

The Great Grid Upgrade

Proposed Electricity Substation and Overhead Line Works at Weston Marsh

**Air Quality Assessment & Screening
Assessment**

June 2026

nationalgrid

Proposed Electricity Substation and Overhead Line Works at Weston Marsh

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1. Introduction

1.1 Overview

- 1.1.1 This Air Quality Assessment has been prepared on behalf of National Grid Electricity Transmission plc (National Grid).
- 1.1.2 National Grid are proposing to undertake works to construct a new electricity substation, new sections of overhead line and modification of existing overhead lines within the vicinity of the Spalding Tee-Point, within the administrative boundary of South Holland District Council (SHDC) in Lincolnshire.

1.2 Summary of the Scheme

- 1.2.1 In totality, the Scheme consists of four components, each planned to be progressed via separate consenting routes. These are summarised in **Table 1.1**.

Table 1.1 Components of the Scheme

Works Required	Consenting Regime
Construction of the new Air Insulated Substation (AIS) – 400kV Weston Marsh Substation A, associated landscaping and environmental mitigation works, drainage, highways and other associated works.	Town and Country Planning Act 1990 (TCPA) (Ref 1) Component referred to as ‘ Substation Works ’
Construction of new sections of overhead line to connect the new substation into the existing 4ZM overhead line. Removal of a section of the existing 4ZM overhead line. Other associated works.	Section 37 (S37) of the Electricity Act 1989 (Ref 2) and deemed consent pursuant to section 90(2) of the Town and Country Planning Act 1990 Component referred to as ‘ S37 4ZM Overhead Line Works ’
Construction of a new section of overhead line to connect the existing 2WS overhead line into the new substation. Removal of a section of the existing 2WS overhead line Other associated works.	S37 of the Electricity Act 1989 and deemed consent pursuant to section 90(2) of the Town and Country Planning Act 1990 Component referred to as ‘ S37 2WS Overhead Line Works ’
Reconductoring works required on the existing 4ZM overhead line. Two spans of temporary overhead lines.	Town and Country Planning (General Permitted Development) (England) Order 2015 (Ref 3) and The Overhead Lines (Exemption) (England and Wales) Regulations 2009 (Ref 4) Component referred to as ‘ Exempt Overhead Line Works ’

- 1.2.2 The Substation Works) will require consent from SHDC under the TCPA.
- 1.2.3 The S37 4ZM Overhead Line Works and S37 2WS Overhead Line Works (collectively referred to as ‘the S37 Overhead Line Works’) will require consent from the Secretary of State for Energy Security and Net Zero under S37 of the Electricity Act 1989.
- 1.2.4 The Exempt Overhead Line Works constitute permitted development under Part 15 Class B of the Town and Country Planning (General Permitted Development) (England) Order 2015 and The Overhead Lines (Exemption) (England and Wales) Regulations 2009.
- 1.2.5 The Scheme Site Boundary, which consists of the land required to construct and operate the Scheme in its entirety, is illustrated on **Figure 1**. The areas of land required to construct and operate each individual component described in **Table 1.1** are also illustrated on **Figure 1**.
- 1.2.6 The Scheme in its totality is a standalone development to enable connection of the Outer Dowsing Offshore Wind Farm to the national electricity transmission system. Each component stated in **Table 1.1** is required for the Scheme to fully function as part of the national electricity transmission system (NETS).

1.3 Purpose of this report

- 1.3.1 This report has been prepared in support of the required consent applications for the Scheme and has been informed by engagement between National Grid and the relevant consenting authorities. The assessment considers the Scheme in its entirety.
- 1.3.2 The purpose of this report is to assess the impact on the local air quality (including dust soiling) due to the construction and operational phases of the Scheme. The type, source and significance of potential impacts are identified, and the measures that should be employed to minimise these described, where required.
- 1.3.3 This report sets out:
- 1) Relevant legislation and the national, regional and local policy context for the assessment;
 - 2) A summary of the consultation undertaken with SHDC and the scope and methodology that has been used in the assessment;
 - 3) A review of baseline conditions within the Air Quality Study Area of the Scheme;
 - 4) The assessment of potential air quality impacts (including dust soiling) during the construction and operational phases of the Scheme; and
 - 5) The requirement for mitigation measures and the residual effects.
- 1.3.4 This Appraisal is accompanied by relevant appendices (Appendix A and Appendix B), which can be found at the rear of this document.

2. Legislative and Policy Framework

2.1.0 Legislation and national and local planning policy relevant to the Scheme and this report is described in further detail in the Planning, Design and Access Statement (TCPA application) and Section 37 Statement (S37 applications). Key legislation and policy relevant to the Air Quality Assessment is summarised in the following sections.

2.2 Legislation and National Policy

Legislation

2.2.1 Legislation and national policy relevant to the Scheme and this report is described in the Planning, Design and Access Statement (TCPA application) and Section 37 Statement (S37 applications).

2.2.2 Air quality legislation and policy relevant to this assessment is summarised below.

2.2.3 The following legislation is relevant to the assessment presented herein:

- 1) The Environment Protection Act 1990 (Ref 5);
- 2) The Environment Act 1995 (Ref 6);
- 3) The Environment Act 2021 (Ref 7);
- 4) The Air Quality (England) Regulations 2000 (Ref 8) (as amended 2002 (Ref 9));
- 5) The Air Quality Standards Regulations 2010 (Ref 10) (as amended 2016 (Ref 11));
- 6) The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019 (Ref 12);
- 7) Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 (Ref 13); and
- 8) The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (Ref 14).

2.2.4 For many parts of the UK, the primary pollutants of concern are those relating to road traffic emissions and, to a lesser extent, heating and commercial sources. The key pollutants of concern are therefore typically Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀ and PM_{2.5}) for human health receptors, and Nitrogen Oxides (NO_x) (comprising Nitrogen Monoxide, NO, and Nitrogen Dioxide, NO₂) and Ammonia (NH₃) for ecological receptors.

2.2.5 The above legislation establishes a series of standards and objectives for concentrations of these pollutants in ambient air, where standards represent concentrations of pollutants that are considered safe, based on current scientific knowledge about their effects on human health and the environment. Objectives represent policy-based targets that take into account technical and economic feasibility (some therefore involve a margin of tolerance, such as a limited number of permitted exceedances). The relevant Air Quality Standards (AQS) (objectives, limit

values and targets) that are given in regulations and are relevant to this assessment are given in **Table 2.1**.

Table 2.1 Relevant UK air quality standards (AQS)

Pollutant	Concentration ($\mu\text{g}/\text{m}^3$)¹	Measured as	Objective
Nitrogen dioxide (NO ₂)	40	Annual mean	Limit value not to be exceeded.
	200	1-hour (hourly) mean	Not to be exceeded more than 18 times a year.
Particulate matter less than 10 micrometres in diameter (PM ₁₀)	40	Annual mean	Limit value not to be exceeded.
	50	24-hour (daily) mean	Not to be exceeded more than 35 times a year.
Particulate matter less than 2.5 micrometres in diameter (PM _{2.5})	20	Annual mean	Limit value not to be exceeded.
	12	Annual mean	Interim target concentration not to be exceeded by the end of January 2028.
	10	Annual mean	Target concentration not to be exceeded by the end of 2040.

¹ $\mu\text{g}/\text{m}^3$ = microgram per cubic metre

National Planning Policy

2.2.6 The following national policy documents are also relevant to the air quality assessment:

- 1) The UK Air Quality Strategy 2007 (Ref 15);
- 2) The UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations 2017 (Ref 22);
- 3) The Clean Air Strategy 2019 (Ref 16);
- 4) The Environmental Improvement Plan 2023 (Ref 18);
- 5) The Air Quality Strategy Framework for Local Authority Delivery (for England) 2023 (Ref 21);
- 6) The National Planning Policy Framework (NPPF) 2024¹ (Ref 17);
- 7) The Overarching National Policy Statement for Energy (EN-1) (Ref 18); and
- 8) The National Policy Statement for Electricity Networks Infrastructure (EN-5) (Ref 19).

¹ The Ministry of Housing, Communities and Local Government are currently consulting on revisions to the National Planning Policy Framework (NPPF) and other changes to the planning system: <https://www.gov.uk/government/consultations/national-planning-policyframework-proposed-reforms-and-other-changes-to-the-planning-system>.

2.3 Regional and Local Policy

2.3.1 The following local planning policy documents are relevant to the Scheme:

- 1) South East Lincolnshire Local Plan 2011-2036 (Adopted 2019) (Ref 23) which covers the administrative areas of both Boston Borough Council and SHDC:
 - a) Policy 30 – Pollution: Development proposal will not be permitted should they lead to unacceptable adverse impacts upon air quality; and
 - b) Policy 31 – Climate Change and Renewable and Low Carbon Energy: Developments must demonstrate consequences of current climate change has been addressed, minimised and mitigated through the protection of air quality.

2.4 Guidance Specific to Air Quality

2.4.1 Relevant guidance that has informed the air quality assessment are listed below:

- 1) National Planning Policy Guidance (NPPG) (Ref 24);
- 2) Department for Environment, Food and Rural Affairs (Defra): PM_{2.5} Targets: Interim Planning Guidance (Ref 25);
- 3) Institute of Air Quality Management (IAQM): Guidance on the Assessment of Dust from Demolition and Construction (Ref 26) (hereafter referred to as the 'IAQM Construction Dust Guidance');
- 4) Environmental Protection UK (EPUK) / IAQM: Land-Use Planning and Development Control - Planning for Air Quality (Ref 27) (hereafter referred to as the 'EPUK / IAQM Planning Guidance');
- 5) IAQM: A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites (Ref 28) (hereafter referred to as the 'IAQM Designated Sites Guidance');
- 6) Defra: Local Air Quality Management Technical Guidance LAQM.TG22 (Ref 29);
- 7) National Highways: Design Manual for Roads and Bridges (DMRB) LA 105 – Air quality (Ref 30); and
- 8) Natural England: Air pollution and development: advice for local authorities (Ref 31).

2.4.2 More detail on the relevant legislation and policy referred to in this assessment are provided in **Appendix A**.

3. Methodology

3.1 Overview

3.1.1 This section describes the methodology used in the Air Quality Assessment. It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the significance of likely effects.

3.2 Approach to Air Quality Assessment

Scope of the Assessment

- 3.2.1 The scope of this assessment has been informed through consultation and engagement with SHDC. In addition, advice provided by Natural England in the Grimsby to Walpole DCO EIA Scoping Opinion (Ref 32) has been applied to this assessment, which advises the use of a 200 m screening distance to identify Ecological Receptors for the construction dust assessment as a more precautionary approach than the 50 m stipulated in the IAQM Construction Dust Guidance (Ref 26). Due to the proximity and association between the Scheme and the Grimsby to Walpole DCO, this advice has been applied to provide a consistent approach between the air quality assessments prepared for each Project, as discussed through consultation with the Environmental Protection Officer (EPO) at SHDC.
- 3.2.2 A summary of the impacts scoped in or out of this assessment are given in **Table 3.1** below together with the justification.

