



MEC
Consulting Group

AIR QUALITY

Land South-east of Desford
Air Quality Assessment
July 2026

Report Ref: 29930-ENV-0401 Rev B



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Air Quality Assessment

July 2026

REPORT REF: 29930-ENV-0401 Rev B

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EXECUTIVE SUMMARY

Site Address	Land South-east of Desford.
Site Description and Setting	The Site, comprised of agricultural fields, is located along the southern edge of Desford, approximately 10km from Leicester City Centre. The Site is bounded to the north by existing residential dwellings and Bosworth Academy; to the east by Leicester Lane; the south by agricultural fields; and to the west by Peckleton Lane with commercial units opposite.
Proposed Development	"Outline planning application for residential development, including provision of a primary healthcare facility and district centre [E Use Class]; sports facilities; public open space; access from Peckleton Lane and Leicester Lane with a connecting road; sustainable drainage; and associated infrastructure. All matters reserved except for access."
Baseline Conditions	Air quality within Hinckley and Bosworth Borough Council (HBBC) area is generally good, and there were no exceedances of relevant objective levels recorded in 2025. Since 'relevant exposure' is already present adjacent to the Site, i.e. existing residential dwellings are present adjacent to the Site and local road, and these have already been considered within HBBC's reviews and assessments, the same conclusions will apply for new dwellings on the Site. Namely, all air quality objectives will be satisfied on the Site and at dwellings adjacent to the routes to the Site.
Air Quality Assessment	<u>Nitrogen Dioxide (NO₂)</u> Assessment indicates that receptors adjacent to all roads have values below the current annual mean air quality objectives (40 µg/m³) for NO₂. The impact significance in accordance with the EPUK/IAQM guidance indicates that for all assessed receptor locations, impact due to development is classed as 'Negligible', and none of the changes exceed 1% of the Air Quality Assessment Level (AQAL). <u>Particulate Matter (PM₁₀)</u> Assessment indicates that receptors adjacent to all roads have values below the current annual mean air quality objectives (40 µg/m³) of PM₁₀. The impact significance in accordance with the EPUK/IAQMK guidance indicates that for all assessed receptor locations, impact due to development is classed as 'Negligible', and none of the changes exceed 1% of the AQAL. <u>Particulate Matter (PM_{2.5})</u> Assessment indicates that receptors adjacent to all roads have values below the interim target level (10 µg/m³) of PM_{2.5}. The impact significance in accordance with the EPUK/IAQM guidance indicates that for all assessed receptor locations, impact due to development is classed as 'Negligible', and none of the changes exceed 1% of the AQAL.
Designated Sites Screening Assessment	A screening assessment has been undertaken in accordance with Natural England Guidance. The results show that for the with and without development scenarios, the critical level for NO_x is not exceeded at all assessed receptor locations. For N deposition, values lie within the critical load range at all locations. For Ammonia, values lie below the upper critical level at assessed receptor locations. With regard to the development impact, the results show that the % change at all assessed locations does not exceed 1 % of the critical level/load for all assessed pollutants.
Construction Dust Risk Assessment	<u>Dust Soiling Effects</u> The risk assessment indicates that on the basis of no mitigation being present, all assessed phases would present a 'High Risk' to dust soiling. <u>PM₁₀ Effects</u> The risk assessment indicates that on the basis of no mitigation being present, all assessed phases would present a 'Low Risk' to health effects.
Conclusions	Assessment indicates that air quality objectives will be met at the most exposed receptor locations, and that changes due to traffic generated by development are not significant. Therefore, it can be concluded that air quality at the Site is acceptable for development, and that development traffic will not lead to significant adverse impact upon existing air quality.
Recommendations	Assessment has shown that relevant air quality objectives will be met at the most exposed receptor locations. It is therefore considered that development-specific mitigation will not be required. Nevertheless, mitigation measures proportionate to the scale of development have been proposed to minimise the potential effects associated with increased air pollutant concentrations. In order to reduce impact from construction dust and emissions, relevant mitigation measures present in the IAQM guidance for a 'High Risk' site would be routinely included in the Site's dust management plan for the relevant phases.
This summary should be read in conjunction with the full report and reflects an assessment of the site based on information received by MEC at the time of production.	

