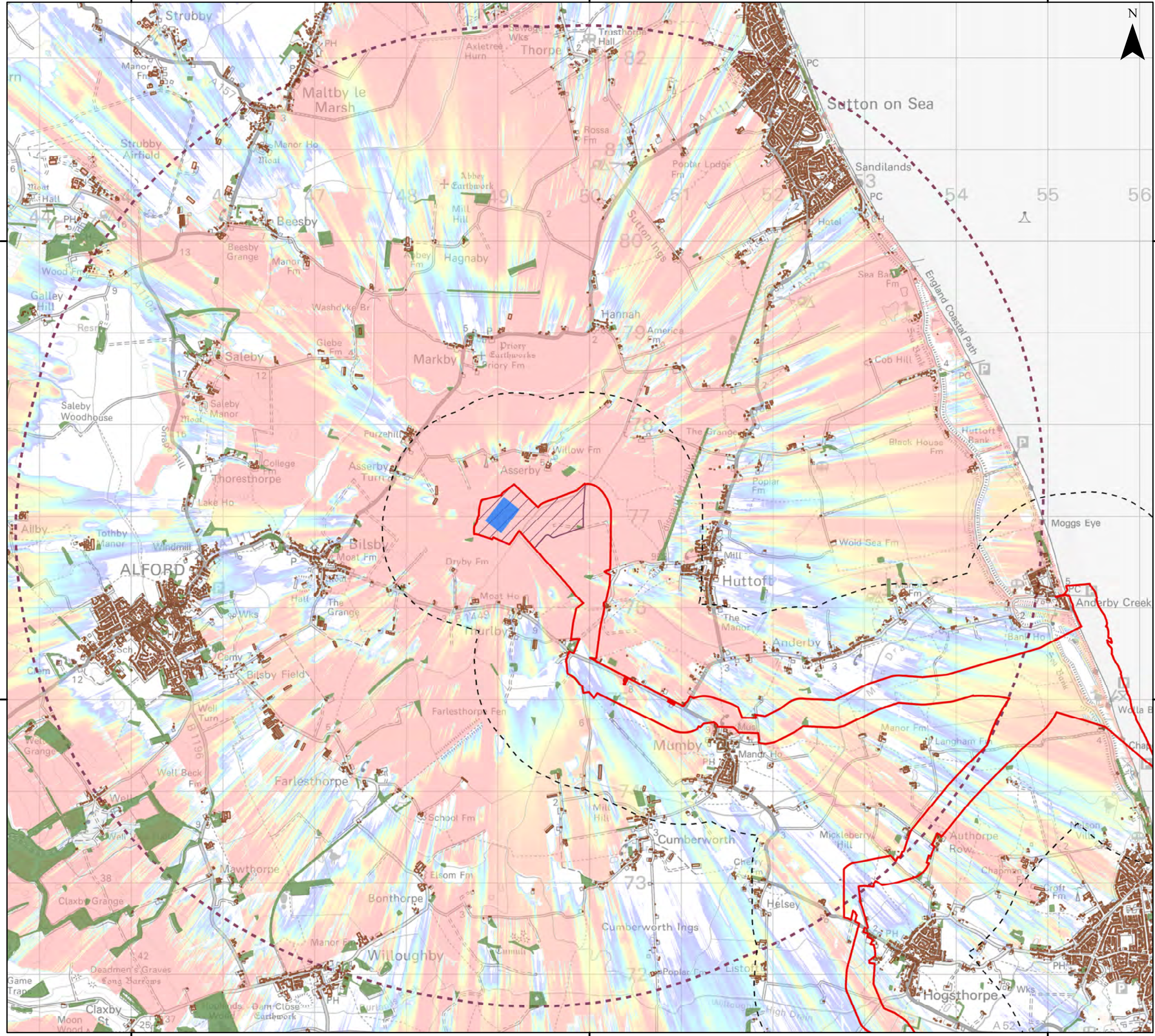
Figure 28.5

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





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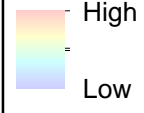
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Legend

-  PEIR Boundary
 -  PEIR Boundary 1km Study Area
 -  OnSS Indicative Layout Footprint
 -  Lincolnshire Node OnSS Search Area
 -  Lincolnshire Node OnSS 5km Study Area
 -  Building
 -  Woodland
- Lincolnshire Node OnSS Screened ZTV*

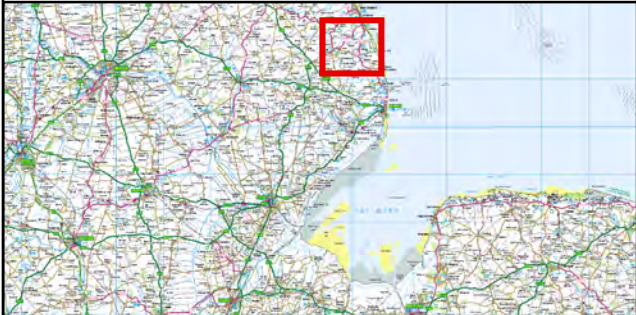
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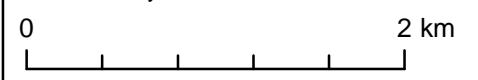
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Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Screened ZTV
Lincolnshire Node OnSS

Figure 28.6



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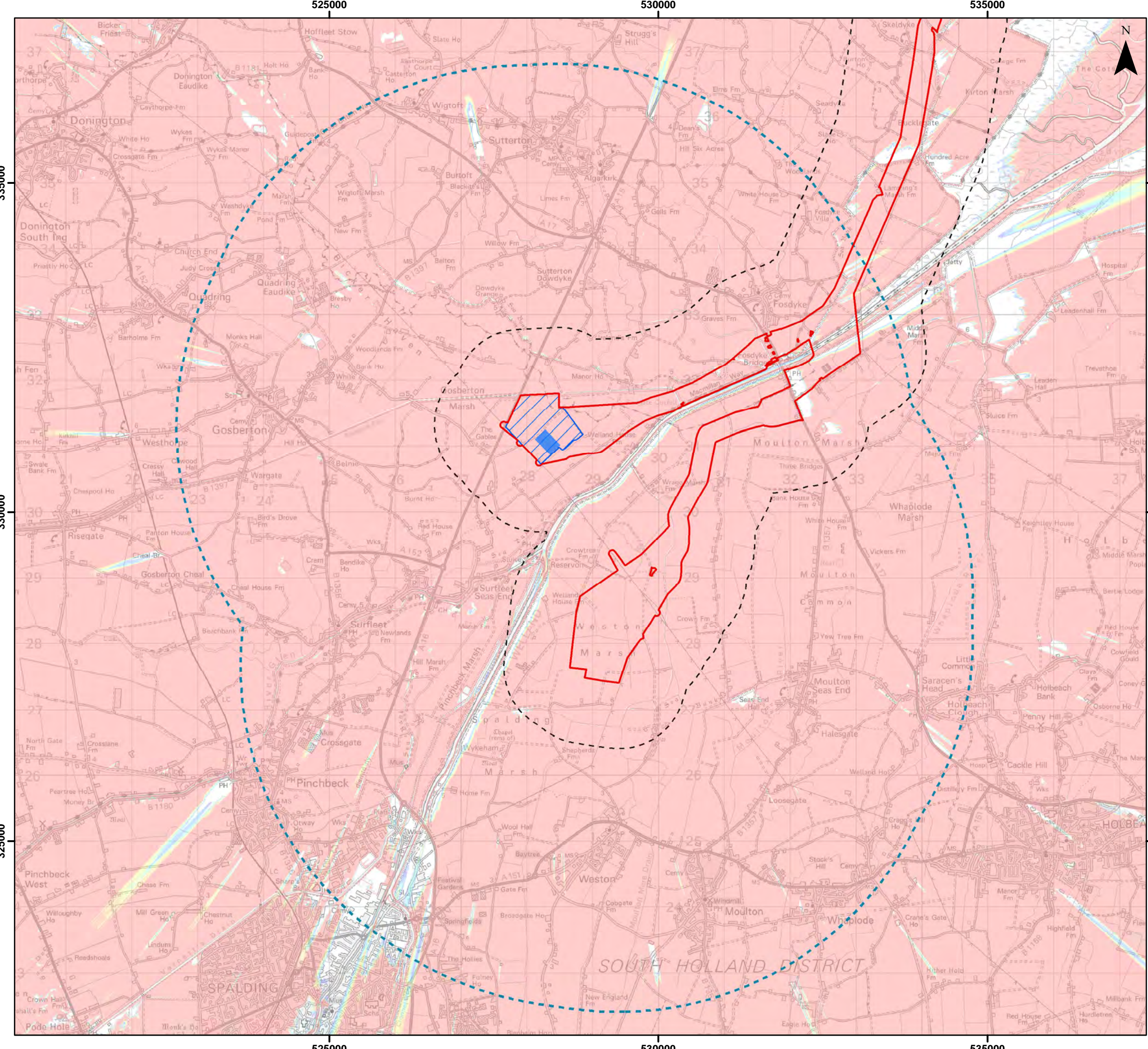
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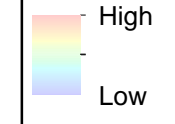
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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Weston Marsh North OnSS Search Area
- Western Marsh OnSS 5km Study Area

Weston Marsh North OnSS ZTV*
 (Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)



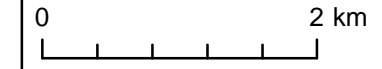
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Substation Height:	19m	Observer height:	2m
DTM:	EA LIDAR DTM 2m	Surface features:	Excluded
DTM resolution:	2m	Earth curvature:	Included

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Bare Ground ZTV
 Weston Marsh North OnSS

Figure 28.7



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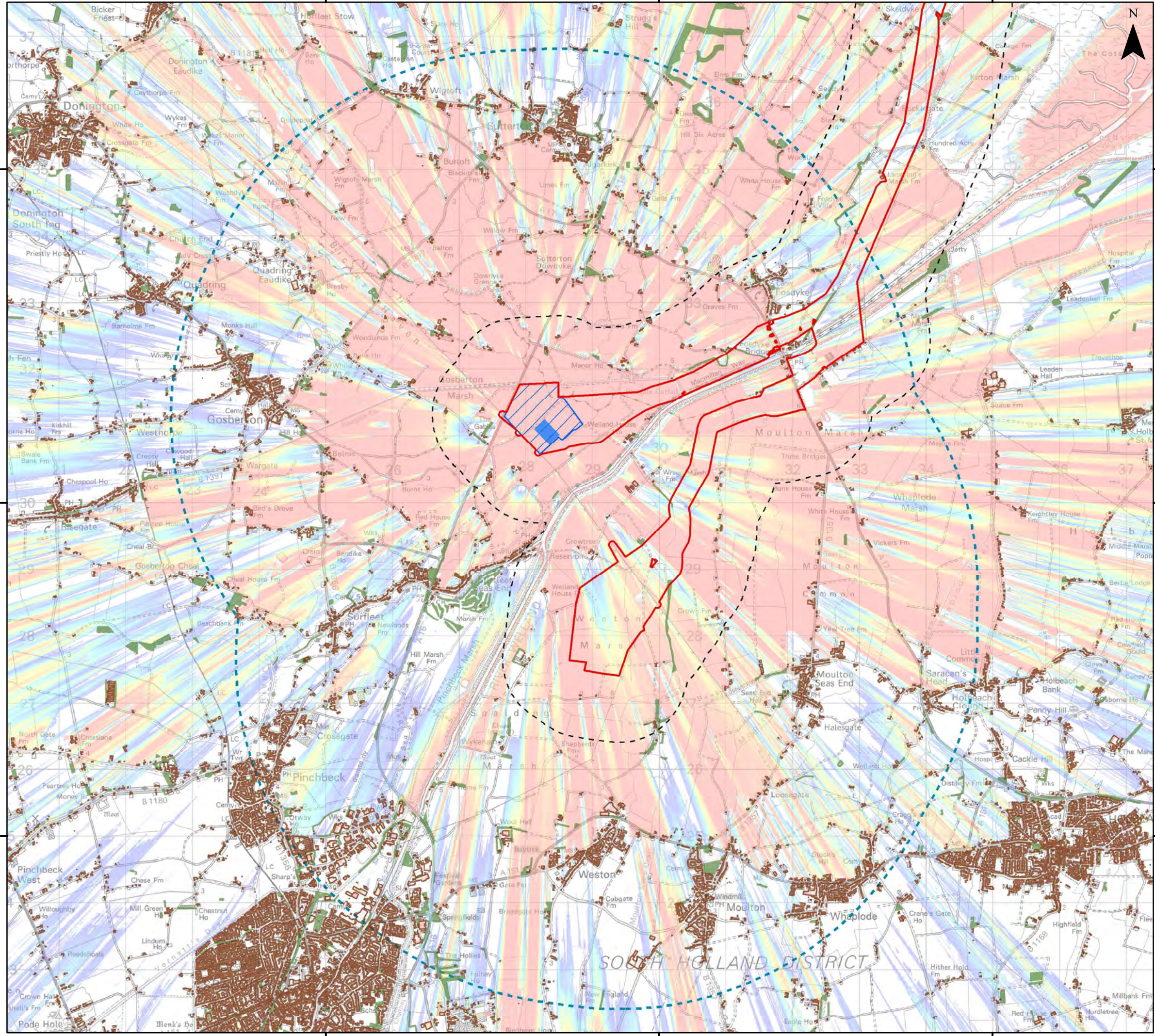


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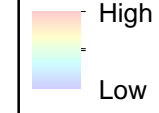
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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Weston Marsh North OnSS Search Area
- Western Marsh OnSS 5km Study Area
- Building
- Woodland

Weston Marsh North OnSS Screened ZTV*
 (Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)



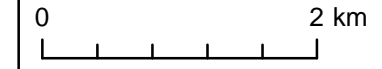
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Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Screened ZTV
 Weston Marsh North OnSS