Table 3.1 Impacts scoped in or out of the assessment

Impact	Scoped in or out?	Justification
Construction Phase		
Fugitive dust from on-site construction activities (including enabling works) and off-site trackout by construction vehicles on sensitive (human and ecological) receptors.	In	Sensitive human receptors are present within 250 m of the Scheme and sensitive ecological receptors are present within 200 m of the Scheme. A qualitative assessment of construction dust impacts (including particulate matter, PM ₁₀ and PM _{2.5}) on sensitive human and ecological receptors has been undertaken in-line with IAQM Construction Dust Guidance (Ref 26) and Natural England advice (Ref 32). The assessment has been used to inform the identification of proposed mitigation measures commensurate to the risk identified.
Vehicular tail-pipe emissions containing air pollutants released	Out	Changes in NO _x , NO ₂ , NH ₃ , PM ₁₀ and PM _{2.5} concentrations, due to changes in traffic flows

Impact	Scoped in or out?	Justification
<p>by construction vehicles associated with the Scheme using the local road network. The emissions from vehicles include but are not limited to NO_x, NO₂, NH₃ and Particulate Matter (PM₁₀ and PM_{2.5}). Emissions from vehicles also include those associated with brake and tyre wear.</p>		<p>associated with the construction phase of the Scheme, may affect sensitive human and ecological receptors within 200 m of the Scheme and roads used by vehicles to access and egress to and from it.</p> <p>A review of the traffic data supplied by the project transport consultant indicates that the change in traffic flows during the construction phase will not exceed the screening thresholds outlined in the EPUK / IAQM Planning Guidance (Ref 27) requiring a detailed air quality assessment. In addition, no new junctions will be introduced that are expected to significantly change vehicle acceleration/deceleration near sensitive receptors. Therefore, the assessment of construction traffic impacts has been screened out and will not be considered further.</p>
<p>Exhaust emissions from non-road mobile machinery (NRMM) affecting local air quality.</p>	In	<p>For the assessment of the impact of on-site plant and NRMM exhaust emissions, IAQM Construction Dust Guidance (Ref 26) and LAQM.TG22 (Ref 29) advise that a qualitative assessment is sufficient.</p> <p>Paragraph 7.30 of LAQM.TG22 states: <i>“Experience of assessing the exhaust emissions from on-site plant (NRMM) and site traffic suggests that, with suitable controls and site management, they are unlikely to make a significant impact on local air quality. In the vast majority of cases they will not need to be quantitatively assessed – qualitative consideration to the above points will likely provide sufficient screening.”</i></p> <p>A qualitative assessment of exhaust emissions from NRMM and on-site plant has been undertaken in-line with the IAQM Construction Dust and LAQM.TG22.</p>
<p>Operation and Maintenance Phase</p>		
<p>Vehicular tail-pipe emissions containing air pollutants released by operation and maintenance vehicles associated with the Scheme using the local road network. The emissions from vehicles include but are not limited to NO_x, NO₂, NH₃ and Particulate</p>	Out	<p>The operational and maintenance vehicle movements are expected to be low and infrequent; consequently, they are not anticipated to meet the EPUK / IAQM screening criteria (Ref 27) for detailed assessment. Therefore, the assessment of operation and maintenance traffic impacts has</p>

Impact	Scoped in or out?	Justification
Matter (PM ₁₀ and PM _{2.5}). Emissions from vehicles also include those associated with brake and tyre wear.		been screened out and will not be considered further.
Emissions from combustion plant, i.e., back-up generators, on sensitive (human and ecological) receptors.	Out	No back-up generators (or other combustion-based sources of heat and energy production) are proposed as part of the design therefore, consideration of impacts associated with their use has been scoped out of this assessment and will not be considered further.

Consultation

3.2.3 This section summarises the consultation process undertaken in the preparation of this Air Quality Assessment:

Table 3.2 Summary of consultation

Body / Organisation	Summary of consultation	Summary of outcome (addressed in the Assessment)
SHDC Environmental Protection	<p>WSP issued an outline of the proposed scope and methodology to be used in the air quality assessment via email on 20 January 2026 to the EPO at SHDC.</p> <p>The EPO noted that consideration be given to the impacts associated with:</p> <ul style="list-style-type: none"> The construction of major infrastructure projects (either running consecutively or concurrently with the Scheme) in this area which could potentially increase road traffic, especially during the construction phase. These could potentially affect local air quality for the next 10 years. Fugitive dust from construction sites and dust generated on haul roads which can be tracked away during construction. This could potentially affect PM₁₀ and PM_{2.5} levels. 	<p>The scope and methodology for the assessment were agreed with the EPO at SHDC.</p> <p>A review has been undertaken of committed developments that could contribute to a cumulative air quality effect when considered in-combination with the Scheme. This is considered in the Cumulative Effects Assessment for the Planning Application.</p> <p>The scope of the air quality assessment includes the assessment of trackout and identification of appropriate measures to mitigate the residual effect from trackout of dust on haul routes and onto the local road network. This approach is in line with the IAQM Construction Dust Guidance.</p>

3.3 Study Area

Baseline Air Quality

- 3.3.1 The air quality baseline Study Area extends 2 km from the Scheme, and additionally includes roads used by construction traffic (A151 and A16) located within 200 m of the local authority monitoring sites considered representative of baseline conditions.
- 3.3.2 Background NO_x, NO₂, PM₁₀ and PM_{2.5} concentrations presented in the baseline assessment for the existing and future years have been extracted from Defra's background maps (Ref 33) for the area extending 2 km from the Scheme.
- 3.3.3 Where ecological receptors have been identified within the construction dust Study Area (outlined below), baseline data for pollutants which affect nutrient nitrogen deposition, such as NH₃ concentrations and nitrogen deposition rates, have been taken from the Air Pollution Information System (APIS) (Ref 34). APIS is also the source for acid deposition rates and the relevant critical levels and loads for the designated sites.

Construction Dust

- 3.3.4 For construction phase dust impacts, the Study Area has been defined using the screening criteria from the IAQM Construction Dust Guidance (Ref 26). Additional guidance has been provided to National Grid from Natural England during the scoping opinion for the Grimsby to Walpole DCO application (Ref 31). Whilst the Scheme is a standalone development which is independent of the Grimsby to Walpole DCO, this advice has also been applied to this assessment. The IAQM Construction Dust Guidance states that an assessment will normally be required where there are:
- 1) 'Human receptors' within 250 m of the Scheme Site Boundary; or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s); and/or
 - 2) 'Ecological receptors' within 50 m of the Scheme Site Boundary; or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s). Natural England advise using a 200 m screening distance from the Scheme Site Boundary as a more precautionary approach than that stipulated in the IAQM Construction Dust Guidance (Ref 26)².

3.4 Data Collection

Desk Study

- 3.4.1 The following data has been used to inform the Air Quality Assessment:
- 1) Defra's Background Maps (based on a 2021-base year) (Ref 33);
 - 2) Air Pollution Information System (APIS) (Ref 34);

² Due to the proximity and association between the Weston Marsh Substation A Scheme and the Grimsby to Walpole DCO, this advice has been applied to provide a consistent approach between the air quality assessments prepared for each Project.

- 3) Defra's Air Quality Management Area (AQMA) dataset (Ref 35);
- 4) Defra's Multi-Agency Geographic Information for the Countryside (MAGIC) (Ref 36);
- 5) SHDC Air Quality 2025 Annual Status Report (Ref 37);
- 6) Ordnance Survey (OS) AddressBase Plus dataset;
- 7) Google Earth Imagery;
- 8) Data on Part A1³ Permitted Installations held by the Environment Agency (Ref 38) and Part A2 and B⁴ Installations held by SHDC (Ref 39); and
- 9) Traffic data provided by the Scheme Traffic and Transport Team (Arup).

Site Survey

- 3.4.2 No Scheme specific baseline air quality surveys have been undertaken for this assessment. A baseline monitoring survey is currently being undertaken for the Grimsby to Walpole DCO. Due to the proximity and association with the Scheme, a monitoring location from this survey is judged to be representative of air quality conditions within the Scheme baseline study area. To provide an indication of baseline conditions in the Air Quality Study Area, given the limited availability of local authority monitoring data (which is expected given its rural location and prevailing conditions), data collected for the Grimsby to Walpole DCO Project have been reported in **Section 4** to inform this assessment.

3.5 Assessment Approach

Construction Dust Assessment

- 3.5.1 The assessment of construction impacts has been undertaken in line with IAQM Construction Dust Guidance (Ref 26). This guidance provides a risk-based approach to the assessment of the potential for dust impacts from four types of activities taking account of the sensitivity of the environment surrounding the works: demolition; earthworks; construction; and track-out (the movement of dust/mud off-site on construction vehicles).
- 3.5.2 The construction dust assessment methodology is set out in Appendix B. This includes a description of how receptor sensitivity, magnitude of impact, and significance of effects are described and assigned in the assessment.
- 3.5.3 According to the IAQM Construction Dust Guidance (Ref 26), the majority of fugitive particulate emissions arising from construction sites are expected to relate to the coarser fractions (i.e. PM_{2.5}-PM₁₀) with just 10% expected to comprise PM_{2.5}. The IAQM Construction Dust Guidance therefore focusses on PM₁₀ for the purposes of assessment. However, any mitigation measures identified for the prevention and/or reduction of PM₁₀ releases, would also result in a reduction of PM_{2.5}.

³ Large-scale industrial processes emitting to land, air and/or water.

⁴ This would relate to smaller industrial processes regulated by the Local Authority under the Pollution Prevention and Control guidance, including Part A2 processes (which may release to land, air and water) or Part B processes (which only release to air).

Significance Criteria

Construction Dust Effects

- 3.5.4 The IAQM Construction Dust Guidance (Ref 26) assessment methodology (as summarised in Appendix B) recommends that significance criteria are only assigned to the identified risk of dust impacts occurring from a construction activity with appropriate mitigation measures in place. With the application of appropriate mitigation measures, typically those considered best practice, it is unlikely that the impact of construction dust would trigger a significant air quality effect.

3.6 Assumptions and Limitations

- 3.6.1 The assessment presented here is contingent on the following assumptions and limitations:
- 1) Some detailed information on the construction methods and programme, such as the quantity and type of construction plant, were not available at the time of writing. The assessment has therefore been completed using high-level estimates provided by the Project Team, experience of working on similar schemes, and professional judgement on the likely scale of activity and the sensitivity of the receiving environment to provide a reasonable, worst-case assessment.
 - 2) Receptor counts and the sensitivity of individual receptors has been determined using a combination of Ordnance Survey AddressBase, Google Maps and Google Street View data.
 - 3) To provide a conservative assessment of the construction phase impacts, it has been assumed that the individual components of the Scheme, i.e., the Substation Works, S37 2WS/4ZM Overhead Line Works and the Exempt Overhead Line Works, will be constructed concurrently as a worst-case assumption, whereas it is anticipated that the proposals will be delivered in phases spread out across time, over the proposed construction period of 2028 to 2031.

4. Baseline and Evaluation

4.1 Existing Baseline

4.1.1 The following section outlines the assessment of baseline air quality within the Study Area (as outlined in **Section 3.3**). There are two main potential sources of air pollution associated with the Scheme, construction dust and PM₁₀ emissions. The baseline presented is therefore based upon an assessment of likely background concentrations of NO_x, NO₂, PM₁₀ and PM_{2.5} taken from Defra’s projected data and a review of available local authority monitoring data. In addition, background NH₃, nitrogen deposition and acid deposition concentrations have been taken from APIS.