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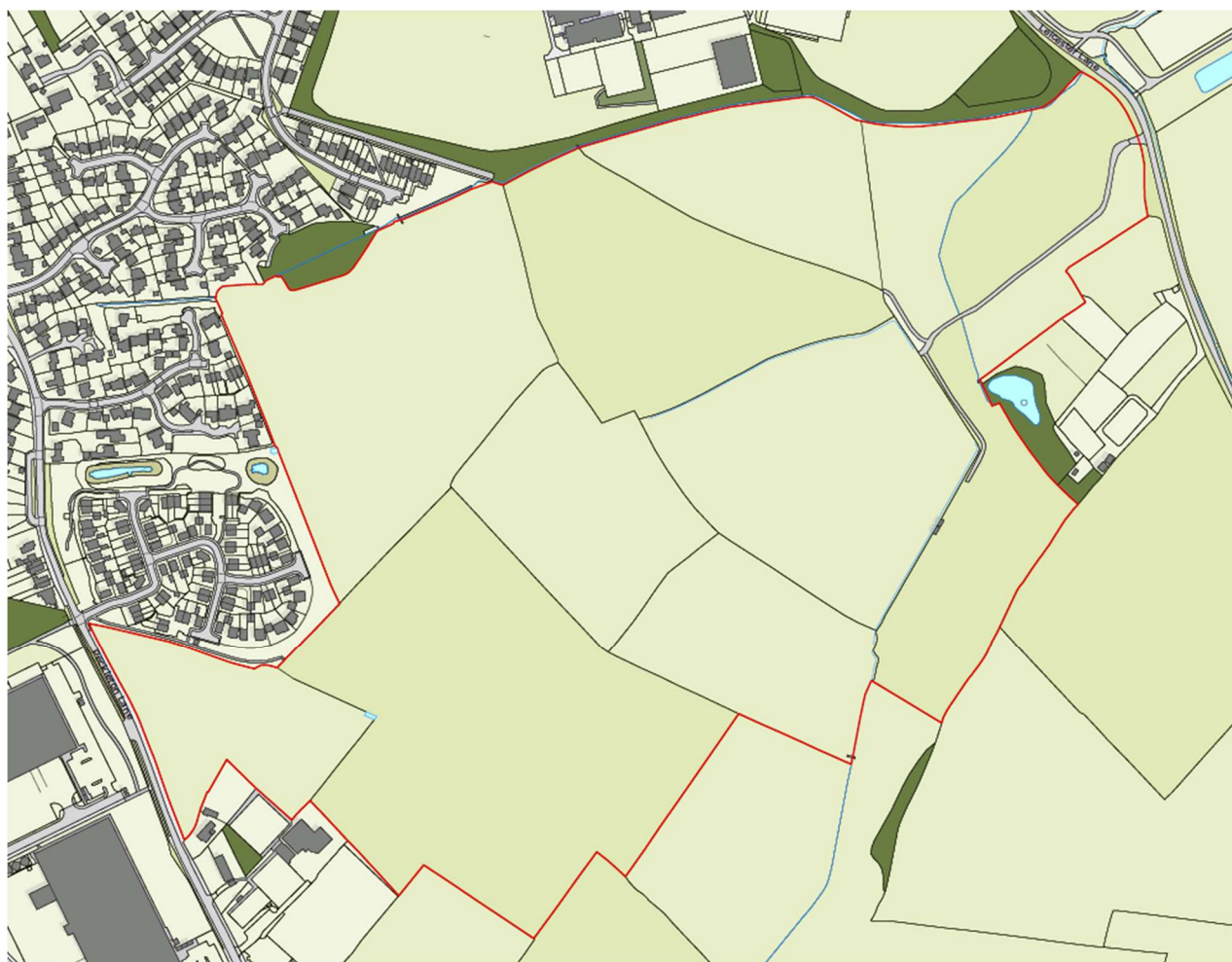
1.0 INTRODUCTION

- 1.1 MEC Consulting Group Ltd (MEC), has been commissioned by Bellway Strategic Land Ltd to undertake an Air Quality Assessment for a proposed residential development on Land South-east of Desford (hereafter referred to as ‘the Site’).