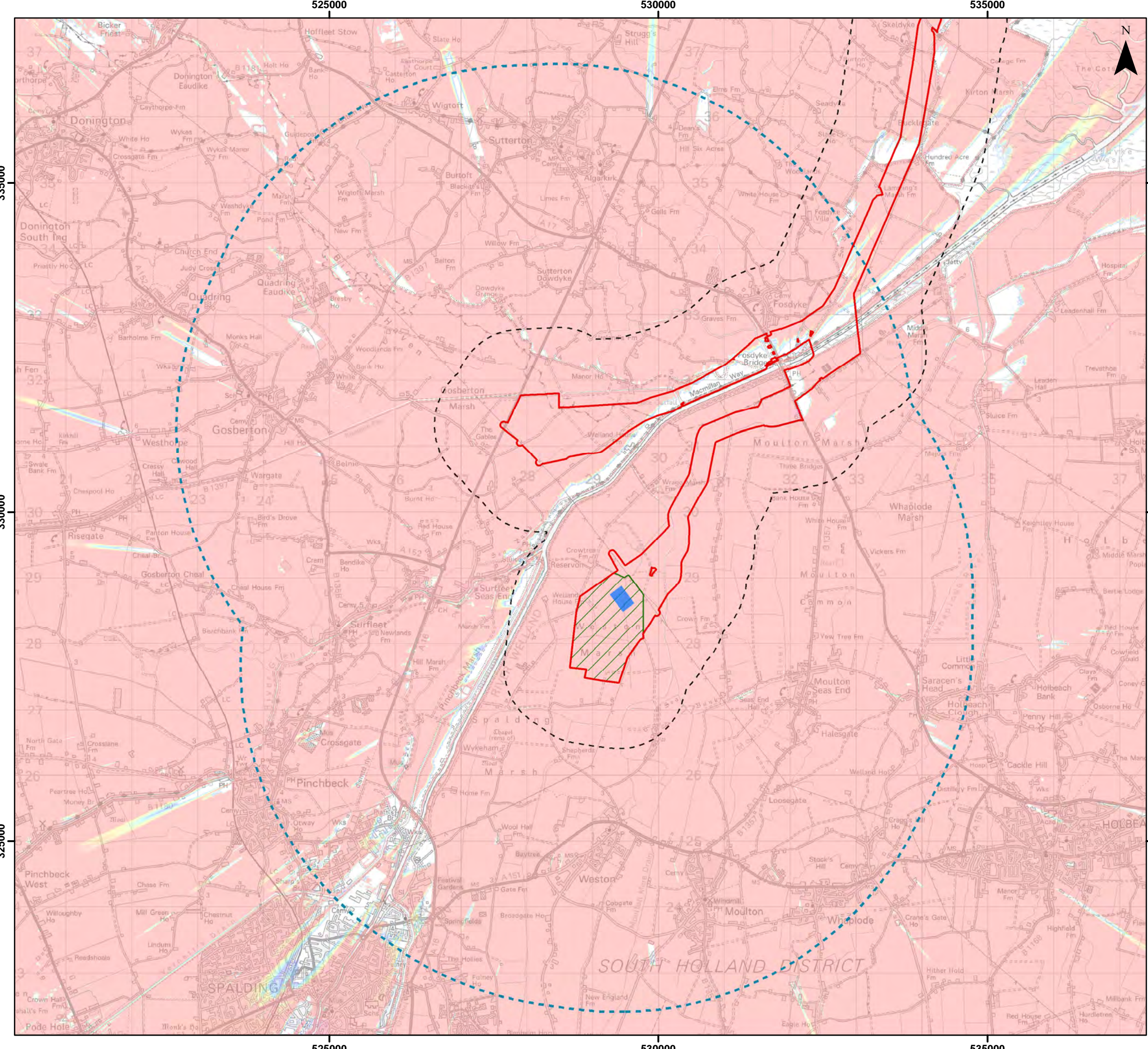
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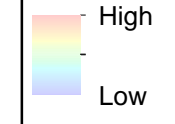
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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Weston Marsh South OnSS Search Area
- Western Marsh OnSS 5km Study Area

Weston Marsh South OnSS ZTV*
 (Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)



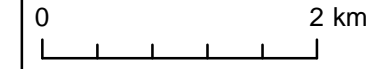
*This ZTV shows higher to lower visibility based on the amount of onshore substation visible as represented by a perimeter of points with a 5m spacing arranged around the upper perimeter of the maximum substation 3D envelope. The ZTV does not indicate the decrease in scale that occurs with increased distance from the onshore substation.

Substation Height:	19m	Observer height:	2m
DTM:	EA LIDAR DTM 2m	Surface features:	Excluded
DTM resolution:	2m	Earth curvature:	Included

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Bare Ground ZTV
 Weston Marsh South OnSS

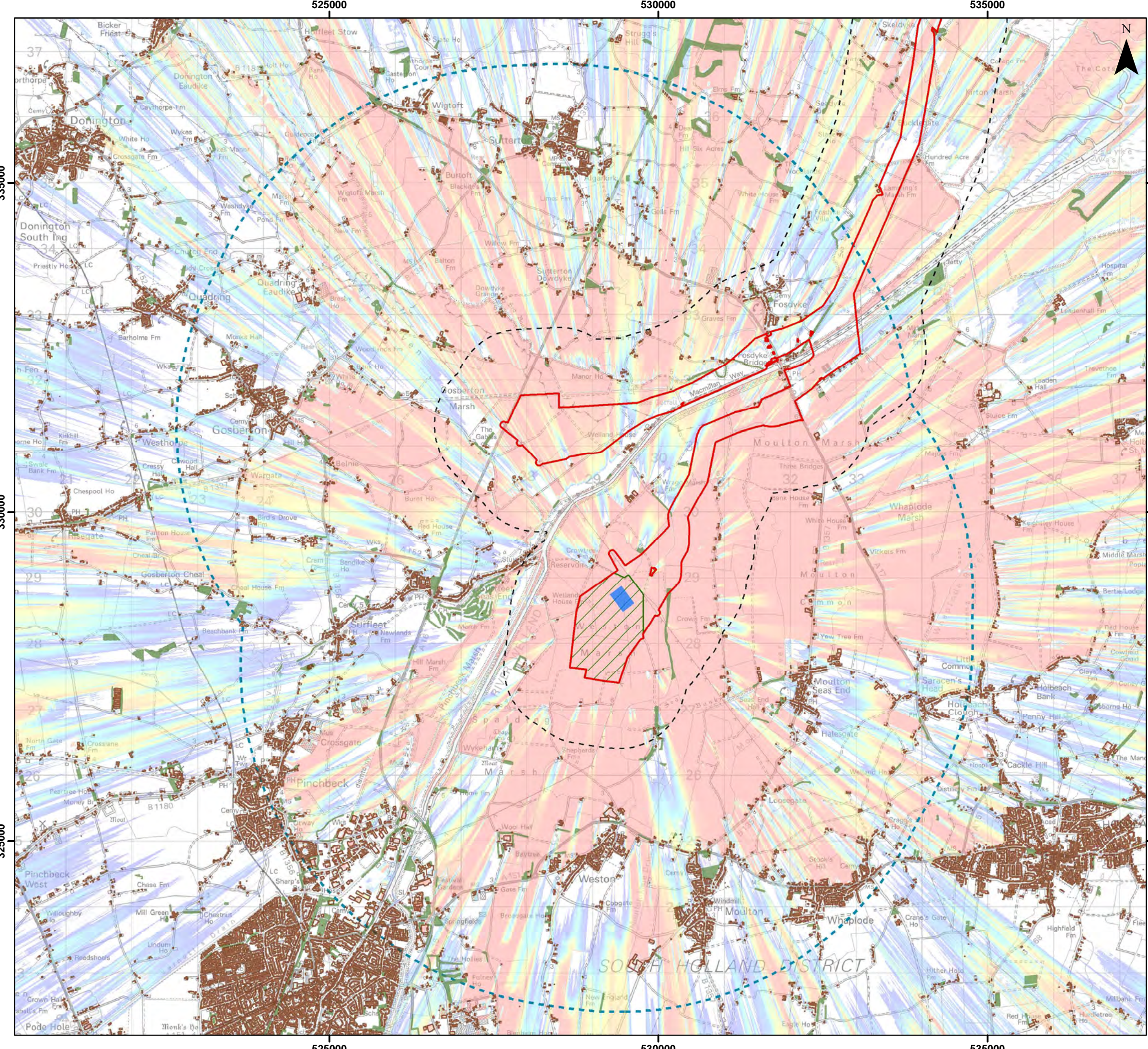
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 Revision: 4



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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Weston Marsh South OnSS Search Area
- Western Marsh OnSS 5km Study Area
- Building
- Woodland

Weston Marsh South OnSS Screened ZTV*
 (Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)

High
 Low

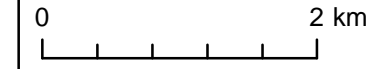
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Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Screened ZTV
 Weston Marsh South OnSS

Figure 28.10



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








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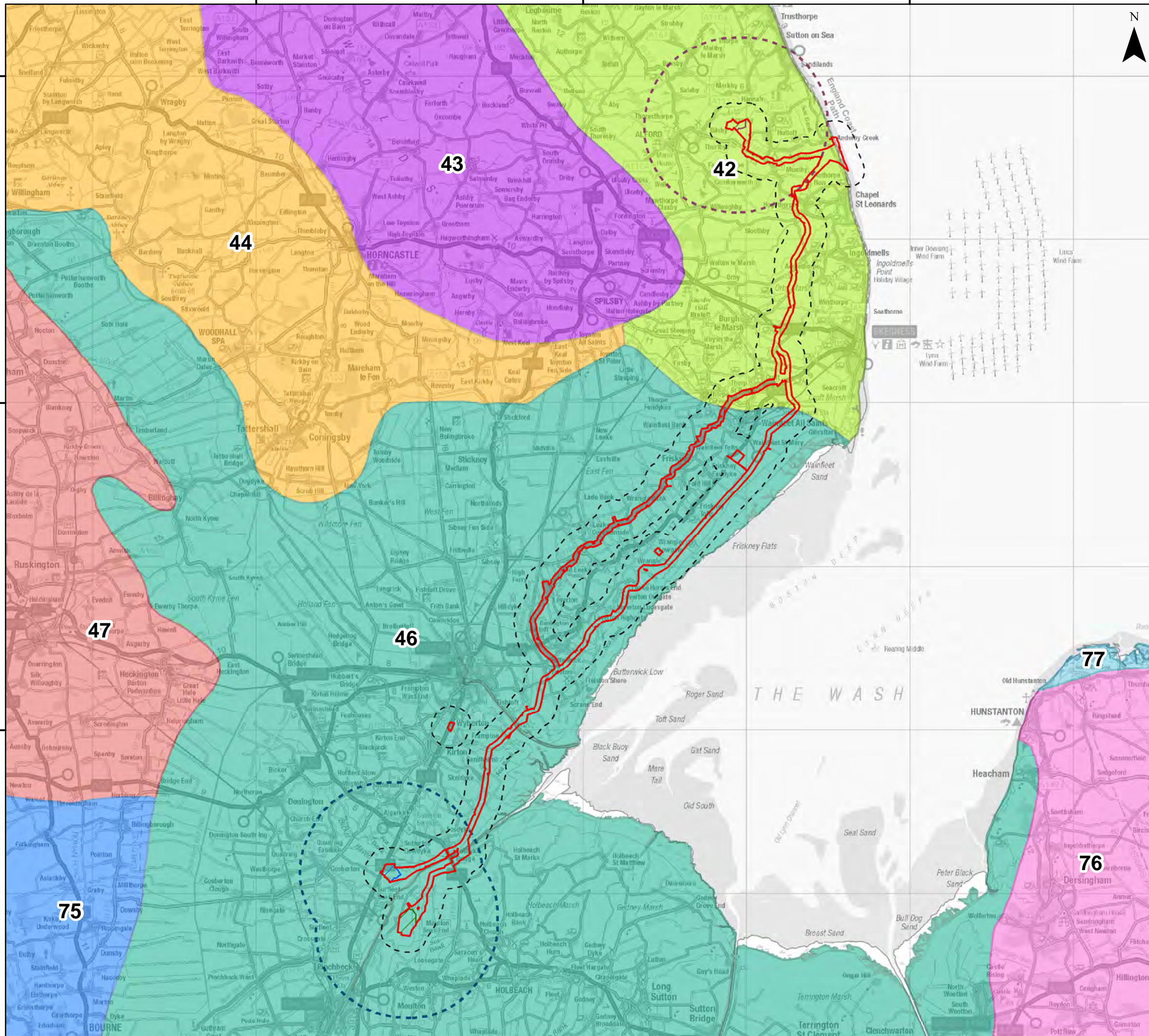
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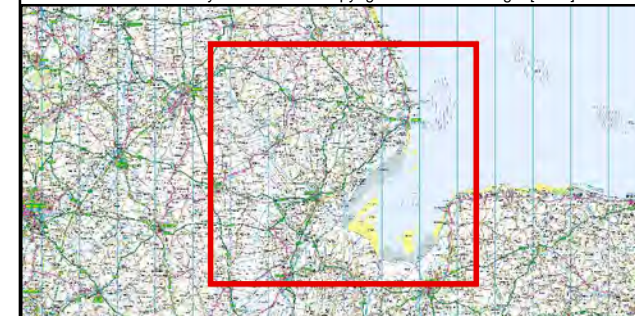


Legend

-  PEIR Boundary
-  PEIR Boundary 1km Study Area
-  Lincolnshire Node OnSS Search Area
-  Weston Marsh North OnSS Search Area
-  Weston Marsh South OnSS Search Area
-  Lincolnshire Node OnSS 5km Study Area
-  Western Marsh OnSS 5km Study Area
-  42 - Lincolnshire Coast and Marshes
-  43 - Lincolnshire Wolds
-  44 - Central Lincolnshire Vale
-  45 - Northern Lincolnshire Edge with Coversands
-  46 - The Fens
-  47 - Southern Lincolnshire Edge
-  75 - Kesteven Uplands
-  76 - North West Norfolk
-  77 - North Norfolk Coast



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Coordinate System: British National Grid

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Scale: 1:225,000

National Landscape Character Areas

Figure 28.11

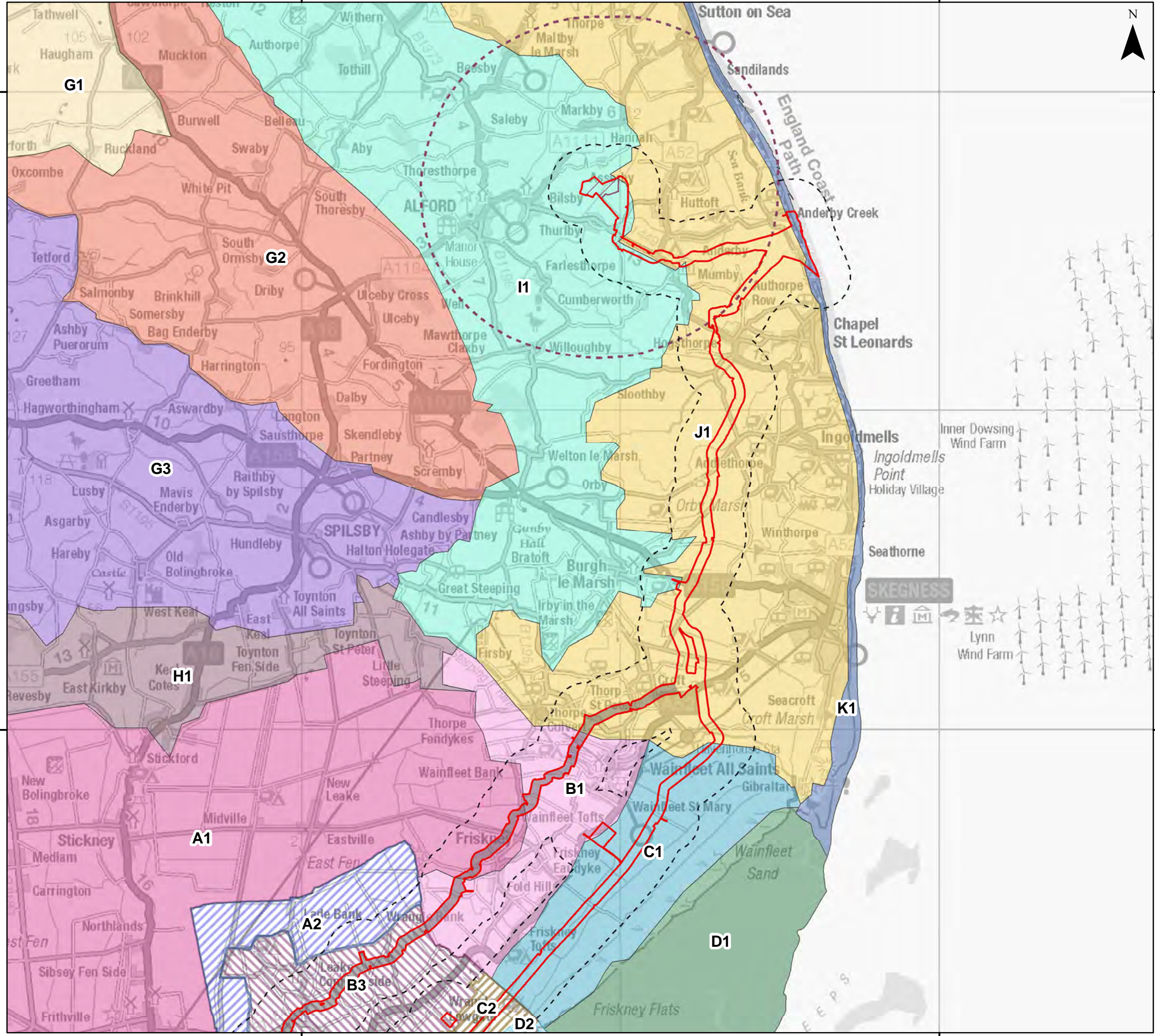


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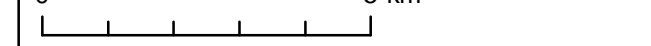
Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- Lincolnshire Node OnSS Search Area
- Lincolnshire Node OnSS 5km Study Area
- East Lindsey Landscape Character Assessment 2011**
- A1 - Stickney to Sibsey Reclaimed Fen
- B1 - Wainfleet All Saints to Friskney Settled Fen
- C1 - Wainfleet Reclaimed Saltmarsh
- D1 - Wainfleet Wash Saltmarsh
- G1 - Binbrook to Telford Wolds Farmland
- G2 - Little Cawthorpe to Skendleby Wolds Farmland
- G3 - Hainton to Toyton All Saints Wolds Farmland
- H1 - Mareham to Lettle Steeping Fenside Woodland & Farmland
- I1 - Holton le Clay to Great Steeping Middle Marsh
- J1 - Tetney Lock to Skegness Coastal Outmarsh
- K1 - Donna Nook to Gibraltar Point Naturalistic Coast
- Boston District Landscape Character Assessment 2009**
- A2 - Wrangle Common to Freistonings Reclaimed Fen
- B3 - Wrangle to Cowbridge Settled Fen
- C2 - Glebe Farm Reclaimed Saltmarsh
- D2 - Freiston Low to Wrangle Flats Wash Saltmarsh