4.1.2 The baseline section should be read in conjunction with **Figure 2**.

4.1.3 The baseline Air Quality Study Area is predominantly rural in nature and the land used for agriculture. The settlement of Moulton Seas End is located to the east of the Scheme and Weston is situated to the south. **Figure 2** demonstrates that the assessed sensitive human receptor locations across the Study Area are either at the extents of these and other small settlements, closest to the Scheme Site Boundary, or represent individual scattered properties within the wider rural area. These properties include those located in several small hamlets and individual agricultural holdings.

4.1.4 There are three designated ecological sites identified within the baseline Air Quality Study Area which are potentially sensitive to construction dust effects: Surfleet Bank Local Wildlife Site, to the north, and Vernatt’s Drain and Surfleet Seas End Saltmarsh Local Wildlife Sites, to the west of the Scheme.

Local Authority Air Quality Monitoring Data

4.1.5 SHDC’s 2025 Annual Status Report (ASR) states that there are no AQMAs within their administrative area (Ref 37). SHDC routinely measure NO₂, PM₁₀ and Ozone (O₃) concentrations at 17 locations within their administrative area; PM_{2.5} is not routinely measured by SHDC.

4.1.6 Monitoring of annual mean NO₂ levels is undertaken by SHDC using a network of passive diffusion tubes and continuous automatic monitoring stations; this data is reported in the SHDC 2025 ASR (Ref 37) which presents the latest concentrations from the calendar years 2020-2024. The locations and annual mean NO₂ concentrations of roadside diffusion tubes located within the baseline Study Area are presented in **Table 4.1** and shown in **Figure 2**.

Table 4.1 Local authority NO₂ monitoring data (µg/m³, 2020-2024)

ID	Location	Approximate Distance to Scheme (km)	Ordnance Survey Grid Reference (m)		Annual Mean NO ₂ Concentration (µg/m ³)				
			X	Y	2020	2021	2022	2023	2024*
SH5	Station Road	1.9	526585	328726	11.0	11.6	12.1	11.1	10.5

ID	Location	Approximate Distance to Scheme (km)	Ordnance Survey Grid Reference (m)		Annual Mean NO ₂ Concentration (µg/m ³)				
			X	Y	2020	2021	2022	2023	2024*
SH19	Whaplode	3.8	532684	324311	13.4	14.5	14.5	13.1	12.6

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Note:

* 2024 is the most recent year available of SHDC monitoring data.

- 4.1.7 **Table 4.1** shows that concentrations increase between 2020 and 2022, as consistent with national trends due to behavioural change during coronavirus lockdowns. All monitoring locations had an overall trend of decreasing concentrations between 2022 and 2024. There are no exceedances of the AQS annual mean objective for NO₂ at the three locations shown.
- 4.1.8 As annual mean NO₂ concentrations are below 60 µg/m³, in line with guidance published by Defra (LAQM.TG22) (Ref 29), it is reasonable to assume that the 1-hour mean objective is also not exceeded in the Air Quality Study Area.
- 4.1.9 SHDC undertakes PM₁₀ monitoring at two locations within their administrative area. Of these, site ID CM1 is the closest to the Scheme, located approximately 6.8 km south west and is judged to be representative of the conditions within the baseline Air Quality Study Area. Data from this location is shown in **Table 4.2**.

Table 4.2 Local authority PM10 monitoring data (µg/m³, 2020-2024)

ID	Location	Approximate Distance to Scheme (km)	Ordnance Survey Grid Reference (m)		Annual Mean PM ₁₀ Concentration (µg/m ³)				
			X	Y	2020	2021	2022	2023	2024
CM1	Spalding Monkhouse School	4.3	52317	22455	8.5	8.7	8.9	8.2	7.4

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- 4.1.10 The PM₁₀ data shows similar trends to those seen in the NO₂ data. There have been no exceedances of the AQS objective between 2020 and 2024.

Project Specific Baseline NO₂ Monitoring Survey

- 4.1.11 Scheme-specific baseline air quality monitoring surveys have not been undertaken for this assessment.
- 4.1.12 Data collected as part of the ongoing surveys undertaken to support the Grimsby to Walpole DCO, which commenced in December 2025, have been presented here as they complement the existing local authority data and are indicative of conditions within the baseline Study Area used in this assessment.

4.1.13 Roadside monitoring location (G2W_10) is located 250m from the Scheme boundary, adjacent to the A151, High Road, which is likely to be used by construction vehicles accessing the Scheme. Only two months of raw, unadjusted diffusion tube data⁵ are available, these are presented in **Table 4.3**.

Table 4.3 Project-specific baseline NO₂ monitoring survey data – December 2025 and January 2026 (µg/m³)

ID	Location	Approximate Distance to Scheme (km)	Ordnance Survey Grid Reference (m)		Raw, unadjusted NO ₂ Concentration (µg/m ³)	
			X	Y	December 2025	January 2026
G2W_10	High Road, A141	0.25	529536	325219	16.4	20.8

4.1.14 **Table 4.3** shows that the raw unadjusted roadside concentrations of NO₂ measured for the first two months of the survey (December 2025 and January 2026) are well below the AQS annual mean objective of 40 µg/m³. Based on these limited observations, and taking into account the baseline conditions outlined in this section including the monitoring data collected by SHDC, it is judged as unlikely that roadside NO₂ concentrations measured at this monitoring location will exceed the AQS annual mean objective. This will be confirmed once the 6 month monitoring survey is complete.

Background Air Quality Data

4.1.15 Defra’s pollution climate mapping (PCM) model provides estimates of background concentrations of all pollutants on a 1 km x 1 km grid basis for the whole of the UK from 2021 to 2040 (Ref 33). **Table 4.4** displays the mean, minimum and maximum of projected 2026 annual mean background pollutant concentrations of NO_x, NO₂, PM₁₀, and PM_{2.5} within the baseline Air Quality Study Area.

Table 4.4 2026 Defra background air pollutant concentrations within the baseline Study Area (µg/m³)

Average (Minimum - Maximum) 2026 Annual Mean Concentration (µg/m ³)				
NO _x	NO ₂	PM ₁₀	PM _{2.5}	
6.9 (6.5 – 9.0)	5.5 (5.2 - 7.1)	13.3 (12.4 - 14.0)	5.8 (5.7 - 6.1)	

4.1.16 The background concentrations of NO₂ and PM₁₀ are generally low within the baseline Air Quality Study Area, given they are under half of the limit value of 40 µg/m³ for annual mean NO₂ and PM₁₀.

⁵ For an annual average NO₂ concentration to be calculated from monitoring data, there must be at least 3 months of data.

- 4.1.17 Background NO_x concentrations (relevant to ecological receptors) are also generally low within the Air Quality Study Area and the average NO_x concentration across the baseline Air Quality Study Area is 6.9 µg/m³ which falls below the critical level for the protection of vegetation of 30 µg/m³.
- 4.1.18 Estimated concentrations of PM_{2.5} are below the relevant limit value (20 µg/m³) and future target concentration (10 µg/m³) where the average concentration within the baseline Air Quality Study Area is 5.8 µg/m³. PM_{2.5} is the pollutant for which background concentrations are closest to the limit value in 2026.
- 4.1.19 **Table 4.5** below shows the NH₃ critical level and concentration, nitrogen and acid deposition rates and critical loads for the designated ecological sites identified within the baseline Air Quality Study Area.

Table 4.5 Ammonia critical level and concentration, nitrogen and acid deposition rates and critical loads for the ecological sites within the baseline Air Quality Study Area

Ecological Site (X, Y coordinates, in metres)	2020 - 2022 Average Concentration					
	Ammonia Critical Level ($\mu\text{g}/\text{m}^3$)*	Ammonia Concentration ($\mu\text{g}/\text{m}^3$)	Nitrogen Deposition Rate (kg N/ha/yr)	Nitrogen Critical Load Range (kg N/ha/yr)	Acid Deposition Rate (keq/ha/yr)	Acid Critical Load (CLmaxS/ CLminN/ CLmaxN) (keq/ha/yr)
Surfleet Bank (Local Wildlife Site)¹						
528500, 330500	1 - 3	1.66	15.52	10 - 20	1.02	4 / 1.071 / 5.071
529500, 330500	1 - 3	1.64	15.43	10 - 20	1.01	4 / 1.071 / 5.071
Vernatt's Drain (Local Wildlife Site)²						
526500, 325500	1 - 3	1.72	15.68	10 - 20	1.05	4 / 1.071 / 5.071
526500, 326500	1 - 3	1.69	15.54	10 - 20	1.04	4 / 1.071 / 5.071
526500, 327500	1 - 3	1.67	15.54	10 - 20	1.03	4 / 1.071 / 5.071
Surfleet Seas End Saltmarsh (Local Wildlife Site)³						
527500, 327500	1 - 3	1.65	15.40	10 - 20	1.02	4 / 1.071 / 5.071
527500, 328500	1 - 3	1.66	15.54	10 - 20	1.03	4 / 1.071 / 5.071
528500, 328500	1 - 3	1.63	15.40	10 - 20	1.02	4 / 1.071 / 5.071
528500, 329500	1 - 3	1.64	15.54	10 - 20	1.02	4 / 1.071 / 5.071

Note:

Ecological Site (X, Y coordinates, in metres)	2020 - 2022 Average Concentration					
	Ammonia Critical Level ($\mu\text{g}/\text{m}^3$)*	Ammonia Concentration ($\mu\text{g}/\text{m}^3$)	Nitrogen Deposition Rate (kg N/ha/yr)	Nitrogen Critical Load Range (kg N/ha/yr)	Acid Deposition Rate (keq/ha/yr)	Acid Critical Load (CLmaxS/ CLminN/ CLmaxN) (keq/ha/yr)

*The NH_3 critical level is $3 \mu\text{g}/\text{m}^3$ unless lichens and bryophytes are known to be present in which case it reduces to $1 \mu\text{g}/\text{m}^3$.

¹The main habitat type is neutral grassland. Additional habitat includes semi-improved calcareous grassland.

²The habitat is a watercourse for which APIS does not provide critical levels or loads. Additional habitats include calcareous grassland, neutral grassland, reedbed and coarse grassland.

³The main habitat type is improved grassland. Additional habitat includes arable and horticultural.

The Critical Loads are representative of neutral grassland (low and medium altitude hay meadows) and calcareous grassland (semi-dry Perennial calcareous grassland (basic meadow steppe)).

- 4.1.20 **Table 4.5** shows that the average NH₃ concentration is estimated to be above the lower critical level of 1 µg/m³ across all the designated sites. The predicted nitrogen deposition rate is above the upper critical load at Surfleet Bank (neutral grassland) and Pinchbeck Marsh (calcareous grassland). The total acid deposition is below the minimum critical load for Surfleet Bank (neutral grassland) and Pinchbeck Marsh (calcareous grassland). This is consistent with UK-wide trends which show that the majority of UK habitats are exposed to NH₃ concentrations above the lower critical level (1 µg/m³) (55% of habitats in 2021) and exceed the site-specific nitrogen deposition critical loads across the UK (84% of habitats in 2021) (Ref 40). As discussed in **Section 3.2**, construction and operational phase traffic emissions associated with the Scheme are not anticipated to substantially contribute to increased levels of NO_x, NH₃ or nitrogen deposition at sensitive ecological receptors in the study area. The construction dust risk assessment in **Section 5.1** considers the risk of dust impacts on ecological receptors, and appropriate mitigation measures to control and manage the risk of dust impacts are set out in **Section 5.2**.