Existing Site

- 1.2 The Site, comprised of agricultural fields, is located along the southern edge of Desford, approximately 10km from Leicester City Centre. The Site is bound to the north by existing residential dwellings and Bosworth Adademy; to the east by Leicester Lane; the south by agricultural fields; and to the west by Peckleton Lane with commercial units opposite.
- 1.3 A redline boundary is presented in Figure 1.1.

Figure 1.1: Redline Boundary



Development Proposals

1.4 The description of development is as follows:

“Outline planning application for residential development, including provision of a primary healthcare facility and district centre [E Use Class]; sports facilities; public open space; access from Peckleton Lane and Leicester Lane with a connecting road; sustainable drainage; and associated infrastructure. All matters reserved except for access.”

1.5 An illustrative framework plan is provided in **Appendix A**.

Assessment Scope

1.6 Scoping discussions were undertaken with the Environmental Health Officer (EHO) at Hinckley and Bosworth Borough Council (HBBC). The methodology was agreed with the EHO, and scoping correspondence is provided in **Appendix B**.

1.7 The following scope of works has been undertaken:

- Assessment has been undertaken in accordance with Defra's LAQM¹ and the EPUK²;
- A review of the Local Authority's (LA) published air monitoring and modelling data for the area has been undertaken, so that air pollutant concentrations at the Site and its surroundings can be quantified relative to the relevant air quality objectives governed by the Air Quality (England) Regulations³;
- Modelling of relevant pollutants; nitrogen dioxide (NO₂) and particulates (PM₁₀ and PM_{2.5}) concentrations from nearby local roads has been undertaken using ADMS-Roads software, for comparison with the air quality objectives;
- A designated site screening assessment has been undertaken in accordance with Natural England Guidance⁴;
- A dust risk assessment has been undertaken in accordance with the IAQM⁵ construction guidance; and
- Best practice mitigation measures to offset development-related emissions, along with indicative dust control measures to protect existing sensitive development during the construction phase, have been recommended accordingly.

1.8 The conclusions of this report aim to demonstrate to the LA that air quality over the Site is acceptable for residential development, and that the development itself will not have any adverse impacts on ambient air quality for existing dwellings.

¹ Local Air Quality Management Technical Guidance 2022.

² Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) – Land-Use Planning & Development Control: Planning for Air Quality 2017.

³ UK National Air Quality Strategy (AQS) under Section 80 of the Environment Act 1995.

⁴ Natural England Guidance “Air pollution and development: advice for local authorities”, October 2025

⁵ Institute of Air Quality Management (IAQM) ‘Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance’ 2024.

Disclaimer

- 1.9 MEC has completed this report for the benefit of the individuals referred to in paragraph 1.1 and any relevant statutory authority which may require reference in relation to approvals for the proposed development. Other third parties should not use or rely upon the contents of this report unless explicit written approval has been gained from MEC.
- 1.10 MEC accepts no responsibility or liability for:
- a) The consequence of this documentation being used for any purpose or project other than that for which it was commissioned;
 - b) The issue of this document to any third party with whom approval for use has not been agreed.

2.0 AIR QUALITY STANDARDS

- 2.1 The principal air quality standards applied within the UK are the standards and objectives that were initially formulated within the Air Quality (England) Regulations 2000 (AQR) as amended in 2002. These were enacted as part of the UK National Air Quality Strategy (AQS) under Section 80 of the Environment Act 1995, and implement relevant directives of the European Union (EU). The latest version of the UK AQS was published in 2007.
- 2.2 It is important to note the distinction between air quality standards and objectives. Although the AQ Standards (AQS) define concentration levels that will avoid or minimise risks to health, they do not necessarily reflect levels that are presently technically feasible or economically efficient. In contrast, the AQ Objectives (AQO) have been set with regard to what is realistically achievable within a specified timetable. The approach adopted by the Strategy is to apply the objectives, where members of the public, in a non-occupational capacity and at locations close to ground level, are likely to be exposed over the averaging time of the objective, for example, over 1-hour, 24-hour or annual periods as appropriate.
- 2.3 Under the Environment Act 1995, Local Authorities must review and document local air quality within their areas by way of a staged appraisal and respond accordingly, with the aim of meeting the air quality objectives by the years defined in the Regulations. Where the objectives of the Regulations are not likely to be achieved by the objective year, an authority is required to designate an Air Quality Management Area (AQMA). For each AQMA the local authority is required to draw up an Air Quality Action Plan (AQAP) to secure improvements in air quality and show how it will try to meet air quality standards in future.
- 2.4 The Strategy's current air quality objectives, for NO₂, PM₁₀ and PM_{2.5}, for the protection of human health are summarised in Table 2.1 below. Definitions of units and terms used to quantify air pollutant concentrations are provided in **Appendix C**.