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Coordinate System: British National Grid



Scale: 1:115,000

District Landscape Character Areas
 Lincolnshire Node

Figure 28.12



Date: 14/04/2023
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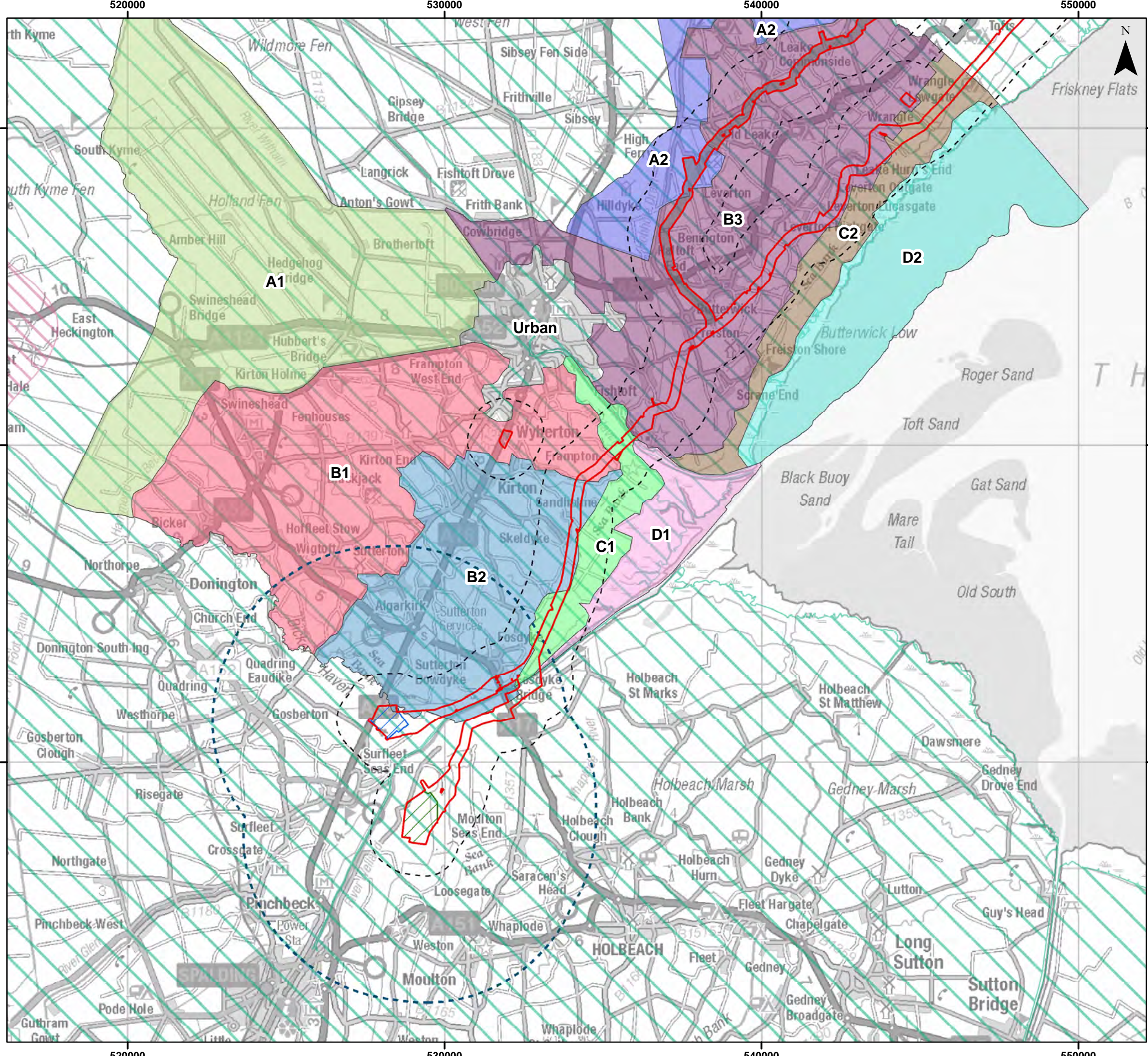
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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- Weston Marsh North OnSS Search Area
- Weston Marsh South OnSS Search Area
- Western Marsh OnSS 5km Study Area
- Boston District Landscape Character Assessment 2009**
- A1 - Holland Reclaimed Fen
- A2 - Wrangle Common to Freistonings Reclaimed Fen
- B1 - Bicker to Wyberton Settled Fen
- B2 - Frampton to Fosdyke Settled Fen
- B3 - Wrangle to Cowbridge Settled Fen
- C1 - Welland to Haven Reclaimed Saltmarsh
- C2 - Glebe Farm Reclaimed Saltmarsh
- D1 - Welland to Haven Wash Saltmarsh
- D2 - Freiston Low to Wrangle Flats Wash Saltmarsh
- National Landscape Character Areas**
- 46 - The Fens
- 47 - Southern Lincolnshire Edge

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Coordinate System: British National Grid
 0 5 km

Scale: 1:115,000

District/National Landscape Character Areas
 Weston Marsh

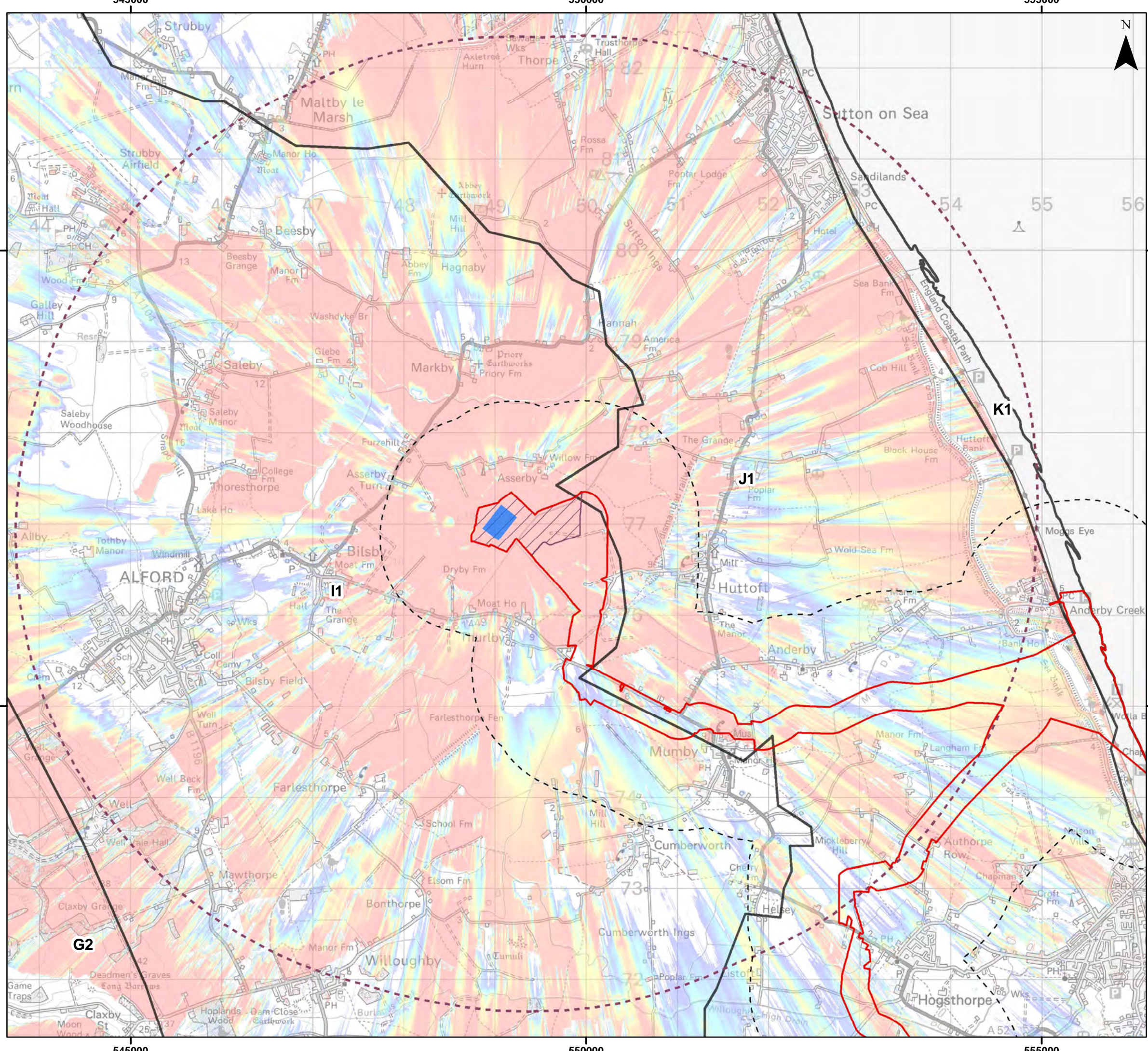
Figure 28.13



Date: 14/04/2023
 Produced By: CS
 Revision: 4



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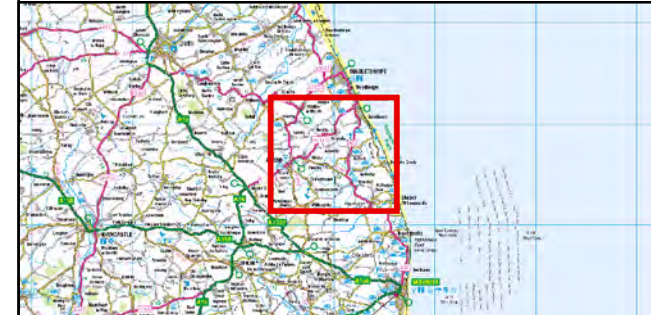
Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Lincolnshire Node OnSS Search Area
- Lincolnshire Node OnSS 5km Study Area
- East Lindsey Landscape Character Assessment 2011
- G2 - Little Cawthorpe to Skendleby Wolds Farmland
- I1 - Holton le Clay to Great Steeping Middle Marsh
- J1 - Tetney Lock to Skegness Coastal Outmarsh
- K1 - Donna Nook to Gibraltar Point Naturalistic Coast
- Lincolnshire Node OnSS Screened ZTV*
(Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)
- High
- Low

*This ZTV shows higher to lower visibility based on the amount of onshore substation visible as represented by a perimeter of points with a 5m spacing arranged around the upper perimeter of the maximum substation 3D envelope. The ZTV does not indicate the decrease in scale that occurs with increased distance from the onshore substation.

Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Coordinate System: British National Grid
0 2 km

Scale: 1:40,000

ZTV with LCA
Lincolnshire Node

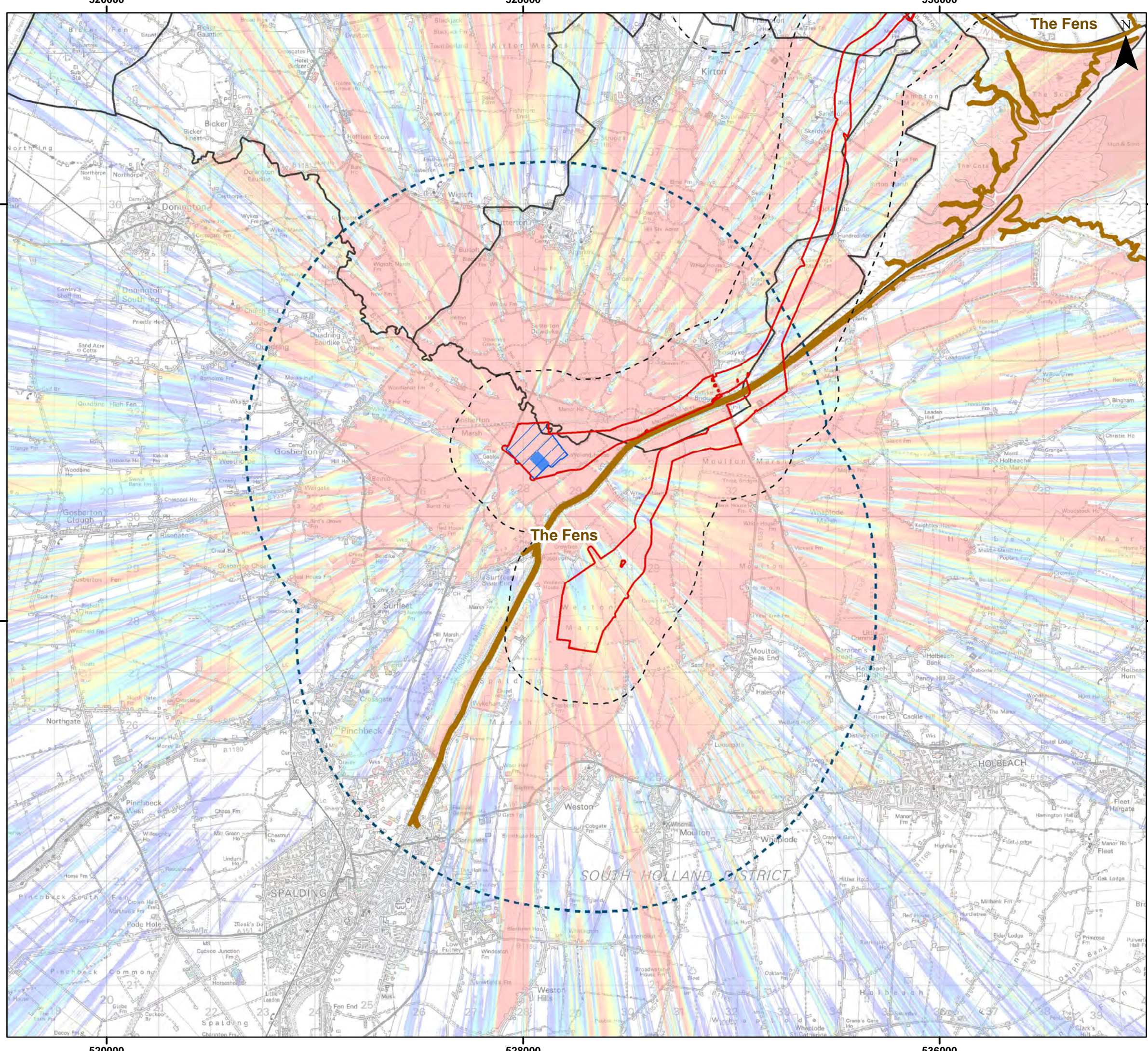
Figure 28.14



Date: 14/04/2023
Produced By: CS
Revision: 4



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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Weston Marsh North OnSS Search Area
- Western Marsh OnSS 5km Study Area
- Boston District Landscape Character Assessment 2009
- A1 - Holland Reclaimed Fen
- B1 - Bicker to Wyberton Settled Fen
- B2 - Frampton to Fosdyke Settled Fen
- B3 - Wrangle to Cowbridge Settled Fen
- C1 - Welland to Haven Reclaimed Saltmarsh
- C2 - Glebe Farm Reclaimed Saltmarsh
- D1 - Welland to Haven Wash Saltmarsh
- D2 - Freiston Low to Wrangle Flats Wash Saltmarsh

National Landscape Character Areas

- 46 - The Fens

Weston Marsh North OnSS Screened ZTV*
 (Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)

- High
- Low

*This ZTV shows higher to lower visibility based on the amount of onshore substation visible as represented by a perimeter of points with a 5m spacing arranged around the upper perimeter of the maximum substation 3D envelope. The ZTV does not indicate the decrease in scale that occurs with increased distance from the onshore substation.

Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Coordinate System: British National Grid
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 Scale: 1:70,000

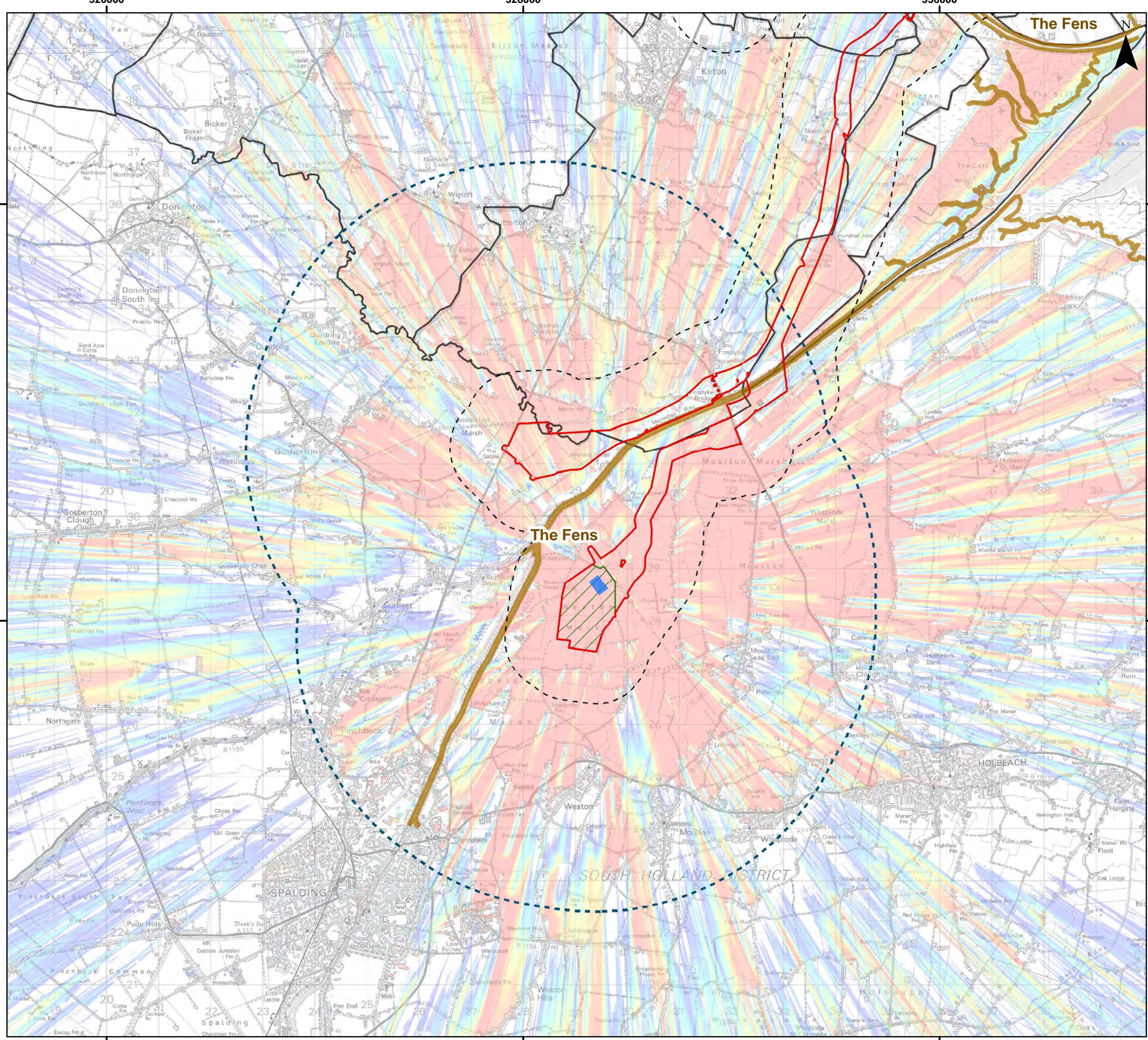
ZTV with NCA and LCA
 Weston Marsh North

Figure 28.15



Date: 14/04/2023
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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Weston Marsh South OnSS Search Area
- Western Marsh OnSS 5km Study Area

Boston District Landscape Character Assessment 2009

- A1 - Holland Reclaimed Fen
- B1 - Bicker to Wyberton Settled Fen
- B2 - Frampton to Fosdyke Settled Fen
- B3 - Wrangle to Cowbridge Settled Fen
- C1 - Welland to Haven Reclaimed Saltmarsh
- C2 - Glebe Farm Reclaimed Saltmarsh
- D1 - Welland to Haven Wash Saltmarsh
- D2 - Freiston Low to Wrangle Flats Wash Saltmarsh

National Landscape Character Areas

- 46 - The Fens

Weston Marsh South OnSS Screened ZTV*
(Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)

- High
- Low

*This ZTV shows higher to lower visibility based on the amount of onshore substation visible as represented by a perimeter of points with a 5m spacing arranged around the upper perimeter of the maximum substation 3D envelope. The ZTV does not indicate the decrease in scale that occurs with increased distance from the onshore substation.

Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Coordinate System: British National Grid
 0 2 km
 Scale: 1:70,000

ZTV with NCA and LCA
 Weston Marsh South

Figure 28.16



OUTER DOWSING
OFFSHORE WIND



open
optimised environments

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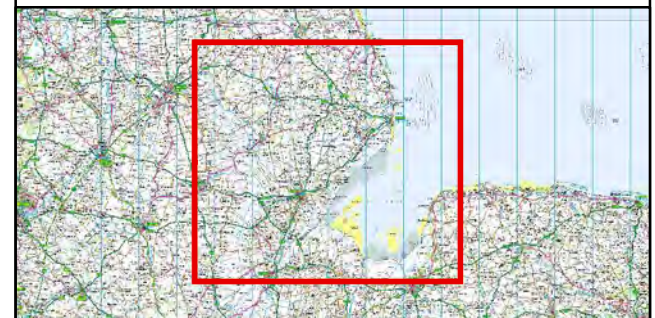
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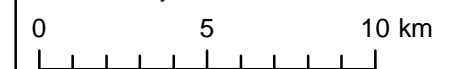
Legend

-  PEIR Boundary
-  PEIR Boundary 1km Study Area
-  Lincolnshire Node OnSS Search Area
-  Weston Marsh North OnSS Search Area
-  Weston Marsh South OnSS Search Area
-  Lincolnshire Node OnSS 5km Study Area
-  Western Marsh OnSS 5km Study Area
-  Conservation Areas
-  Ancient Woodland
-  Heritage Coasts England
-  Local Nature Reserves
-  Registered Parks and Gardens
-  Areas of Outstanding Natural Beauty
-  National Nature Reserves

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Coordinate System: British National Grid



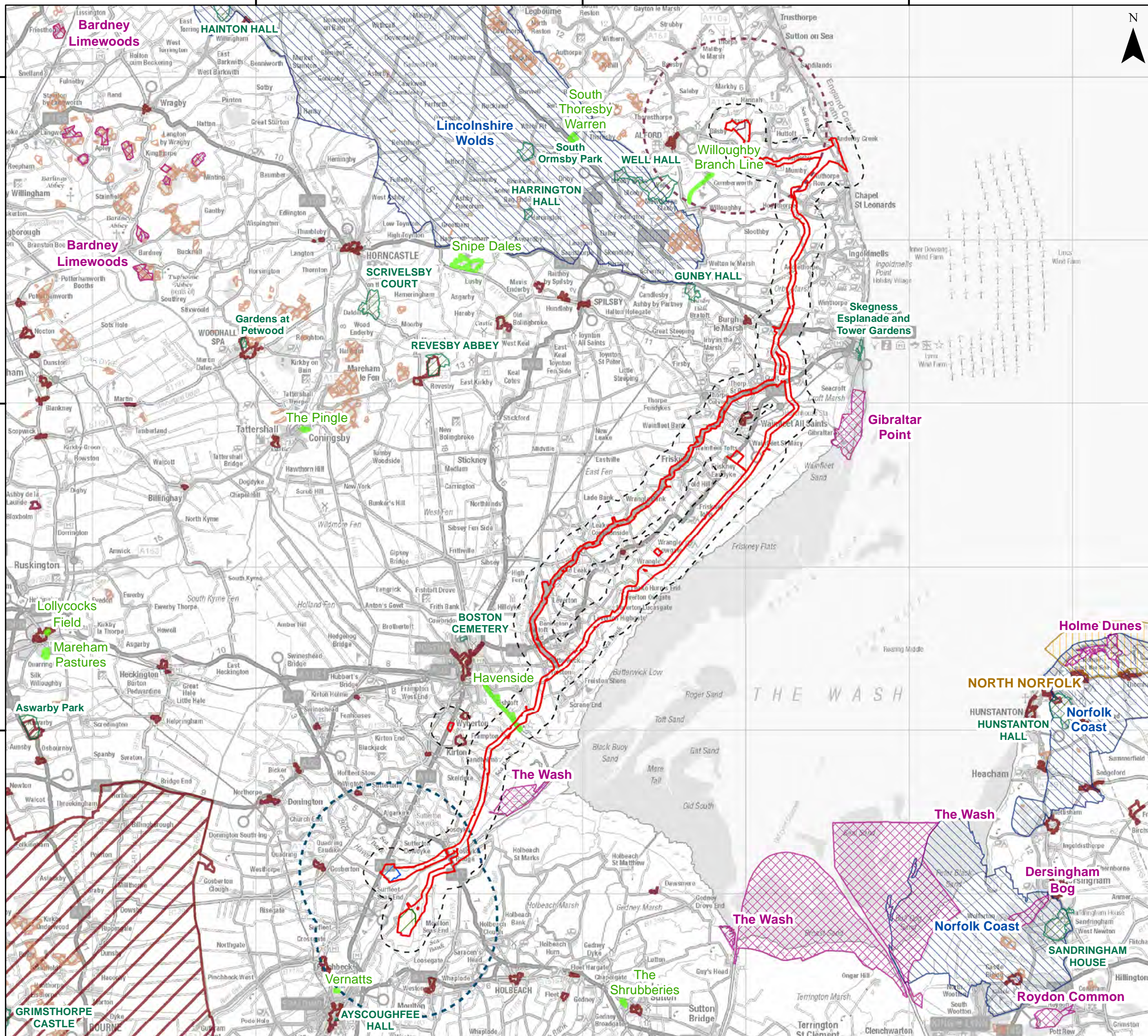
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Landscape Designations

Figure 28.17



Date: 14/04/2023
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 Revision: 4



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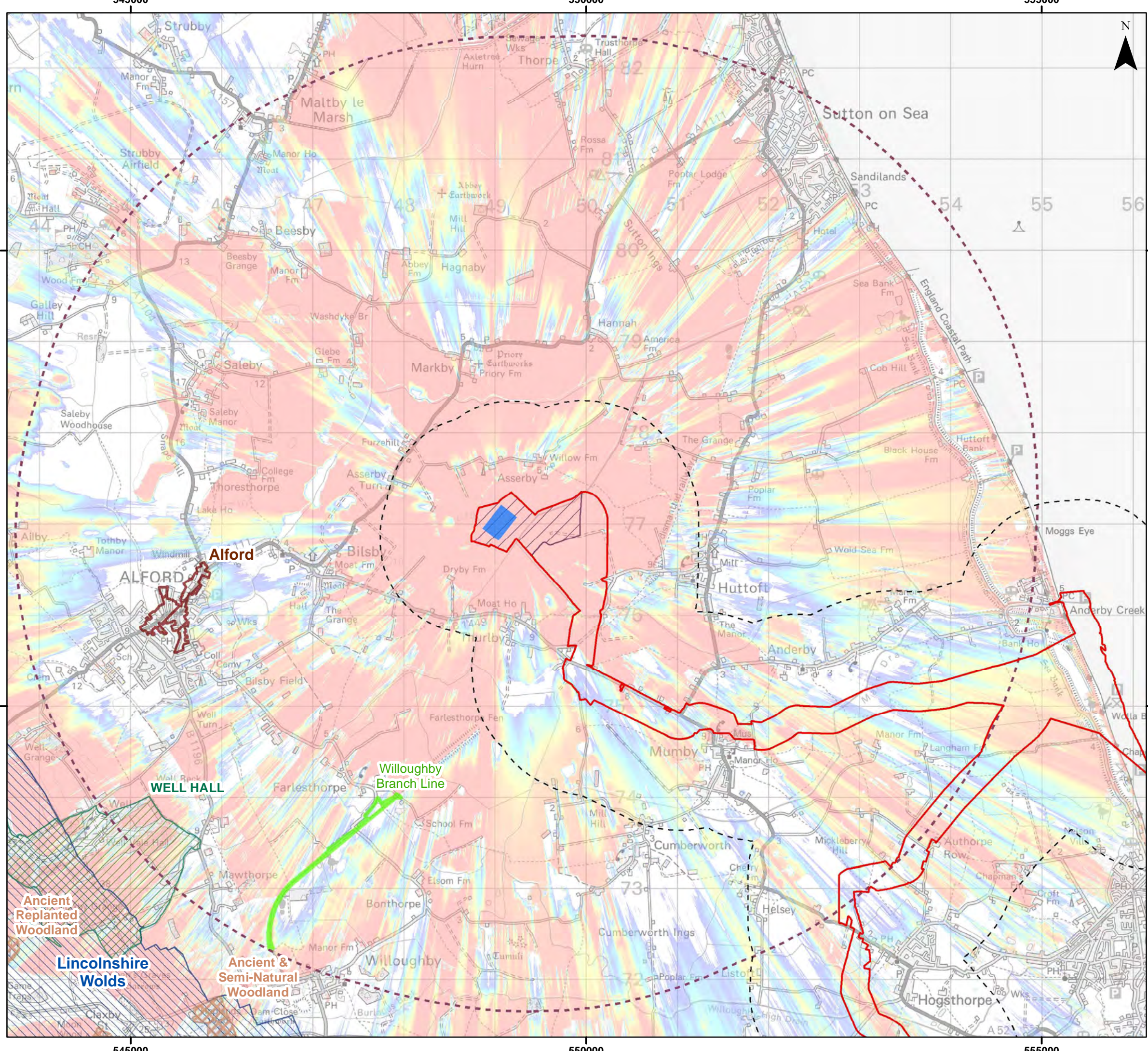
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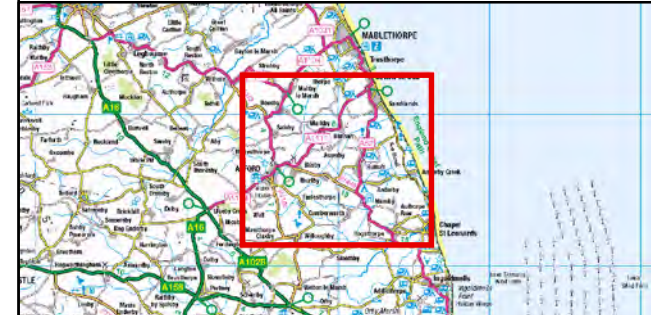
- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Lincolnshire Node OnSS Search Area
- Lincolnshire Node OnSS 5km Study Area
- Conservation Areas
- Ancient Woodland
- Local Nature Reserves
- Registered Parks and Gardens
- Areas of Outstanding Natural Beauty
- Lincolnshire Node OnSS Screened ZTV*
(Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)

High
Low

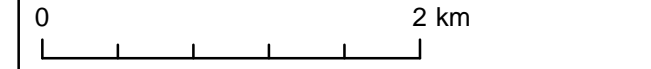
*This ZTV shows higher to lower visibility based on the amount of onshore substation visible as represented by a perimeter of points with a 5m spacing arranged around the upper perimeter of the maximum substation 3D envelope. The ZTV does not indicate the decrease in visibility that occurs with increased distance from the onshore substation.

Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Coordinate System: British National Grid



Scale: 1:40,000

ZTV with Landscape Designations
Lincolnshire Node

Figure 28.18



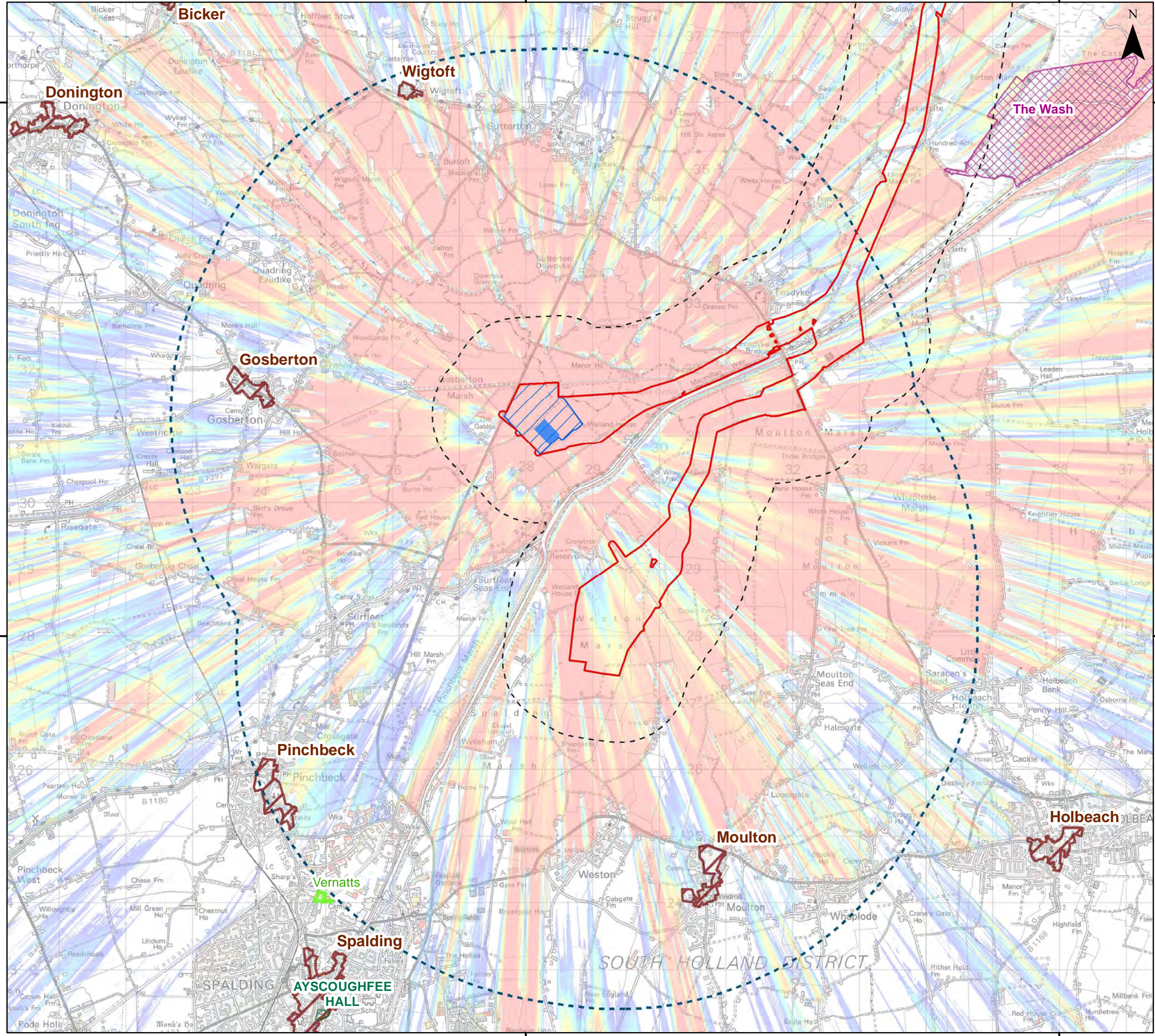
Date: 14/04/2023
 Produced By: CS
 Revision: 4



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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Weston Marsh North OnSS Search Area
- Western Marsh OnSS 5km Study Area
- Conservation Areas
- Local Nature Reserves
- Registered Parks and Gardens
- National Nature Reserves

Weston Marsh North OnSS Screened ZTV*
 (Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)

High
 Low

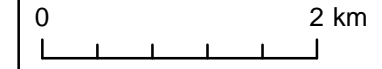
*This ZTV shows higher to lower visibility based on the amount of onshore substation visible as represented by a perimeter of points with a 5m spacing arranged around the upper perimeter of the maximum substation 3D envelope. The ZTV does not indicate the decrease in visibility that occurs with increased distance from the onshore substation.

Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Coordinate System: British National Grid



Scale: 1:55,000

ZTV with Landscape Designations
 Weston Marsh North

Figure 28.19



Date: 14/04/2023
 Produced By: CS
 Revision: 4



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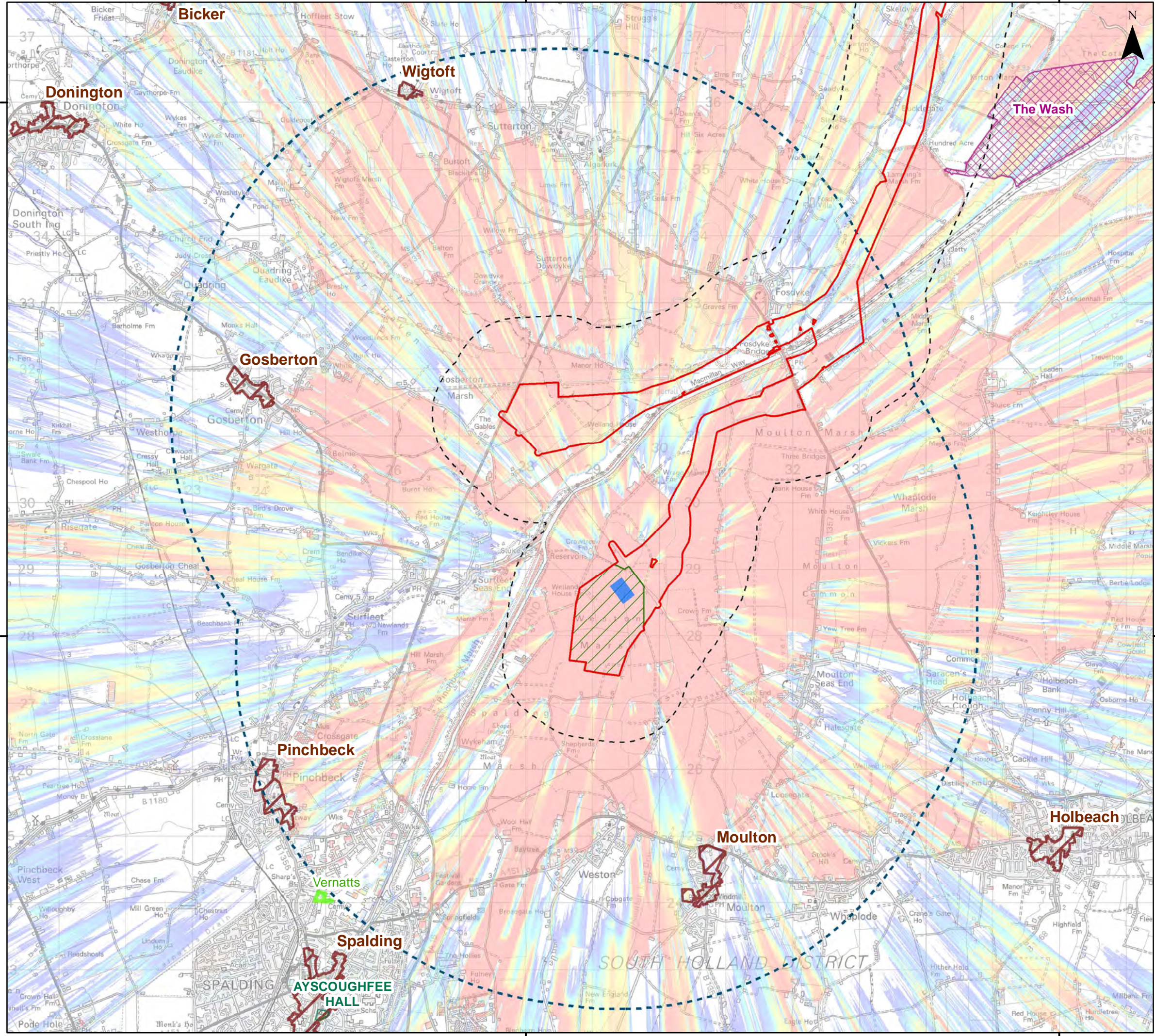
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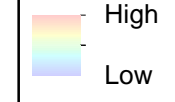
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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Weston Marsh South OnSS Search Area
- Western Marsh OnSS 5km Study Area
- Conservation Areas
- Local Nature Reserves
- Registered Parks and Gardens
- National Nature Reserves

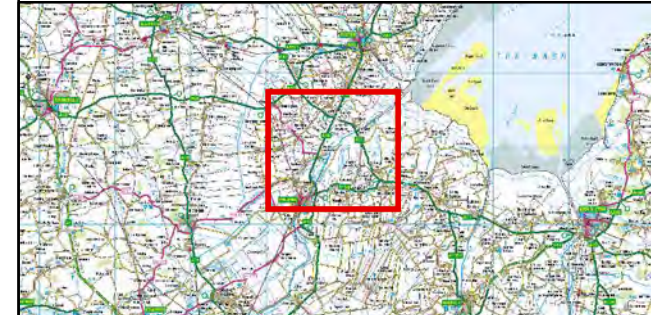
Weston Marsh South OnSS Screened ZTV*
 (Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)



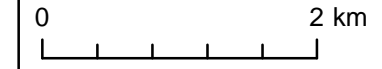
*This ZTV shows higher to lower visibility based on the amount of onshore substation visible as represented by a perimeter of points with a 5m spacing arranged around the upper perimeter of the maximum substation 3D envelope. The ZTV does not indicate the decrease in scale that occurs with increased distance from the onshore substation.

Substation Height:	19m	Observer height:	2m
DSM:	EA LiDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Coordinate System: British National Grid



Scale: 1:55,000

ZTV with Landscape Designations
 Weston Marsh South

Figure 28.20



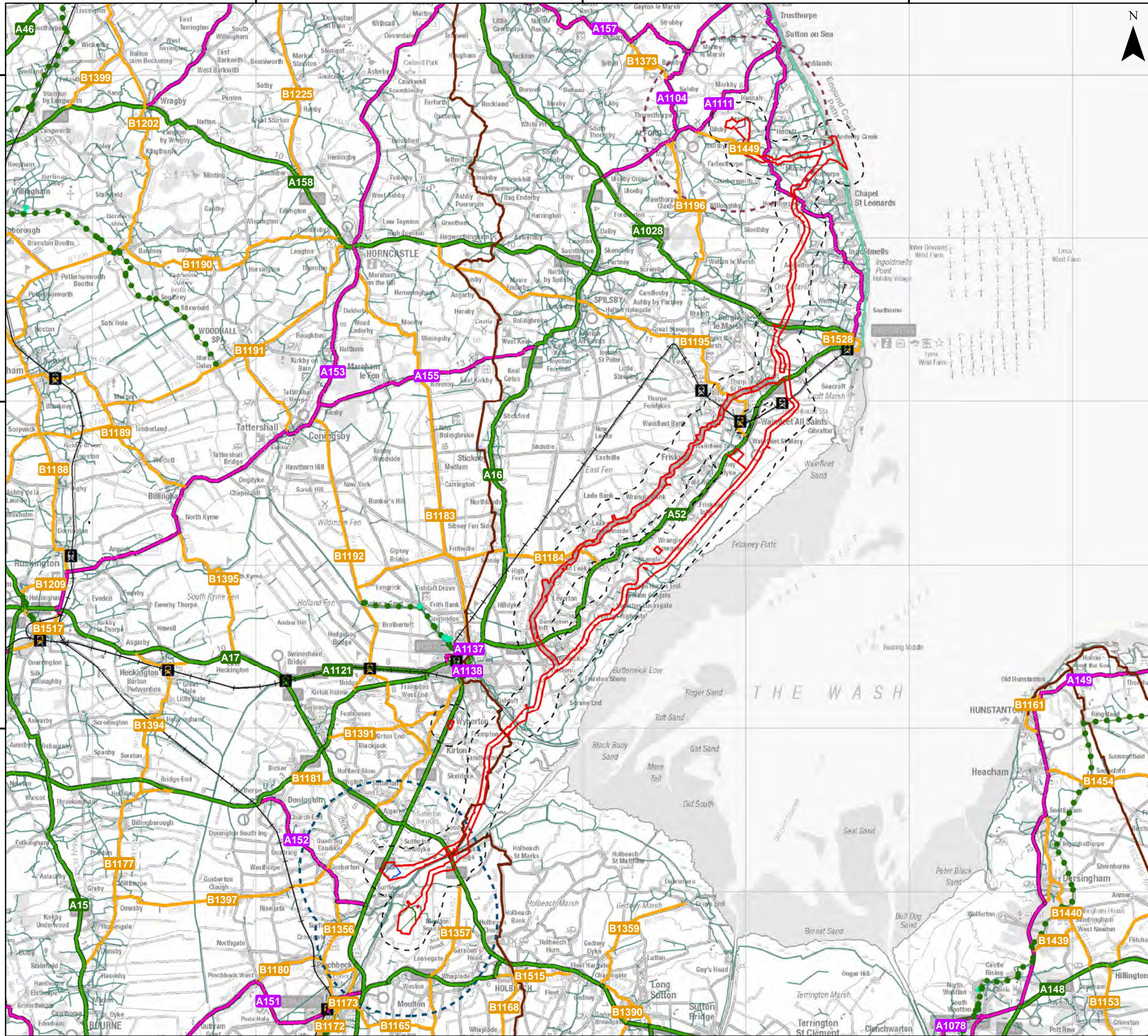
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 Revision: 4



