Local Emissions Sources

Traffic Emissions

- 4.1.21 The main source of air pollution within the SHDC administrative area is road traffic emissions from major roads, notably the A16, A17 and A151. The major roads surrounding the Scheme are the A151 and the A16 east of Spalding. Baseline traffic data for 2024, provided by the Scheme Transport Consultant (obtained from project-specific surveys and Department for Transport data) indicate that the A151 and A16 experience AADT flows ranging from 12,000 to 24,000 vehicles per day. The number of HGVs on these roads range from 1,500 to 3,000 vehicles.
- 4.1.22 As presented in **Table 4.1**, monitored concentrations of annual mean NO₂ adjacent to roads in the surrounding area are well below the AQS objective.

Industrial emissions

- 4.1.23 A review of Environment Agency's register of Part A1 Permitted Installations (Ref 38) indicates that none are present within the baseline Air Quality Study Area. Similarly, a review of SHDC's public register of Permitted Installations (Ref 39) indicates that Part A2 / B processes are not located within the baseline Air Quality Study Area.
- 4.1.24 Active quarries could potentially act as a source of fugitive dust and particulate matter emissions; however, a review of the British Geological Survey website (Ref 40) indicates that none are present within the baseline Air Quality Study Area.

Summary

- 4.1.25 Overall, baseline air quality in the Air Quality Study Area is very good. There are no exceedances of the annual mean NO₂ or PM₁₀ AQS objectives in the SHDC monitoring data and background concentrations within the Air Quality Study Area are low in comparison to the AQS objectives.
- 4.1.26 There are designated ecological sites in the Air Quality Study Area where current predicted NH₃ concentrations are above their respective lower critical level, and acid deposition rates are above their respective maximum critical loads. Nutrient nitrogen

deposition rates are above the respective critical load for neutral grassland and calcareous grassland.

4.2 Future Baseline

- 4.2.1 The future baseline relates to known or foreseeable changes to the current baseline, against which the effects of the Scheme during construction and operation are assessed. Specifically, it accounts for anticipated changes, including those caused by changing climatic conditions, policy, legislation, advances in technology and by other confirmed development projects which will be complete prior to the construction of the Scheme.
- 4.2.2 Future committed developments that could influence local air quality in the baseline Air Quality Study Area include the Land North and North West of High Road, a housing development located approximately 550 m from the Scheme boundary.
- 4.2.3 Projected background air pollutant concentrations available from a base year of 2021 (Ref 33) have been used to determine future baseline conditions. Levels of NO_x, NO₂, PM₁₀ and PM_{2.5} are predicted to improve over time due to reductions in emissions resulting from:
- 1) Reductions in transport exhaust gas pollutants due to improvements in fuel efficiency and the uptake of low emission vehicles;
 - 2) The reduction in the use of fossil fuels prior to the ban on the sale of new petroleum and diesel cars in the UK by 2030;
 - 3) Reductions in pollutant emissions from agricultural sources due to improvements in management envisaged in the 2019 Clean Air Strategy (Ref 16); and
 - 4) Improved emission standards for NRMM and static generators.
- 4.2.4 As concentrations of air pollutants are projected to decrease with time, the earlier the assessment year the higher the level of projected background pollution. The construction phase is anticipated to start in 2028, with completion for operation in 2029. Therefore, 2028 air pollutant data have been used to provide a conservative representation of background concentrations during the construction phase (Ref 33).
- 4.2.5 The arithmetic mean, minimum and maximum of projected pollutant concentrations for the future baseline at the Scheme for 2028 is shown in **Table 4.6**. There are reductions in both NO_x and NO₂ levels within the Study Area compared to the 2025 projection as shown in **Table 4.6**. There is a steady reduction in NO_x concentrations of about 0.6 – 0.9 µg/m³, a reduction in NO₂ concentrations of about 0.5 – 0.7 µg/m³, and a reduction in PM₁₀ and PM_{2.5} of 0.3 µg/m³ and 0.2 µg/m³, respectively.

Table 4.6 2028 Defra background air pollutant concentrations within the baseline Study Area (µg/m³)

Average (Minimum - Maximum) 2028 Annual Mean Concentration (µg/m ³)				
NO _x	NO ₂	PM ₁₀	PM _{2.5}	
6.4 (6.1 - 8.4)	5.1 (4.9 - 6.6)	13.1 (12.2 - 13.8)	5.7 (5.6 - 5.9)	

5. Impacts and Mitigation

5.1 Assessment of Impacts

- 5.1.1 The following section presents the findings of the assessment of effects upon the relevant Air Quality receptors identified within the Air Quality Study Area, as a result of construction activities.
- 5.1.2 The assessment of effects reported below takes into account the Design and Control mitigation measures described in **Section 5.2**.

Construction Dust and PM₁₀ Arising from On-Site Activities

- 5.1.3 The construction dust risk assessment is presented in full in Appendix B; a summary of the findings is given below.
- 5.1.4 The predicted dust emission magnitude has been combined with the defined sensitivity of the area to determine the risk of impacts during the construction phase, prior to mitigation. **Table 5.1** provides a summary of the risk of dust impacts for the Scheme. The risk category identified for each construction activity has been used to determine the level of mitigation required. No demolition activities will occur as part of the construction phase of the Scheme. Therefore, consideration of the impact of this source on dust soiling and ambient particulate matter is not required.

Table 5.1 Summary dust risk table to define site specific mitigation

Potential Impact	Risk		
	Earthworks	Construction	Trackout
Dust Soiling	Medium Risk	Medium Risk	High Risk
Human Health	Low Risk	Low Risk	Low Risk
Ecological	Low Risk	Low Risk	Low Risk

- 5.1.5 Overall, given the nature of the Scheme, it is anticipated that the majority of dust and particulate matter releases will be temporary, short-term and cease at the end of the construction phase. Following the application of the mitigation measures outlined below, and in accordance with the IAQM Construction Dust Guidance (Ref 26), it is judged that the impact of construction dust and particulate matter will be negligible and not result in a significant effect.

Construction NRMM and Plant

- 5.1.6 In line with the IAQM Construction Dust Guidance (Ref 26) and LAQM.TG22 (Ref 29), qualitative assessment of the impact of on-site plant and NRMM exhaust emissions has been undertaken.
- 5.1.7 Final details of the exact plant and equipment likely to be used on site will be determined by the appointed contractor. The number of plant and their location within the site are likely to be variable over the construction period.
- 5.1.8 Based on the current local air quality in the area (which is good as outlined in **Section 4**), the likely numbers of construction vehicles and plant and the duration of the construction phase, the impacts of the emissions associated with construction plant and NRMM are therefore considered to be negligible and not significant.

5.2 Mitigation

Design Mitigation Measures

- 5.2.1 The Scheme is being designed to avoid sensitive receptors as far as practicable. This is in accordance with the 'Holford Rules' (Ref 42) applicable to routing of new overhead lines and the 'Horlock Rules' (Ref 43) which apply to design and siting of substations. Principles include, but are not limited to, seeking to avoid areas of highest amenity, cultural or scientific value, taking advantage of natural screening provided by existing landform and features (e.g. woodland) and keeping visual, noise and other environmental effects to a minimum.
- 5.2.2 Following selection of the preferred route corridor, environmental specialists have been integral to ongoing design refinement of works for the Scheme. This has contributed to the avoidance or reduction of the potential environmental impacts of the Scheme. Specific examples relevant to the assessment include siting of the substations and access roads away from sensitive receptors where practicable.
- 5.2.3 It is noted that design environmental mitigation which has been proposed to reduce effects upon visual amenity and ecology and biodiversity may also reduce impacts upon Air Quality. This includes screening vegetation which, while primarily included to limit visual intrusion (for landscaping purposes), may further reduce potential Air Quality in impacts by filtering dust and air pollutants emitted by construction site activities.

Control Mitigation Measures

- 5.2.4 The dust assessment has identified that there is high risk of dust soiling impacts and a medium risk of health impacts from increases in particulate matter concentrations due to construction activities. Recommended mitigation measures appropriate to the highest identified levels of risk (High Risk) will be set out in an Outline Construction Environmental Management Plan (CEMP).
- 5.2.5 The control and management measures included within the Outline CEMP relevant to the Air Quality assessment include, but not be limited to the following:
 - 1) A CEMP and Construction Traffic Management Plan (CTMP) will be produced prior to construction.

- 2) The CEMP will set out site specific measures and construction methodologies to avoid or reduce potential effects of the Scheme on the environment during construction. The contractor(s) shall undertake regular site inspections to check conformance to the Management Plans.
- 3) The name and contact details for the Scheme will be displayed at the entrance to all compounds. This will include an emergency telephone number.
- 4) Any activity carried out or equipment located within a construction compound that may produce a noticeable dust nuisance will be located away from sensitive receptors such as residential properties or ecological sites where practicable.
- 5) Vehicles will be correctly maintained and operated in accordance with manufacturer's recommendations and in a responsible manner. All plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so. Electric, or other low carbon plant and equipment should be used where available and where practicable.
- 6) Materials and equipment will not be moved or handled unnecessarily. When loading and unloading materials from vehicles, including excavated materials, drop heights will be limited.
- 7) Wheel washing facilities will be provided at each main compound, where appropriate. Road sweepers will be deployed on public roads where necessary to prevent excessive dust or mud deposits.
- 8) Earthworks and stockpiled soil will be managed as per the Soil Management Plan (SMP).
- 9) Bonfires and the burning of waste material will be prohibited.
- 10) Communications to include display of the name and contact details of person(s) accountable for Air Quality and dust issues on the site boundary.
- 11) Daily on-site and off-site inspections will be undertaken by the Contractor(s), where receptors are nearby, to monitor dust. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of the site boundary, with cleaning to be provided if necessary. The frequency of site inspections will be increased by the person accountable for Air Quality and dust issues on-site when activities with a high potential to produce dust are being carried out, during prolonged dry or windy conditions or in response to complaints or an incident resulting in dust emissions. Inspection results will be recorded, and an inspection log made available to the local authority upon request.
- 12) Site management will document all dust and Air Quality complaints, identify causes and take measures to reduce emissions in a timely manner, and record the measures taken.
- 13) Preparation and management of the site ensuring that machinery and dust causing activities are located as far as possible away from receptors, screens/barriers are erected around dusty activities/materials and are at least as high as any stockpiles, use wet methods to keep site fencing, barriers and scaffolding clean, remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on-site where they must be covered, seeded, or fence stockpiles used to prevent wind whipping.