Table 2.1: UK Air Quality Objectives for Protection of Human Health

Pollutant	Concentration	Measured as *
Nitrogen dioxide	200 µg/m ³	1 hour mean not to be exceeded more than 18 times per year
	40 µg/m ³	Annual mean
Particles (PM ₁₀ gravimetric)	50 µg/m ³	Daily mean not to be exceeded more than 35 times a year
	40 µg/m ³	Annual mean
Particles (PM _{2.5} gravimetric)	20 µg/m ³ (target)	Annual mean
	10 µg/m ³	2030 Interim target ^(a)
	10 µg/m ³	Legally binding target 2040 ^(a)
^(a) DEFRA Environmental Improvement Plan (EIP) 2025		

- 2.5 The UK Government has also set NO₂ objectives for 2010 that must be met by all member states, although these 2010 EU NO₂ objectives are equal to the UK Air Quality Strategy NO₂ 2005 objectives.

- 2.6 The pollutants of most concern to planning authorities in urban areas, due to the high concentrations presently encountered (of which local road traffic makes a large contribution) are NO₂, PM₁₀ and PM_{2.5}.

National Planning Policy Framework

- 2.7 The latest National Planning Policy Framework (NPPF), issued by the Ministry of Housing, Communities and Local Government in 2024, sets out the Government's planning policies for England and how these are to be expected to be applied. The NPPF must be taken into account in the preparation of local and neighbourhood plans, and is to be a material consideration in planning decisions.
- 2.8 Paragraph 187 of the NPPF advises that, planning policies and decisions should contribute to and enhance the natural and local environment by *"...preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans"*.
- 2.9 Further, paragraph 199 advises that *"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"*.

Planning Practice Guidance

- 2.10 The Department for Communities & Local Government updated its on-line planning guidance to assist with interpretation of the NPPF. The guidance covers general matters such as relevance of air quality issues, role of the Local Plan, information sources, assessment approaches and mitigation. How considerations about air quality fit into the development management process is summarised by the guidance in a flowchart, which is included here in **Appendix D**.

Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) – Land-Use Planning & Development Control: Planning for Air Quality 2017

- 2.11 Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have produced this guidance to ensure that air quality is adequately considered in the land-use planning and development control processes.
- 2.12 The guidance clarifies when an air quality assessment is required and what it should contain. It sets out how impacts should be described and assessed. Importantly it sets out a recommended approach that can be used to assess the significance of the air quality impacts, taking account of the advice issued by IAQM. An

important focus of this guidance is on minimising the air quality impacts of all developments for which air quality assessments have been requested by the planning authority; this will be through good design and application of appropriate mitigation measures.

- 2.13 Stage 1 of the assessment in the local area seeks to screen out smaller development and/or developments where impacts can be considered to have insignificant effects. The Stage 1 criteria is set out in Table 2.2 and require any of the criteria in row A, coupled with any of the criteria in row B, to apply before an assessment proceeds to Stage 2. If none of the criteria are met then the impacts can be considered to be insignificant and there is no requirement to carry out an air quality assessment.

Table 2.2: Stage 1 Criteria

Criteria to Proceed to Stage 2
If any of the following apply: 10 or more residential units or a site of more than 0.5 ha - more than 1,000 m² of floor space for all other uses or a site area greater than 1 ha
Coupled with any of the following: - the development has more than 10 parking spaces - the development will have a centralised energy facility or other centralised combustion process
Note: Consideration should still be given to the potential impacts of neighbouring sources on the site, even if an assessment of impacts of the development on the surrounding area is screened out.