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Legend

-  PEIR Boundary
-  PEIR Boundary 1km Study Area
-  Lincolnshire Node OnSS Search Area
-  Weston Marsh North OnSS Search Area
-  Weston Marsh South OnSS Search Area
-  Lincolnshire Node OnSS 5km Study Area
-  Western Marsh OnSS 5km Study Area
-  Primary Road
-  B Road
-  Railway
-  Railway Stations
-  Public Right of Way
-  Greenwich Meridian Trail
-  Coastal Paths
-  National Cycle Network
-  National Cycle Network Link

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Coordinate System: British National Grid
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Scale: 1:225,000

Principle Visual Receptors

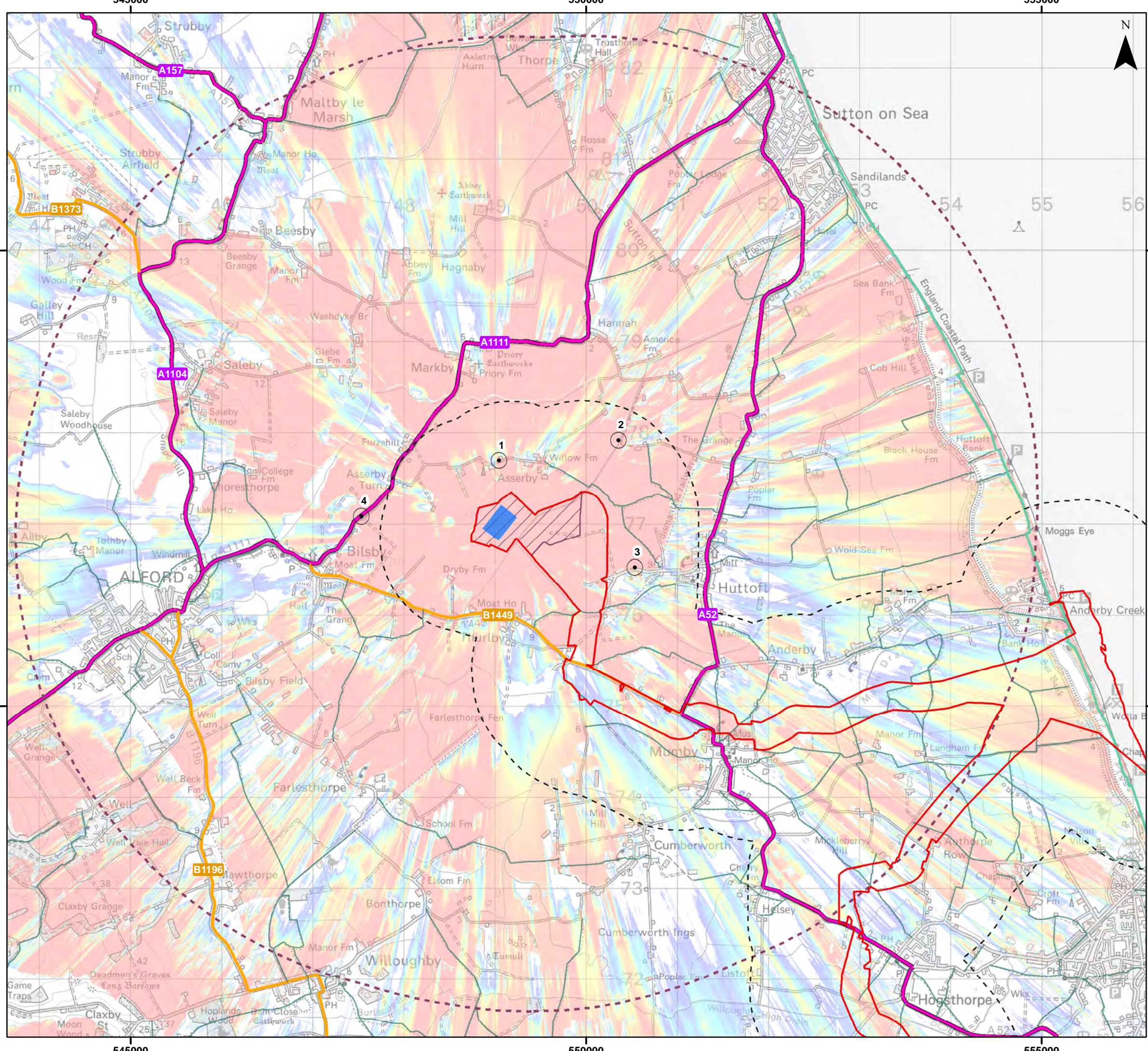
Figure 28.21



Date: 14/04/2023
 Produced By: CS
 Revision: 4



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Legend

- PEIR Boundary
- PEIR Boundary 1km Study
- OnSS Indicative Layout Footprint
- Lincolnshire Node OnSS Search
- Lincolnshire Node OnSS 5km Study
- A Road
- B Road
- Coastal Paths
- Public Right of Way
- Viewpoints
- 1 - Asserby Road
- 2 - Mill Lane
- 3 - Alford Road
- 4 - Bilsby

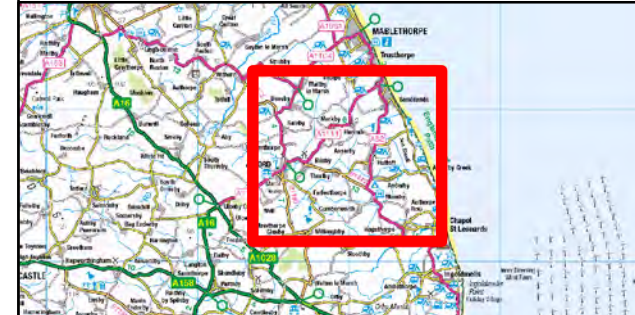
Lincolnshire Node OnSS Screened ZTV*
 (Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)

High
 Low

*This ZTV shows higher to lower visibility based on the amount of onshore substation visible as represented by a perimeter of points with a 5m spacing arranged around the upper perimeter of the maximum substation 3D envelope. The ZTV does not indicate the decrease in scale that occurs with increased distance from the onshore substation.

Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Coordinate System: British National Grid
 0 2 km

Scale: 1:40,000

Lincolnshire Node ZTV
 OnSS Viewpoints and PVR

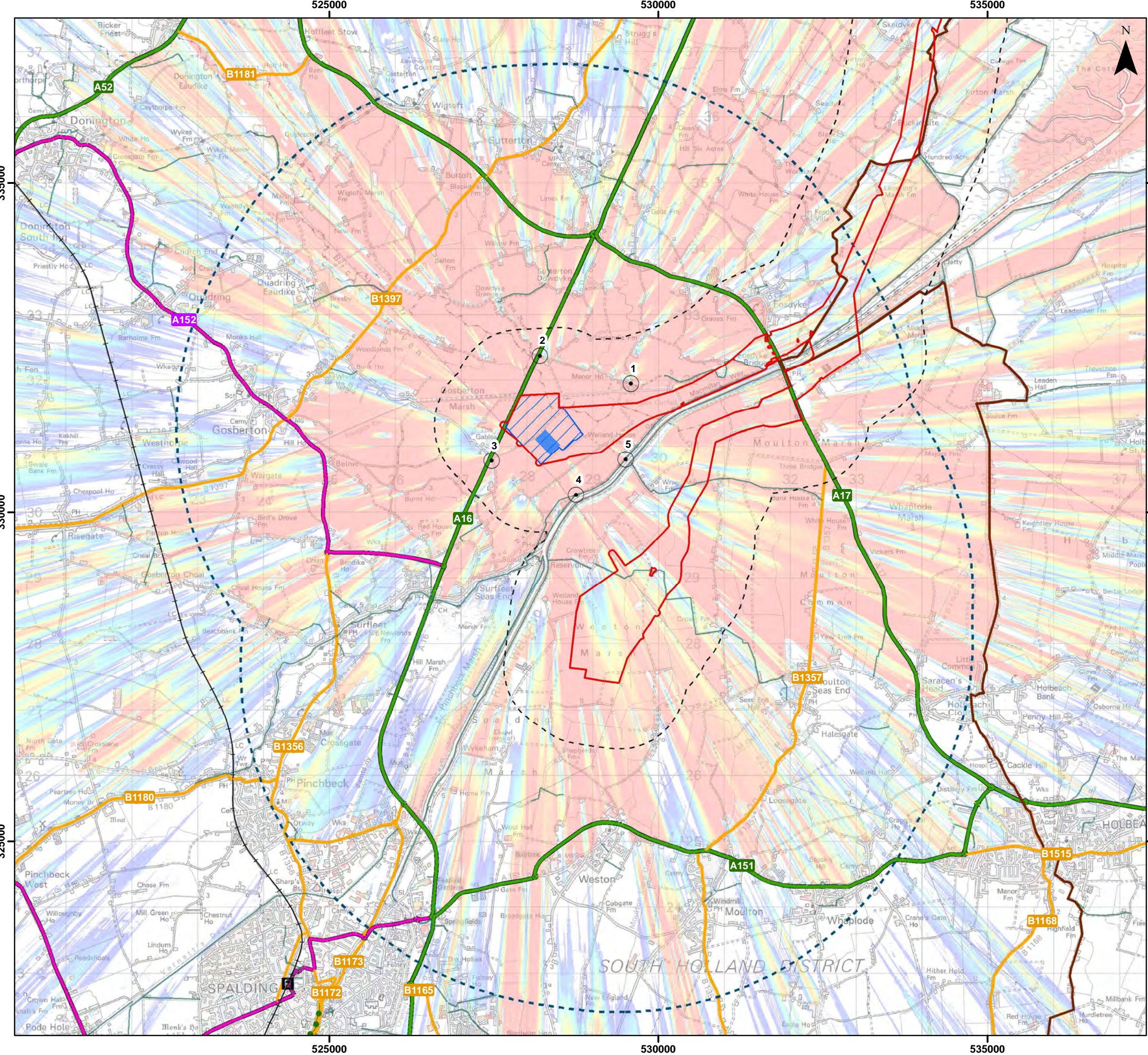
Figure 28.22



Date: 25/05/2023
 Produced By: CS
 Revision: 5



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- ### Legend
- PEIR Boundary
 - PEIR Boundary 1km Study Area
 - OnSS Indicative Layout Footprint
 - Weston Marsh North OnSS Search Area
 - Western Marsh OnSS 5km Study Area
 - Primary Road
 - A Road
 - B Road
 - Railway
 - Railway Stations
 - Public Right of Way
 - Greenwich Meridian Trail
 - National Cycle Network
 - Viewpoints
 - 1 - Marsh Lane near Manor House
 - 2 - A16 near Marsh Lane junction
 - 3 - A16 at Surfleet Bank junction
 - 4 - Macmillan Way at Surfleet Bank
 - 5 - Macmillan Way near Welland House Farm

Weston Marsh North OnSS Screened ZTV*
 (Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)

High
 Low

*This ZTV shows higher to lower visibility based on the amount of onshore substation visible as represented by a perimeter of points with a 5m spacing arranged around the upper perimeter of the maximum substation 3D envelope. The ZTV does not indicate the decrease in scale that occurs with increased distance from the onshore substation.

Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Coordinate System: British National Grid

0 2 km

Scale: 1:55,000

Weston Marsh North ZTV
 OnSS Viewpoints and PVR

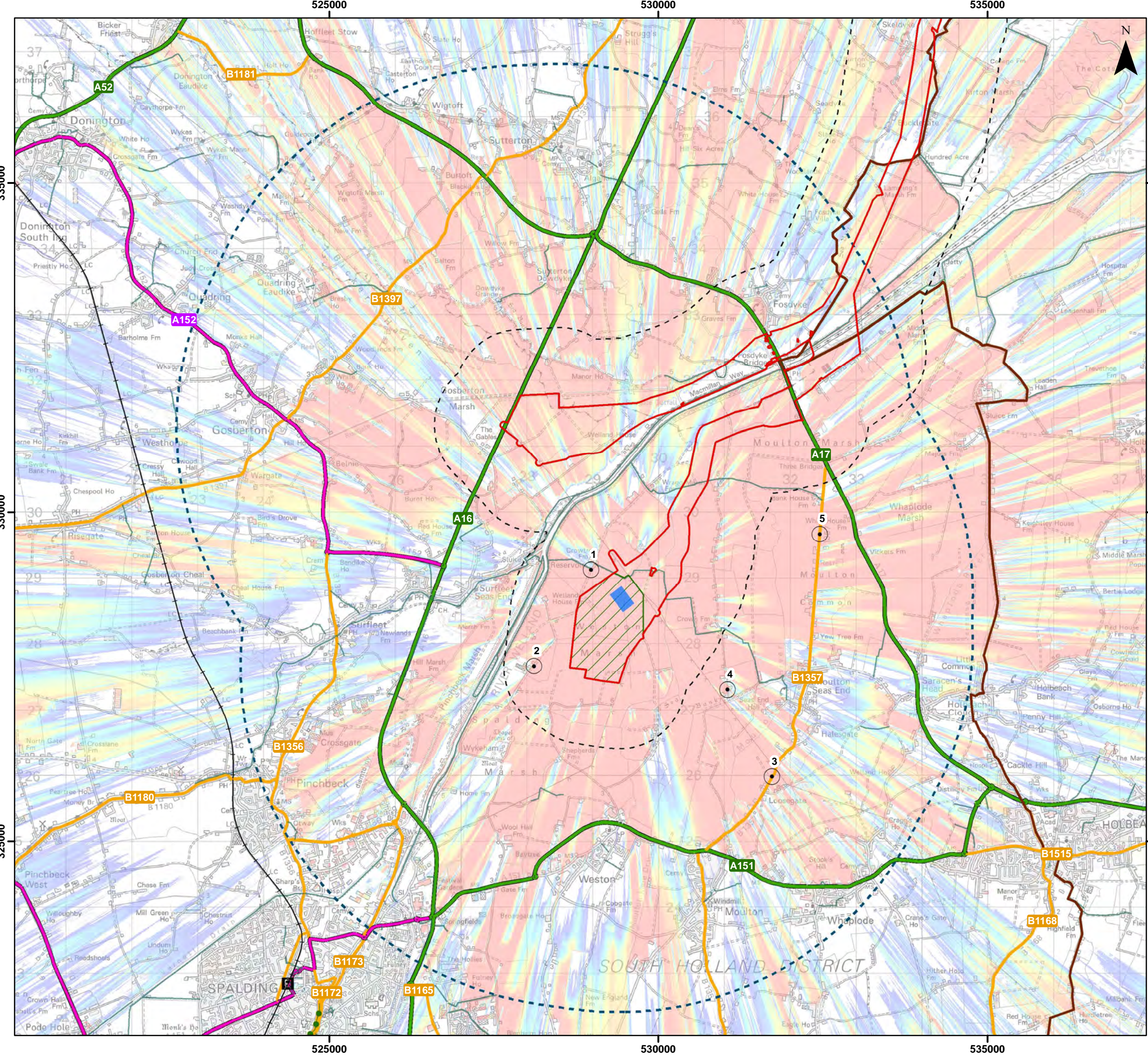
Figure 28.23



Date: 14/04/2023
 Produced By: CS
 Revision: 4



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Legend

- PEIR Boundary
- PEIR Boundary 1km Study Area
- OnSS Indicative Layout Footprint
- Weston Marsh South OnSS Search Area
- Western Marsh OnSS 5km Study Area
- Primary Road
- A Road
- B Road
- Railway
- Railway Stations
- Public Right of Way
- Greenwich Meridian Trail
- National Cycle Network
- Viewpoints
 - 1 - Marsh Road near Crowtree Farm
 - 2 - Marsh Road near Kindergarten Nursery
 - 3 - B1357 near Loosegate
 - 4 - Carrington Road south
 - 5 - B1357 Common Road north

Weston Marsh South OnSS Screened ZTV*

(Theoretical Visibility of a large number of points arranged around the upper perimeter of the maximum substation 3D envelope.)