- 14) Monitoring and inspections to include evolving evaluation of Scheme phases as required and practicable.
- 15) Construction operations will only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, for example, suitable local exhaust ventilation systems. Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. Use enclosed chutes and conveyors and covered skips. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. Ensure equipment is readily available onsite to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
- 16) During construction, bulk cement and other fine powder materials are to be delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overflowing during delivery. Sand and other aggregates are to be stored in bunding areas and not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate control measures to reduce dust are in place. For smaller supplies of fine powder materials, bags are to be sealed after use and stored appropriately. Scabbing (roughening of concrete surfaces) will be avoided if possible.
- 17) The contractor is to inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- 18) To minimise the impact from trackout, on-site activities will:
 - a) Impose and signpost a maximum speed limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures, subject to the approval of the nominated undertaker and in agreement with the local authority, where appropriate).
 - b) Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
 - c) Avoid dry sweeping of large areas.
 - d) Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
 - e) Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
 - f) Record all inspections of haul routes and any subsequent action in the site log book.
 - g) Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
 - h) Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

- i) Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
 - j) Access gates to be located at least 10 m from receptors where possible.
- 19) Dust pollution from earthworks activities will be limited through the use of the following measures, as appropriate:
- a) Topsoil will be stripped as close as reasonably practicable to the period of excavation or other earthworks activities to avoid risks associated with run-off or dust generation.
 - b) Hessian, mulches, or trackifiers will be used where it is not possible to revegetate or cover with topsoil as soon as practicable.
 - c) Materials will be compacted after deposition, with the exception of topsoil and subsoil on land to be restored for agriculture, forestry, landscaping and wildlife habitats.
 - d) Cover will only be removed in small areas during work and not all at once.
 - e) Soil spreading, seeding, planting or sealing of completed earthworks will be undertaken as soon as reasonably practicable following completion of the earthworks.
- 20) Operating vehicle/machinery will follow the below:
- a) Construction vehicles will be required to meet Euro VI emissions standards which reduce NO_x and particulate matter emissions.
 - b) All NRMM with an engine power rating of 37 kW to 560 kW will be required to meet Euro Stage IV standards as a minimum.
 - c) Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable to limit emissions from plant and NRMM.
 - d) Low and zero emission vehicles will be used where possible for site use.
 - e) Produce a Construction Logistics Plan to manage the sustainability of goods and materials.
 - f) Implement a Construction Workforce Travel plan to support and encourage sustainable travel.
 - g) Ensure all vehicles switch off engines when stationary - no idling vehicles.
 - h) All vehicles, plant and NRMM will be regularly inspected, serviced and maintained.

Additional Mitigation Measures

- 5.2.6 Additional mitigation measures are not anticipated to be required in relation to Air Quality effects.

5.3 Residual Effects

- 5.3.1 The residual effect of dust and PM₁₀ generated by construction activities following the application of the mitigation measures described above and good site practice is judged to be not significant.

6. Summary

- 6.1.1 An assessment has been undertaken to determine the potential impacts of the Scheme on local air quality during the construction and operational / maintenance phases.
- 6.1.2 To inform the assessment, a desk study of publicly available information has been undertaken to establish the prevailing baseline air quality conditions at the Scheme and in the surrounding area. This identified that the Scheme is in a rural area where the primary influence on air quality is vehicle emissions from traffic using the local road network (A151, A16, A17). No other significant air pollutant sources have been identified.
- 6.1.3 For the construction phase, an assessment of potential impacts associated with fugitive dust and PM₁₀ emissions was undertaken in line with the relevant IAQM Construction Dust Guidance and guidance given by Natural England during the Grimsby to Walpole DCO Scoping Opinion (Ref 31). Whilst the Scheme is a standalone development which is independent of the Grimsby to Walpole DCO, this advice has also been applied to this assessment. This identified that a High Risk of dust soiling impacts and a Medium Risk of health impacts from increases in particulate matter concentrations due to construction activities. However, through good site practice and the implementation of control mitigation measures set out in the Outline CEMP, the dust and particulate matter impacts would be substantially reduced. The residual effects of the construction phase on air quality are judged to be not significant.
- 6.1.4 A construction and operational phase traffic assessment is not required for the Scheme as the vehicle movements associated with these phases fall below the EPUK / IAQM Planning Guidance screening criteria. Therefore, it is predicted that air quality effects from construction and operational phase traffic will be not significant.
- 6.1.5 Due to the reasons stated above, it is judged that the development proposals are unlikely to result in a significant adverse impact, and will comply with national and local policy for air quality, as set out in the NPPF (Ref 17) and the South East Lincolnshire Local Plan (Ref 23).

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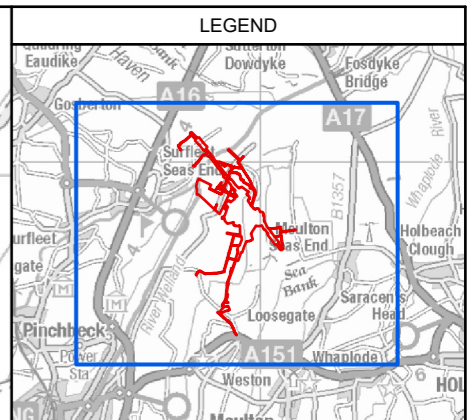
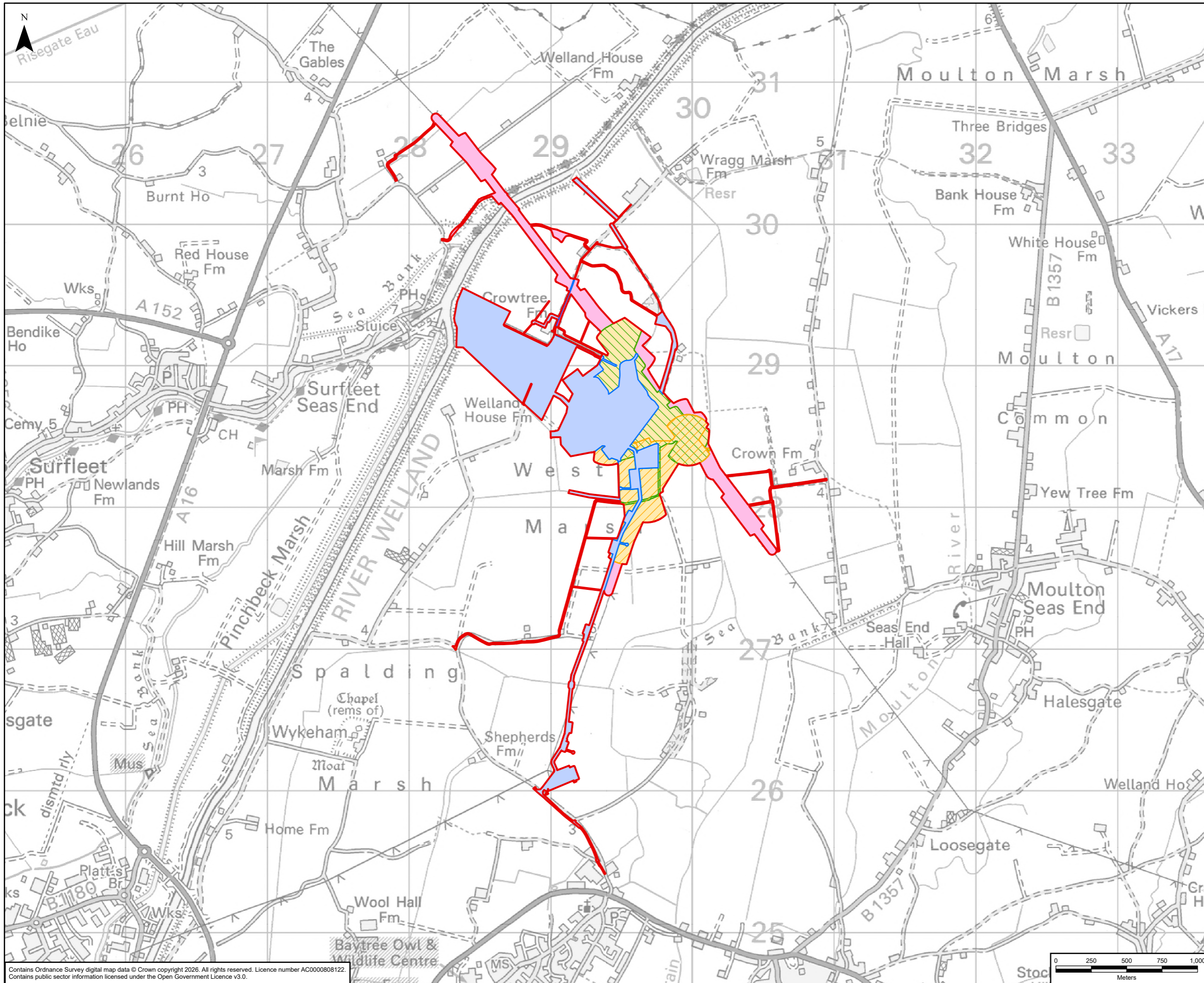
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Figures

Figure 1 Scheme Site Boundary



- LEGEND**
- Scheme Site Boundary
 - Substation Works Site Boundary
 - S37 OHL Works Site Boundary
 - Exempt Overhead Line Works Site Boundary
 - S37 - 4ZM - OHL Works Site Boundary
 - S37 - 2WS - OHL Works Site Boundary

Rev	Date	Description	GIS	Chk	App
A	05/05/2026	First Issue	MM	IW	PT

nationalgrid					
Purpose: AIR QUALITY ASSESSMENT					
Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH					
Document Title: FIGURE 1 SCHEME SITE BOUNDARY					
Creator:	Date:	Checker:	Date:	Approver:	Date:
MM	05/05/2026	IW	05/05/2026	PT	05/05/2026
Document Type:	Scale:	Format:	Sheets:	Rev:	
FIGURE	1:25,000	A3	1 OF 1	A	