- 2.14 The criteria in Table 2.3 provide more specific guidance as to when an air quality assessment is likely to be required to assess the impacts of the proposed development on the local area.

Table 2.3: Indicative Criteria for Requiring an Air Quality Assessment

The development will:	Indicative Criteria to Proceed to an Air Quality Assessment
Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors. (LDV = cars and small vans <3.5t gross vehicle weight)	A change of LDV flows of: more than 100 AADT within or adjacent to an AQMA more than 500 AADT elsewhere
Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors. (HDV = goods vehicles + buses >3.5t gross vehicle weight)	A change of HDV flows of: more than 25 AADT within or adjacent to an AQMA more than 100 AADT elsewhere
Realign roads, i.e. changing the proximity of receptors to traffic lanes.	Where the change is 5m or more and the road is within an AQMA.
Introduce a new junction or remove an existing junction near to relevant receptors.	Applies to junctions that cause traffic to significantly change vehicle accelerate/decelerate, e.g. traffic lights, or roundabouts.
Introduce or change a bus station.	Where bus flows will change by: more than 25 AADT within or adjacent to an AQMA more than 100 AADT elsewhere.
Have an underground car park with extraction system.	The ventilation extract for the car park will be within 20m of a relevant receptor Coupled with the car park having more than 100 movements per day (total in and out)
Have one or more substantial combustion processes.	Where the combustion unit is: any centralised plant using bio fuel any combustion plant with single or combined thermal input >300kW

The development will:	Indicative Criteria to Proceed to an Air Quality Assessment
	a standby emergency generator associated with a centralised energy centre (if likely to be tested/used >18 hours a year)
Have a combustion process of any size.	Where the pollutants are exhausted from a vent or stack in a location and at a height that may give rise to impacts at receptors through insufficient dispersion. This criterion is intended to address those situations where a new development may be close to other buildings that could be residential and/or which could adversely affect the plume's dispersion by way of their size and/or height.

- 2.15 Where an air quality assessment is identified as being required, this may be either a Simple or a Detailed Assessment. A Simple Assessment is one relying on already published information and without quantification of impacts, in contrast to a Detailed Assessment that is completed with the aid of a predictive technique, such as a dispersion model. Passing a criterion in Table 2.3 does not automatically lead to the requirement for a Detailed Assessment. Once again, where none of the criteria are met the impacts can be considered to be insignificant and there is no requirement to carry out an air quality assessment.
- 2.16 The purpose of the air quality assessment is to define the likely quantitative or qualitative changes in air quality or exposure to air pollution as a result of the proposed development.
- 2.17 The suggested framework for describing the impacts on the basis set out above is set out in Table 2.4. The term Air Quality Assessment Level (AQAL) is used to include air quality objectives or limit values, where these exist. The Table is only intended to be used with annual mean concentrations, and all % changes are rounded up or down to whole numbers. At exposures less than 75% of the AQAL, the degree of harm is described as likely to be small. As the exposure encroaches and exceeds the AQAL the degree of harm increases, and the change becomes more important when the result is an exposure that is approximately equal to or greater than the AQAL.

Table 2.4: Impact Descriptors for Individual Receptors

Long term average Concentration at receptor in assessment year	% Change in concentration relative to Air Quality Assessment Level (AQAL)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76-94% of AQAL	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Slight	Moderate	Moderate	Substantial
103-109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

- 2.18 A judgement of the significance of the impacts is to be made by a competent professional who is suitably qualified, and the reasons for reaching the conclusions should be transparent and set out logically. Whilst the starting point for the assessment of significance is the degree of impact, as defined by Table 2.4, this should be seen as only one of the factors for consideration, not least because the outcome of this assessment procedure applies to a receptor and not the overall impact of the scheme on the locality.

- 2.19 The guidance also makes it clear that the presence of an AQMA should not halt all development, but where development is permitted, the planning system should ensure that any impacts are minimised as far as is practicable. Even where developments are proposed outside of AQMAs, and where pollutant concentrations are predicted to be below the objectives/limit values, it remains important that the proposed development incorporates good design principles and best practice measures and that emissions are fully minimised.