*This ZTV shows higher to lower visibility based on the amount of onshore substation visible as represented by a perimeter of points with a 5m spacing arranged around the upper perimeter of the maximum substation 3D envelope. The ZTV does not indicate the decrease in scale that occurs with increased distance from the onshore substation.

Substation Height:	19m	Observer height:	2m
DSM:	EA LIDAR DSM 2m	Surface features:	Included
DSM resolution:	2m	Earth curvature:	Included

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Coordinate System: British National Grid

Scale: 1:55,000

Weston Marsh South ZTV
 OnSS Viewpoints and PVR

Figure 28.24



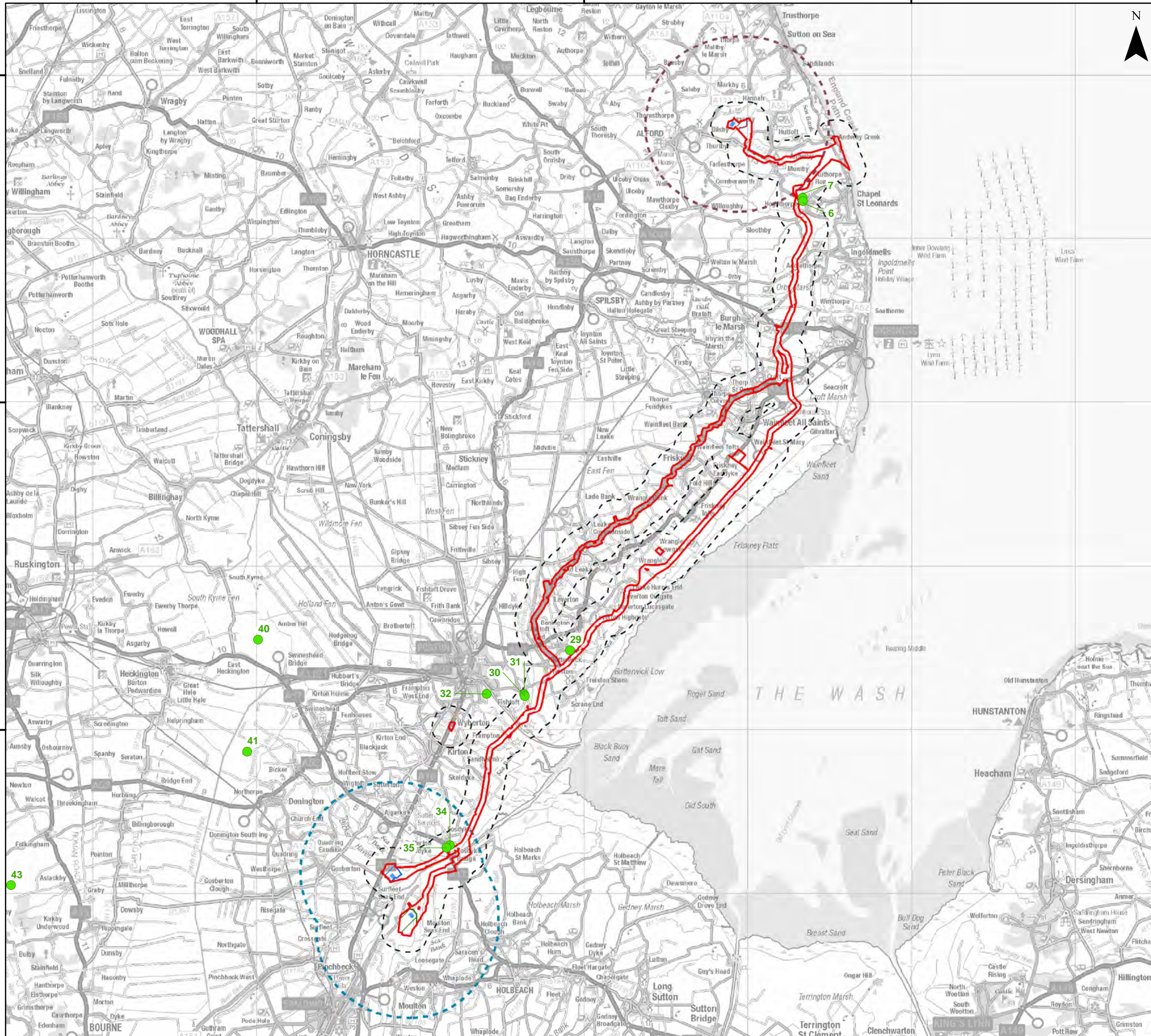
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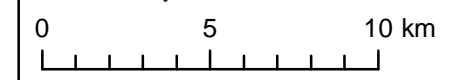
Legend

-  PEIR Boundary
 -  PEIR Boundary 1km Study Area
 -  OnSS Indicative Layout Footprint
 -  Lincolnshire Node OnSS Search Area
 -  Weston Marsh North OnSS Search Area
 -  Weston Marsh South OnSS Search Area
 -  Western Marsh OnSS 5km Study Area
 -  Lincolnshire Node OnSS 5km Study Area
 -  Cumulative Sites
- 6 - N/084/01712/22
 7 - N/084/00809/19
 29 - B/21/0196
 30 - B/20/0489
 31 - B/20/0488
 32 - NSIP
 34 - B/21/0419
 35 - B/18/0227
 40 - NSIP
 41 - B/21/0443
 43 - NSIP

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 Nationally Significant Infrastructure Project Locations Sourced from <https://infrastructure.planninginspectorate.gov.uk/>
 Planning Application Locations Provided by Landmark Geodata



Coordinate System: British National Grid



Scale: 1:225,000

Cumulative Developments

Figure 28.25



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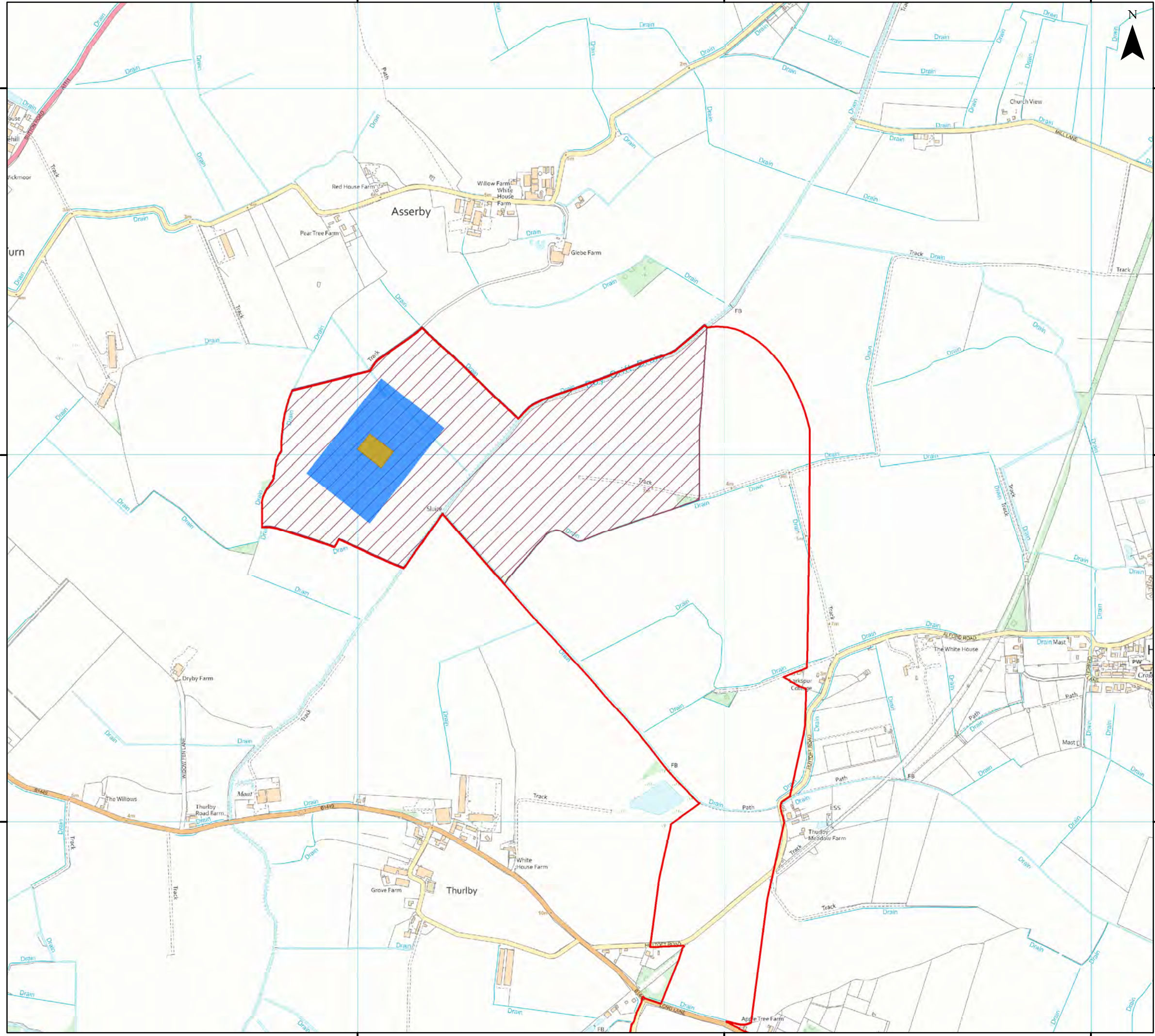
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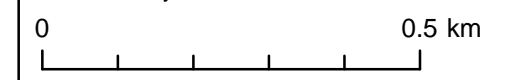
Legend

-  PEIR Boundary
-  OnSS Indicative Layout Building
-  OnSS Indicative Layout Footprint
-  Lincolnshire Node OnSS Search Area

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Coordinate System: British National Grid



Scale: 1:10,000

Indicative Layout
Lincolnshire Node Substation (1 of 3)

Figure 28.26



Date: 14/04/2023
 Produced By: CS
 Revision: 4

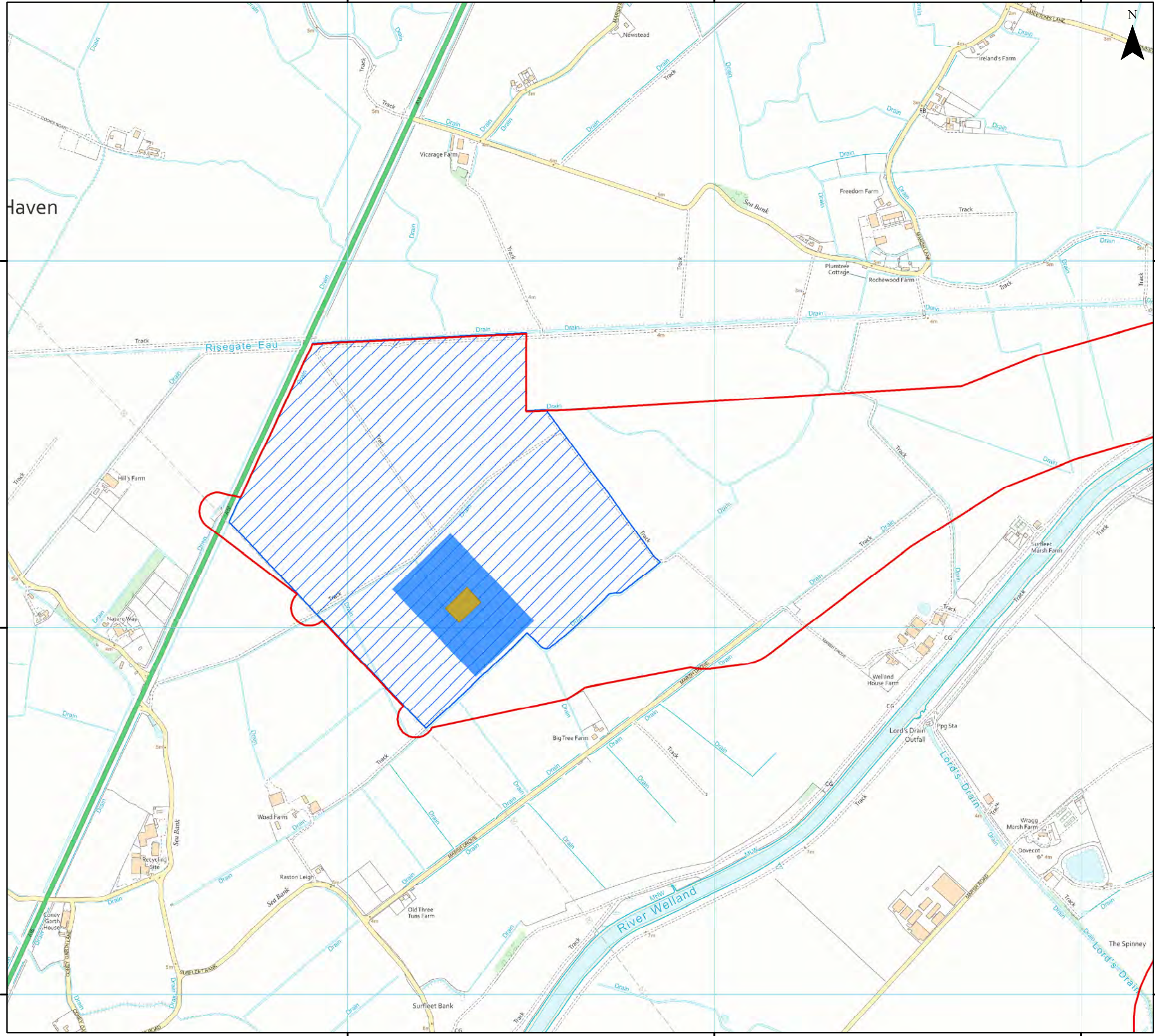


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

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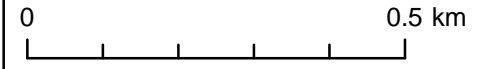
Legend

-  PEIR Boundary
-  OnSS Indicative Layout Building
-  OnSS Indicative Layout Footprint
-  Weston Marsh North OnSS Search Area

Source:
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Coordinate System: British National Grid



Scale: 1:10,000

Indicative Layout
Weston Marsh North Substation (2 of 3)

Figure 28.27



Date: 14/04/2023
 Produced By: CS
 Revision: 4



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Legend

- PEIR Boundary
- OnSS Indicative Layout Building
- OnSS Indicative Layout Footprint
- Weston Marsh South OnSS Search Area

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Coordinate System: British National Grid
 0 0.5 km