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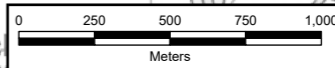
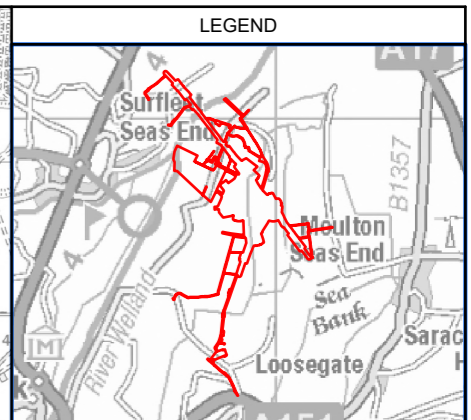
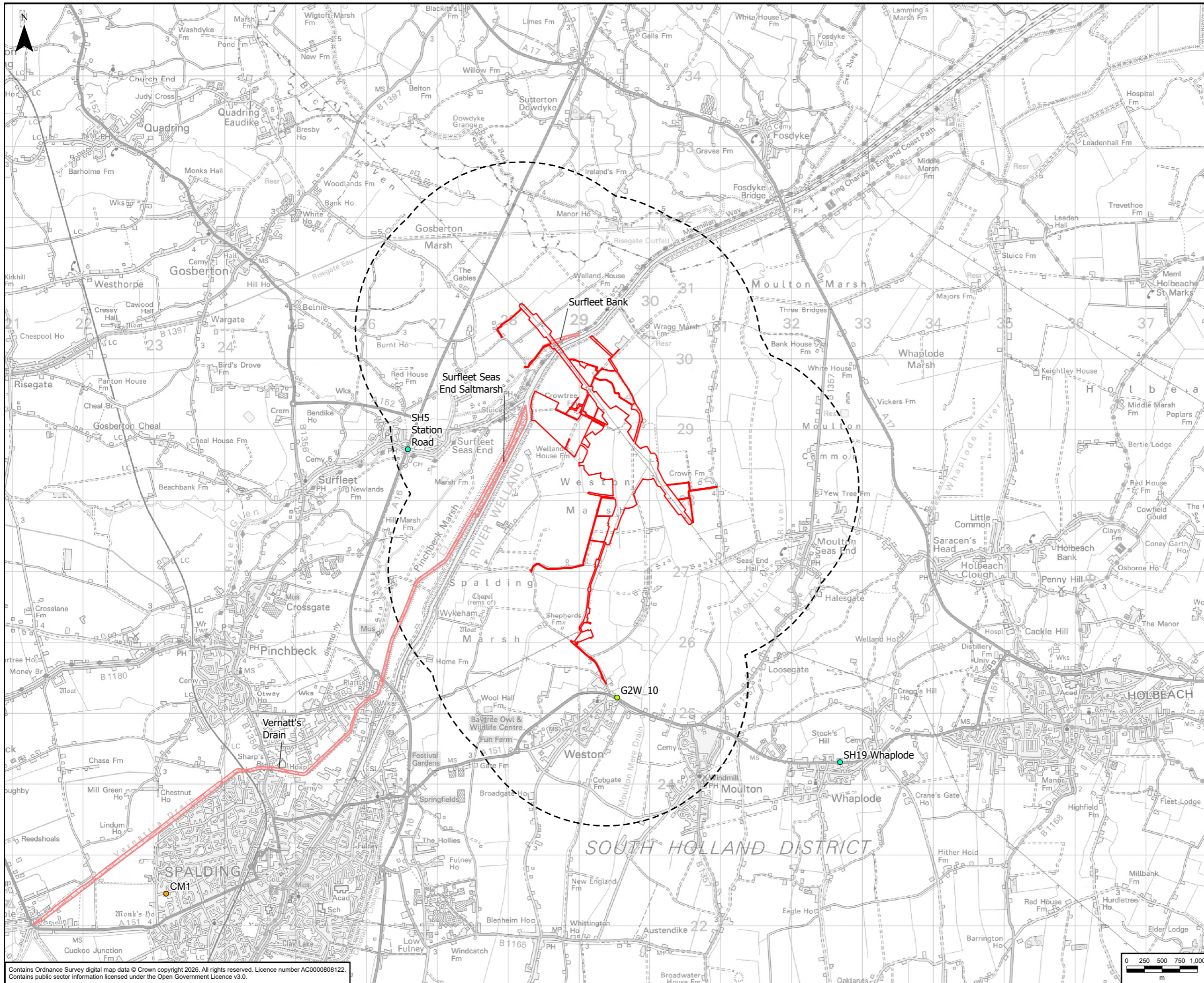


Figure 2 Air Quality Baseline



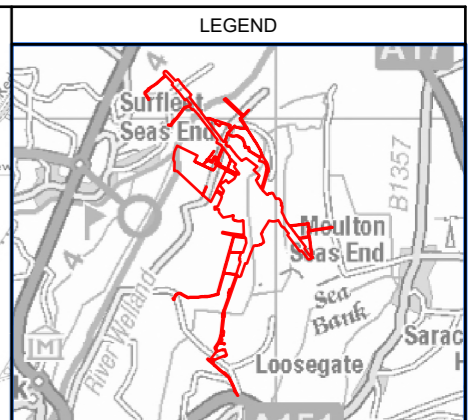
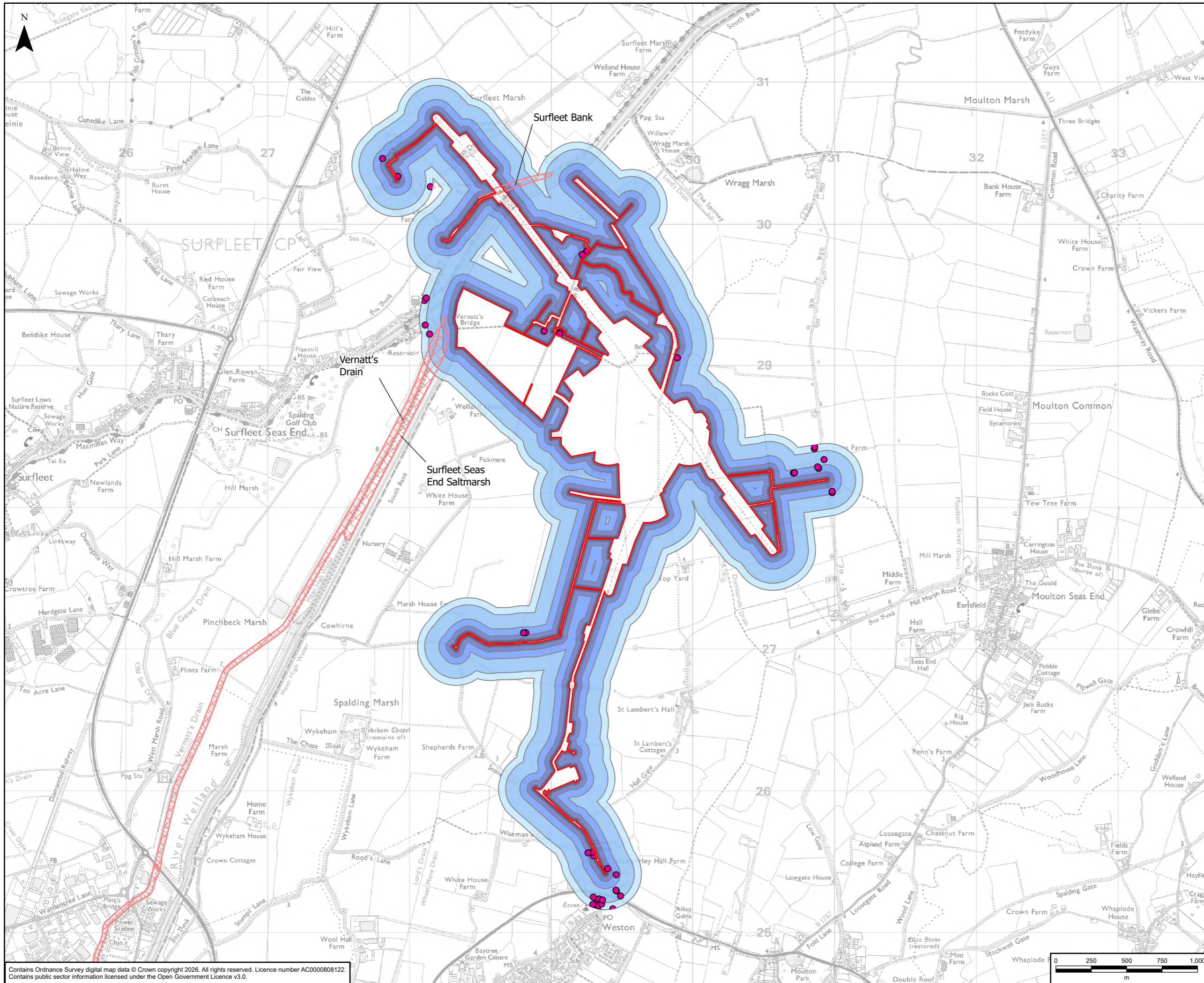
- Legend**
- Scheme Site Boundary
 - 2km Study Area
 - Baseline Monitoring Survey Location
 - Non Statutory Designated Site
 - Local Wildlife Site
 - Local Authority Monitoring
 - Continuous Monitoring Site
 - Diffusion Tube

A	05/05/2026	First Issue	MM	IW	PT
Rev	Date	Description	GIS	Chk	App

nationalgrid					
Purpose: AIR QUALITY ASSESSMENT					
Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH					
Document Title: FIGURE 2 AIR QUALITY BASELINE					
Creator:	Date:	Checker:	Date:	Approver:	Date:
MM	05/05/2026	IW	05/05/2026	PT	05/05/2026
Document Type:	Scale:	Format:	Sheets:	Rev:	
FIGURE	1:50,000	A3	1 OF 1	A	

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Figure 3 Construction Dust Study Area



- LEGEND**
- Scheme Site Boundary
 - Human Sensitive Receptor
 - Non Statutory Designated Site
 - Local Wildlife Site
 - Construction Dust Study Area
 - 250m
 - 200m
 - 100m
 - 50m
 - 20m

A	05/05/2026	First Issue	MM	IW	PT
Rev	Date	Description	GIS	Chk	App

nationalgrid

Purpose: AIR QUALITY ASSESSMENT
 Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH
 Document Title: FIGURE 3 CONSTRUCTION DUSTY STUDY AREA

Creator:	Date:	Checker:	Date:	Approver:	Date:
MM	05/05/2026	IW	05/05/2026	PT	05/05/2026
Document Type:	Scale:	Format:	Sheets:	Rev:	
FIGURE	1:25,000	A3	1 OF 1	A	

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Appendices

Appendix A Legislation, and Policy and Guidance

A.1. Legislation

A.1.1. The following legislation is considered relevant to the Air Quality Assessment.

Environmental Protection Act 1990

A.1.2. Section 79 of the Act gives the following definitions of statutory nuisance relevant to dust and particles:

“Any dust, steam, smell or other effluvia arising from industrial, trade or business premises or smoke, fumes or gases emitted from premises so as to be prejudicial to health or a nuisance”; and

“Any accumulation or deposit which is prejudicial to health or a nuisance”.

A.1.3. Where a statutory nuisance is shown to exist, the local authority must serve an abatement notice. Failure to comply with an abatement notice is an offence and, if necessary, the local authority may abate the nuisance and recover expenses. There are no statutory limit values for dust deposition above which ‘nuisance’ is deemed to exist. Whether a nuisance has arisen is contextual and requires regard to the existing conditions and the change which has occurred.

Environment Act 1995

A.1.4. The Environment Act 1995 provides targets, plans and policies for improving the natural environment. It requires local authorities and other public bodies to review and document local air quality within their area by way of staged appraisals and respond accordingly, with the aim of meeting the air quality objectives by the years defined in the Air Quality Regulations. Where there are areas which do not meet the UK air quality standards, the relevant area is declared an Air Quality Management Area (AQMA), and an Air Quality Action Plan (AQAP) must be drawn up to secure improvements in air quality.

The Environment Act 2021

A.1.5. The Environment Act 2021, Schedule 11 includes amendments to Part IV of the Environment Act 1995 concerning the Local Air Quality Management (LAQM) framework. This is to strengthen the LAQM framework and enable greater cooperation at local level, bringing more organisations into the process of improving air quality. Targets for particulate matter (PM_{2.5}) are also proposed.

The Air Quality (England) Regulations 2000 (as amended 2002)

A.1.6. The UK Government and the devolved administrations have defined both the standards and objectives for a range of air pollutants, including nitrogen dioxide (NO₂), nitrogen oxides (NO_x) and particulate matter (PM₁₀ and PM_{2.5}).

A.1.7. The air quality standards are concentration limits which represent negligible or zero risk to health, based on medical and scientific evidence reviewed by the Expert Panel on Air Quality Standards (EPAQS) and the World Health Organisation (WHO). Above

these limits, sensitive members of the public (e.g., children, the elderly and the unwell) might experience adverse health effects.

- A.1.8. The objectives set out the extent to which the UK Government and EU expect the standards to be achieved by a certain date and maintained thereafter. They take account of the costs, benefits, feasibility and practicality of achieving the standards.
- A.1.9. Many of the objectives have been made statutory in England with the Air Quality (England) Regulations 2000 and the Air Quality (England) (Amendment) Regulations 2002 for the purpose of Local Air Quality Management (LAQM). These set a series of air quality standards and air quality objectives with the aim of protecting human health.
- A.1.10. The Regulations require that likely exceedances of Air Quality Objectives (AQOs) are assessed in relation to:
- “...the quality of the air at locations which are situated outside of buildings or other natural or man-made structures, above or below ground, and where members of the public are regularly present...”*
- A.1.11. The AQO apply only where members of the public are likely to be regularly present for the averaging time of the objectives (i.e., where people will be exposed to pollutants). The annual mean objectives apply to all locations where members of the public might be regularly exposed; these include building façades of residential properties, schools, hospitals, care homes, etc. The 24-hour mean AQOs apply to all locations where the annual mean objective would apply, together with hotels and gardens of residential properties. The 1-hour mean AQOs also apply at these locations as well as at any outdoor location where a member of the public might reasonably be expected to stay for 1 hour or more, such as shopping streets, parks and sports grounds, as well as bus stations and railway stations that are not fully enclosed.
- A.1.12. These periods reflect the varying effects on health of differing exposures to pollutants, for example temporary exposure on the pavement adjacent to a busy road, compared with the exposure of residential properties adjacent to a road.

The Air Quality Standards Regulations 2010 (as amended 2016)

- A.1.13. The Air Quality Standards Regulations 2010 (as amended 2016) set mandatory limit and target values (amongst other things) for ambient air pollutants to be met at national level. Where exceedance of any limit is determined, the Secretary of State must draw up and implement an Air Quality Plan (which may require a Clean Air Zone) to bring about compliance within the shortest possible time.

The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019

- A.1.14. The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019 were introduced to address changes needed in UK air quality legislation following its departure from the European Union. These regulations primarily focused on ensuring that air quality laws derived from the EU continued to function properly in the UK's domestic legal framework post-Brexit.

Regulation 2 of the Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020

- A.1.15. Regulation 2 of the Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 updated the Air Quality Standards Regulations 2010 to include a limit value of 20µg/m³ for PM_{2.5} from 2020 which supersedes the one given in the Air Quality Standards Regulations 2016.

The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

- A.1.16. The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 brings into law the following new long-term targets for PM_{2.5}:
- 1) An annual mean concentration target for a maximum concentration of 10µg/m³ to be met across England by 2040; and
 - 2) A population exposure reduction target of 35% by 2040 (compared to a base year of 2018).

The Environmental Improvement Plan 2023

- A.1.17. The Environmental Improvement Plan 2023 , sets out the following additional interim targets for PM_{2.5}, to be achieved by the end of January 2028:
- 1) The highest annual mean concentration in the most recent full calendar year must not exceed 12µg/m³.
 - 2) Compared to 2018, the reduction in population exposure to PM_{2.5} in the most recent full calendar year must be 22% or greater.

Overarching National Policy Statement for Energy (NPS EN-1)

- A.1.18. The NPS EN-1 sets out the need for new nationally significant infrastructure which includes meeting energy security and carbon reduction strategies, the need for more electricity capacity to support increased supply from renewables, and the need to meet future increases in electricity demand.
- A.1.19. The NPS EN-1 Section 4.2 sets out the Government's commitments to prioritise low carbon infrastructure. Paragraph 4.2.1 of the NPS EN-1 states:
- 'Government has committed to fully decarbonising the power system by 2035, subject to security of supply, to underpin its 2050 net zero ambitions. More than half of final energy demand in 2050 could be met by electricity, as transport and heating in particular shift from fossil fuel to electrical technology.'*
- A.1.20. Paragraph 4.2.4 of the NPS EN-1 goes on to say:
- 'Government has therefore concluded that there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure.'*
- A.1.21. Paragraph 4.2.5 of NPS EN-1 lists the types of infrastructure which meet the definition of nationally significant infrastructure, which includes electricity grid infrastructure in the scope of NPS EN-5, including network reinforcement, upgrade works and associated infrastructure such as substations.
- A.1.22. NPS EN-1 sets out the impacts and means of mitigation that are anticipated to arise most frequently from energy projects.

National Policy Statement for Electricity Networks Infrastructure (NPS EN-5)

- A.1.23. NPS EN-5 covers electricity networks and focuses on policies and considerations that are specific to this type of energy infrastructure. It sets out how the SoS should consider NPS EN-5 and NPS EN-1 in tandem when evaluating applications relating to electricity networks infrastructure.
- A.1.24. Part 2 of NPS EN-5 provides general assessment principles and technology-specific policies relating to matters including climate change adaptation, consideration of good design, biodiversity and geological conservation, landscape and visual, and noise and vibration.
- A.1.25. Paragraph 2.2.10 of NPS EN-5 reiterates the duties on developers under Section 9 and Schedule 9 of the Electricity Act 1989, both in relation to developing and maintaining an economical and efficient network and in formulating proposals for new electricity networks infrastructure, to:

'have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest...'

A.2. Policy

- A.2.1. The following policies are relevant to the air quality assessment.

The UK Air Quality Strategy

- A.2.2. The UK Air Quality Strategy, published by the UK Government in 2007, predates the Clean Air Strategy. This provides a framework for reducing air pollution in the UK with the aim of meeting the objectives and mandatory limit values set by the Air Quality Regulations (detailed above).

The UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations

- A.2.3. The UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations was published by Defra in 2017. This sets out roles and responsibilities and measures for bringing NO₂ levels within the mandatory limit values in the shortest possible time.

The Clean Air Strategy

- A.2.4. The Clean Air Strategy published by Department for Environment Food and Rural Affairs (Defra) in 2019. This sets out the measures which aim to reduce emissions from all sources of air pollution, making air healthier to breathe, protecting nature and boosting the economy. Targets for action include road traffic to reduce ambient NO₂ concentrations, and domestic coal and wood burning to improve ambient PM_{2.5} concentrations.

The Air Quality Strategy Framework for Local Authority Delivery (for England) 2023

- A.2.5. The Air Quality Strategy for England which supersedes the UK Air Quality Strategy Volume 1 (except in Northern Ireland and Scotland) and sets out a framework to guide local authorities towards achieving the long-term air quality goals, including the new targets for PM_{2.5}.

National Planning Policy Framework

A.2.6. The Government's overall planning policies for England are described in the National Planning Policy Framework (NPPF). The core underpinning principle of the Framework is the presumption in favour of sustainable development, defined as:

"... meeting the needs of the present without compromising the ability of future generations to meet their own needs."

A.2.7. One of the three overarching objectives of the NPPF is that the planning system should seek to:

"protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

A.2.8. In relation to air quality, Paragraph 199 in the document is relevant, which states:

"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."

A.3. Local

A.3.1. A summary of relevant local and regional policy is provided below.

South East Lincolnshire Local Plan 2011-2036 (Adopted 2019)

A.3.2. The South East Lincolnshire Local Plan was produced jointly by Boston Borough Council and Lincolnshire County Council. The plan was adopted in March 2019. In relation to air quality, the following policies are relevant:

- 1) Policy 30 – Pollution: Development proposal will not be permitted should they lead to unacceptable adverse impacts upon air quality; and
- 2) Policy 31 – Climate Change and Renewable and Low Carbon Energy: Developments must demonstrate consequences of current climate change has been addressed, minimised and mitigated through the protection of air quality.

Appendix B Construction Dust Risk Assessment

B.1. Methodology

Step 1 – Screening the need for a Detailed Assessment

B.1.1. An assessment will normally be required where there are:

- ‘Human receptors’ within 250 m of the Scheme Site Boundary; or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s); and/or
- ‘Ecological receptors’ within 200 m of the Scheme Site Boundary; or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s). The 200 m screening distance from the Scheme is more conservative than that stipulated in the IAQM Construction Dust Guidance (Ref 26), and has been used following the guidance given by Natural England during the Scoping Opinion⁶ (Ref 31).

B.1.2. Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is “negligible”.

Step 2A – Define the Potential Dust Emission Magnitude

B.1.3. The following are examples of how the potential dust emission magnitude for different activities can be defined. (Note that not all the criteria need to be met for a particular class). Other criteria may be used if justified in the assessment.

Table B.6.1 Definitions of dust emission magnitudes

Dust Emission Magnitude	Activity
Large	Demolition Total building volume >75,000 m ³ , potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >12 m above ground level
	Earthworks Total site area >110,000 m ² , potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6 m in height
	Construction Total building volume >75,000 m ³ , on site concrete batching, sandblasting
	Trackout

⁶ Whilst the Scheme is a standalone development which is independent of the Grimsby to Walpole DCO, this advice has also been applied to this assessment.

Dust Emission Magnitude	Activity
	>50 HDV (>3.5 t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100 m
Medium	Demolition Total building volume 12,000 m ³ – 75,000 m ³ , potentially dusty construction material, demolition activities 6-12 m above ground level
	Earthworks Total site area 18,000 m ² – 110,000 m ² , moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3 m – 6 m in height
	Construction Total building volume 12,000 m ³ – 75,000 m ³ , potentially dusty construction material (e.g. concrete), on site concrete batching
	Trackout 20-50 HDV (>3.5 t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 m – 100 m
Small	Demolition Total building volume <12,000 m ³ , construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6 m above ground, demolition during wetter months
	Earthworks Total site area <18,000 m ² , soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3 m in height
	Construction Total building volume <12,000 m ³ , construction material with low potential for dust release (e.g. metal cladding or timber)
	Trackout <20 HDV (>3.5 t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m

Step 2B – Define the Sensitivity of the Area

- B.1.4. For the assessment of construction phase dust impacts, a receptor is defined as, ‘a location that may be affected by dust emissions during demolition and construction. Human receptors include locations where people spend time and where property may be impacted by dust. Ecological receptors are habitats that might be sensitive to dust’ within the IAQM Construction Dust Guidance. For ecological receptors, these include locations where there could be direct impacts on vegetation or aquatic

ecosystems due to dust deposition, and the indirect impacts on fauna e.g. on foraging habitats.

- B.1.5. Receptor sensitivity to dust impacts is defined as either low, medium or high in the IAQM Construction Dust Guidance as outlined in **Table B.6.2**.