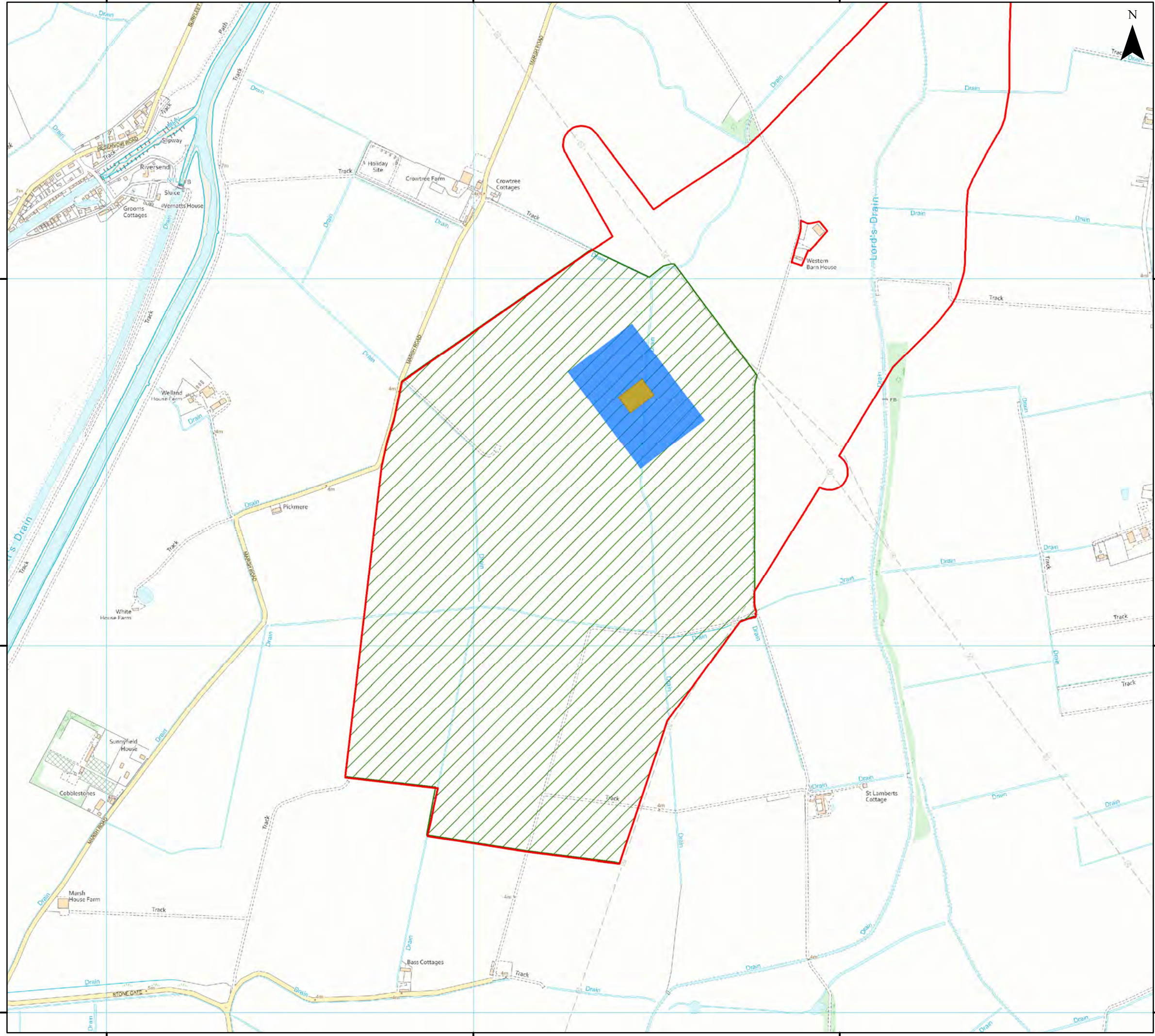
Scale: 1:10,000

Indicative Layout
 Weston Marsh South Substation (3 of 3)

Figure 28.28



Date: 14/04/2023
 Produced By: CS
 Revision: 4



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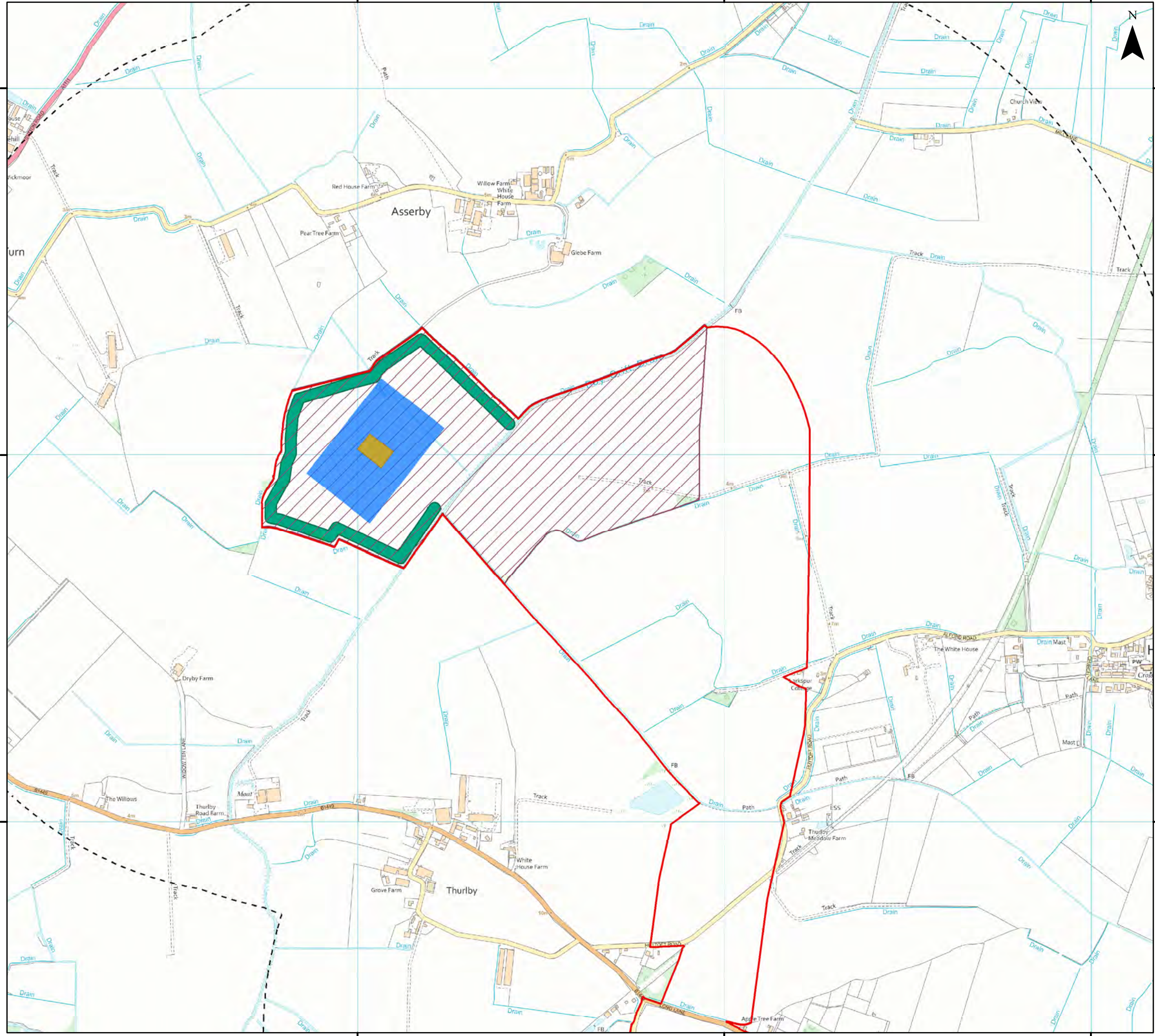
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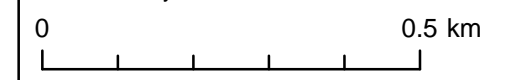
Legend

-  PEIR Boundary
-  OnSS Indicative Layout Building
-  OnSS Indicative Layout Footprint
-  Lincolnshire Node OnSS Search Area
-  Landscape Mitigation
-  Woodland Shelter Belt

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Coordinate System: British National Grid



Scale: 1:10,000

Indicative Layout
Lincolnshire Node Substation (1 of 3)

Figure 28.29



Date: 14/04/2023
 Produced By: CS
 Revision: 4

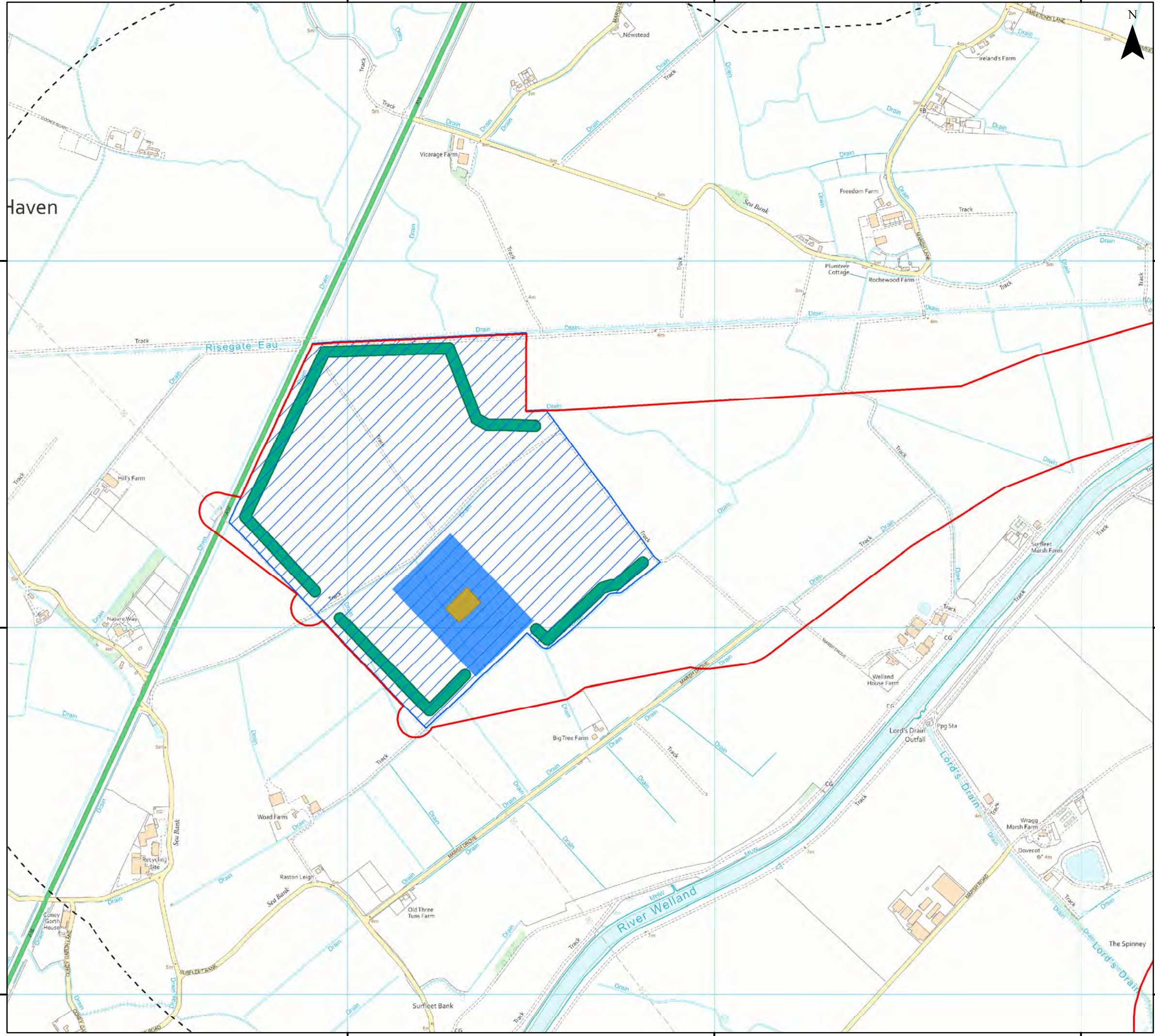


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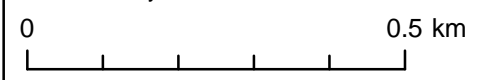
Legend

-  PEIR Boundary
-  OnSS Indicative Layout Building
-  OnSS Indicative Layout Footprint
-  Weston Marsh North OnSS Search Area
-  Landscape Mitigation
-  Woodland Shelter Belt

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Coordinate System: British National Grid



Scale: 1:10,000

Indicative Layout
Weston Marsh North Substation (2 of 3)

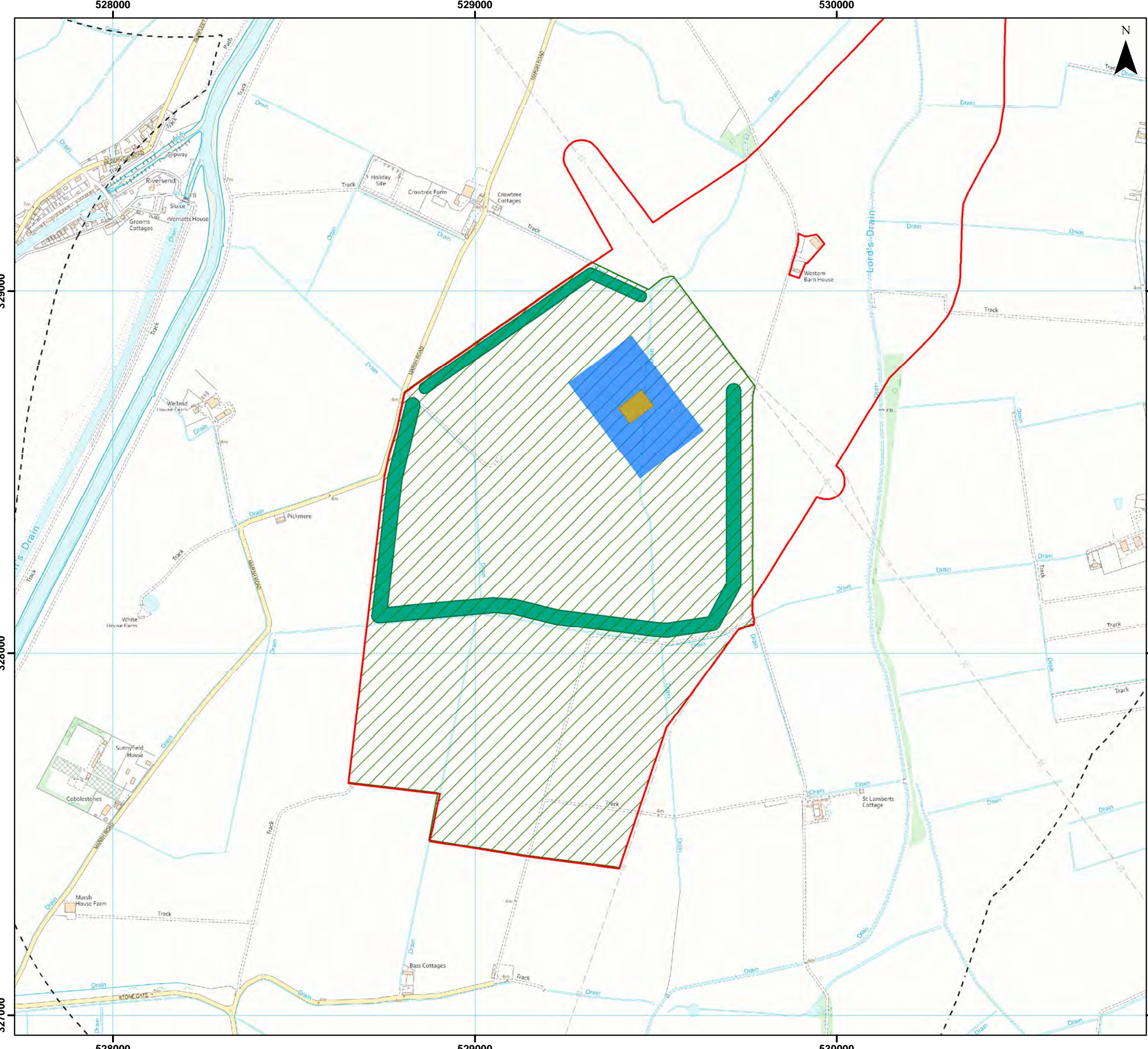
Figure 28.30



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Legend

- PEIR Boundary
- OnSS Indicative Layout Building
- OnSS Indicative Layout Footprint
- Weston Marsh South OnSS Search Area Landscape Mitigation
- Woodland Shelter Belt

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Coordinate System: British National Grid
 0 0.5 km

Scale: 1:10,000

Indicative Layout
 Weston Marsh South Substation (3 of 3)

Figure 28.31



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 Produced By: CS
 Revision: 4

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