Table B.6.2 Descriptions of levels of receptor sensitivity

Level of receptor sensitivity	Dust soiling effects	Human health	Ecological effects
Low	Locations where the enjoyment of amenity would not reasonably be expected and exposure would be for limited periods e.g. footpaths, shopping streets and car parks.	Locations where human exposure is transient e.g. public footpaths, playing fields parks and shopping streets.	Locally designated ecological sites such as Local Nature Reserves and Local Wildlife Sites (which are equivalent to County Wildlife Sites in England (Ref 44)) with dust sensitive features.
Medium	Locations where users would expect to enjoy a reasonable level of amenity and value could be diminished by dust soiling e.g. parks and places of work.	Locations where the humans exposed are workers and exposure is of a time period relevant to the air quality objectives for PM ₁₀ and PM _{2.5} e.g. offices and shops	Nationally designated ecological sites e.g. a Site of Special Scientific Interest (SSSI) with dust sensitive features.
High	Locations where users can expect enjoyment of a high level of amenity or where the appearance, aesthetics or value of property would be diminished by soiling. Consideration of where people or property are expected to be present continuously for extended periods of time e.g. residential properties, museums, medium- and long-term carparks.	Where human receptors are expected to be present continuously for extended periods of time relevant to the air quality objectives for PM ₁₀ and PM _{2.5} e.g. residential properties, hospitals, schools and care homes, (as defined in Box 1-1 of LAQM.TG22 (Ref 29)).	Internationally or nationally designated ecological sites e.g. Special Conservation Areas (SACs), Special Protection Areas (SPAs) designated under the Habitats Directive (92/43/EEC) and Ramsar sites with dust sensitive features. They can also include local sites designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings and locations where there is a community of a particularly dust sensitive species vascular species included in the Red Data List for Great Britain.

- B.1.6. The sensitivity of an area to dust soiling effects on people and property takes in to account the receptor sensitivity (given above) and the number of receptors within predefined distances given in IAQM Construction Dust Guidance (Ref 26) i.e. 0 – 20 m, 0 – 50 m, 0 – 100 m and 0 – 250 m from the source. Determination of the sensitivity of an area to human health impacts uses a similar approach as dust soiling but requires estimated background PM₁₀ levels taken from Defra’s background maps (Ref 33) to be considered as well. Other factors, such as a history of dust generating activities in the area, local topography, geography, features e.g. the presence of trees that may provide screening, and meteorology also need to be considered when determining receptor sensitivity.
- B.1.7. The tables below present the IAQM assessment methodology to determine the sensitivity of the area to dust soiling, human health and ecological impacts respectively. The IAQM Construction Dust Guidance provides guidance to allow the sensitivity of individual receptors to dust soiling and health effects to assist in the assessment of the overall sensitivity of the study area.

Table B.6.3 Sensitivity of the area to dust soiling effects

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table B.6.4 Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM ₁₀ Concentrations (µg/m ³)	Number of Receptors	Distance from the source (m)			
			<20	<50	<100	<250
High	>32	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28	>100	High	Medium	Low	Low

Receptor Sensitivity	Annual Mean PM ₁₀ Concentrations (µg/m ³)	Number of Receptors	Distance from the source (m)				
			<20	<50	<100	<250	
High	<24	10-100	High	Medium	Low	Low	
		1-10	Medium	Low	Low	Low	
	>24	>100	Medium	Low	Low	Low	
		10-100	Low	Low	Low	Low	
	Medium	>32	>10	High	Medium	Low	Low
			1-10	Medium	Low	Low	Low
		28-32	>10	Medium	Low	Low	Low
			1-10	Low	Low	Low	Low
		24-28	>10	Low	Low	Low	Low
			1-10	Low	Low	Low	Low
<24	>10	Low	Low	Low	Low		
	1-10	Low	Low	Low	Low		
Low	-	>1	Low	Low	Low	Low	

Table B.6.5 Sensitivity of the area to ecological impacts

Receptor Sensitivity	Distance from the Sources (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Step 2C – Define the Risk of Impacts

- B.1.8. The dust emissions magnitude determined at Step 2A should be combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts without mitigation applied. For those cases where the risk category is 'negligible' no mitigation measures beyond those required by legislation will be required.

Table B.6.6 Risk of dust impacts

Sensitivity of surrounding area	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks, Construction and Trackout			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Step 3 – Site Specific Mitigation

- B.1.9. The risk category identified for each construction activity (demolition, earthworks, construction and trackout) is used to determine the level of mitigation required. For those cases where the risk category is negligible, no mitigation measures beyond those required by legislation will be required.
- B.1.10. Examples of recommended mitigation measures are given in the IAQM Construction Dust Guidance (Ref 26) and are divided into general measures, applicable to all sites, and those applicable specifically to each construction activity. The mitigation measures required are based on whether the risk determined for each activity is high, medium or low. For general mitigation measures, the highest risk category is applied.

Step 4 – Determine Significant Effects

- B.1.11. The IAQM Construction Dust Guidance (Ref 26) recommends that no assessment of the significance of effects is made without mitigation in place, as it is assumed that mitigation will be secured by planning conditions, legal requirements or regulations. The main purpose of the dust risk assessment is to ensure that the proposed mitigation is appropriate for the Scheme.
- B.1.12. With appropriate mitigation in place, the IAQM Construction Dust Guidance indicates that the residual effect of dust emissions associated with the demolition and construction can be classified as being 'not significant'.

B.2. Assessment of Construction Dust and Particulate Matter Arising from On-Site Activities

- B.2.1. Construction activities that have the potential to generate and/or re-suspend dust and particulate matter include:
 - 1) Site clearance and preparation;

- 2) Preparation of temporary access/egress to the Scheme and haulage routes;
- 3) Earthworks;
- 4) Materials handling, storage, stockpiling, spillage and disposal;
- 5) Movement of vehicles and construction traffic within the Scheme;
- 6) Use of crushing and screening equipment/plant;
- 7) Exhaust emissions from site plant, especially when used at the extremes of their capacity and during mechanical breakdown;
- 8) Construction of buildings, roads and areas of hardstanding alongside fabrication processes;
- 9) Internal and external finishing and refurbishment; and
- 10) Landscaping after completion of the Scheme.

B.2.2. The majority of the releases are likely to occur during the 'working week'. However, for some potential release sources (e.g. exposed soil produced from significant earthwork activities) in the absence of dust control mitigation measures, dust generation has the potential to occur 24 hours per day over the period during which such activities are to take place.

B.2.3. **Figure 3** shows the construction dust area around the Scheme.

Assessment of Potential Dust Emissions Magnitude

B.2.4. The IAQM Construction Dust assessment methodology (Ref 26) has been used to determine the potential dust emission magnitude for the following different dust and particulate matter sources: earthworks; construction; and trackout. The findings of the assessment are presented in **Table B.6.7**. It is anticipated that no demolition activities form part of the Scheme, although dismantling works associated with the steel pylons are expected. As such, the assessment of impacts from dust and particulate matter from demolition activities is not required.

Table B.6.7 Assessment of potential dust emission magnitude

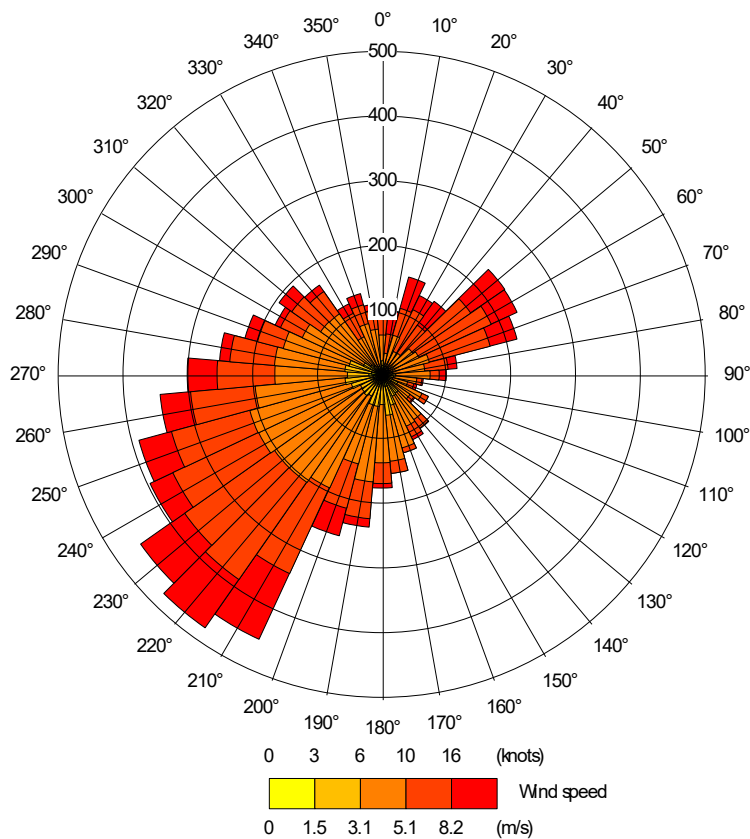
Activity	Dust Emission Magnitude	Justification
Earthworks	Medium	The total area of the Scheme and proposed works is approximately 96,755 m ² and it is anticipated that between 5-10 heavy earth moving vehicles will be active at any one time. The soil type loamy and clayey which is broadly classed as being moderately prone to suspension when dry.
Construction	Medium	The construction activities will include the erection of a substation and associated infrastructure within the Scheme extents, this is likely to include potentially dusty construction material like concrete. However, the total

Activity	Dust Emission Magnitude	Justification
Trackout	Large	<p>volume of potentially dusty construction activities is not anticipated to exceed 75,000 m³.</p> <p>Construction traffic are anticipated to access and egress to and from the Scheme via paved roads. However, approximately 146 two-way heavy duty vehicle movements are expected during the peak construction month (anticipated to be July 2028), which represents the maximum number of heavy duty vehicle movements during the construction phase of the Scheme.</p>

Assessment of Sensitivity of the Study Area

B.2.5. A wind rose showing the prevailing wind direction and frequency in 2024, obtained from the meteorological observation station at Holbeach, located approximately 15km east of the Scheme, is given in Image C.1. The meteorological conditions at this location are considered to be representative of conditions at the Scheme. This indicated that the prevailing wind direction is from the south west which is largely representative of the Air Quality Study Area.

Image C.6.1 Wind rose for Holbeach (2024)



- B.2.6. The construction dust Study Area largely comprise of arable land with scattered residential properties. Dust sensitive receptors include clusters of settlements located in north and east of Spalding, particularly along the A151 Weston Bypass, approximately 250 m from the Scheme. Locally designated ecological sites (outlined in **Section 4.1**) are present within the construction dust Study Area.
- B.2.7. Taking the above into account and following the IAQM Construction Dust assessment methodology, the sensitivity of the area to changes in dust and PM₁₀ has been derived for each of the construction activities considered. The results are shown in **Table B.6.8**.

Table B.6.8 Sensitivity of the Study Area

Potential Impact	Sensitivity of the Surrounding Area		
	Earthworks	Construction	Trackout
Dust Soiling	Medium	Medium	High
Human Health	Low	Low	Low
Ecological	Low	Low	Low

Risk of Impacts

- B.2.8. The predicted dust emission magnitude has been combined with the defined sensitivity of the area to determine the risk of impacts during the construction phase, prior to mitigation. **Table B.6.9** below provides a summary of the risk of dust impacts for the Scheme. The risk category identified for each construction activity has been used to determine the level of mitigation required.

Table B.6.9 Summary dust risk table to define site specific mitigation

Potential Impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	N/A	Medium Risk	Medium Risk	High Risk
Human Health	N/A	Low Risk	Low Risk	Low Risk
Ecological	N/A	Low Risk	Low Risk	Low Risk

Cumulative Construction Dust Risk Assessment

- B.2.9. The cumulative effects between the Scheme and nearby committed developments has been considered in the Cumulative Effects Assessment for the Planning Application. With the implementation of mitigation measures set out within the respective assessments (for the Scheme and committed developments), no significant cumulative construction dust effects are anticipated.

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