Natural England Guidance ‘Air pollution and development: advice for local authorities’, October 2025

- 2.20 This guidance is standing advice on the impact of air pollution on protected sites. The guidance relates to the protection of protected sites under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981.
- 2.21 Protected sites considered in this guidance are as follows:
- Special Protection Areas (SPAs) and potential SPAs;
 - Special Areas of Conservation (SACs) and possible SACs;
 - Wetlands of International Importance (Ramsar sites); and
 - Sites providing compensatory measures for adverse effects on habitats sites.
- 2.22 This guidance can be used for developments that will emit the following air pollutants:
- Ammonia (NH₃)
 - Nitrogen oxides (NO, NO₂ or NO_x)
 - Nitrogen deposition
 - Acid deposition
 - Sulphur dioxide (SO₂)
- 2.23 In order to determine the likely effect on air quality at a protected site, the following steps should be undertaken:
- Step 1 – check if emissions will reach a protected site
 - Step 2 – check relevant ‘critical loads’ and ‘critical levels’
 - Step 3 – check if agricultural developments can use an emissions reduction approach
 - Step 4 – consider the proposal in combination with other projects
 - Step 5 – complete a detailed air quality assessment

Construction Dust Nuisance

- 2.24 There is no specific guidance relating to the assessment of construction dust nuisance within Government documents such as the DMRB. Consequently, guidance from relevant national bodies provides the best advice for establishing the potential impacts from dust. Research carried out by the Buildings Research Establishment (BRE) indicates that the likelihood of complaints concerning dust nuisance is related to the distance of receptors from a construction site and the duration of dust raising activities. This relationship is shown in Table 2.5.

Table 2.5: Likelihood of Dust Complaints by Distance

Duration of dust raising activity onsite	Distance from site			
	< 20 m	20 – 50 m	50 – 100 m	100 – 150 m
	Likelihood of complaint			
> 12 months	Very Likely	Very Likely	Likely	Potential Likelihood
6 – 12 months	Very Likely	Likely	Likely	Potential Likelihood
< 6 months	Very Likely	Likely	Potential Likelihood	Not Likely
Note: Beyond 150 m dust nuisance is considered largely unlikely (Upton & Kukadia, 2002, Measurements of PM ₁₀ from a Construction Site: A Case Study, prepared by BRE Environment for National Society for Clean Air).				

- 2.25 Further empirically derived measures of the maximum distance from a source of airborne dust within which significant adverse effects are likely to be observed, are presented in Table 2.6. These values reflect qualitative estimates derived from historical data presented within environmental assessment reports and expert evidence.

Table 2.6: Qualitative Construction Dust Assessment Criteria

Source Descriptors		Zone for Potentially Significant Effects (Distance from Source)	
Source	Duration	Soiling	PM ₁₀ *
Large construction sites	1 year or more	100 m	25-50 m
Moderate sized construction sites	Months	50 m	15-30 m
Minor construction sites	Weeks	25 m	10-20 m
*Based on 35 permitted exceedances of 50 µg/m ³ in a year, as defined in The Air Quality (England) Regulations. Source: Adapted from Thames Gateway Bridge – Environmental Statement (Laxen, 2004)			

Dust Risk Assessment

- 2.26 The Institute of Air Quality Management (IAQM) Guidance on the assessment of dust from demolition and construction, January 2024, provides a framework for the assessment of risk.
- 2.27 The guidance divides activities on construction sites into four types to reflect their different potential impacts. These are:
- Demolition;
 - Earthworks;
 - Construction; and
 - Trackout.
- 2.28 The assessment methodology considers the following three separate dust effects, with account being taken of the distance of the receptors that may experience these effects.

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to a significant increase in exposure to PM₁₀.

2.29 The assessment procedures and risk categories for each of the four phases of construction where the potential for dust is high, i.e., those listed above, are summarised in **Appendix E**.

2.30 Step 1 establishes that an assessment will normally be required where there are dwellings within 250m of the site boundary.

3.0 LOCAL AUTHORITY AIR QUALITY REVIEW AND ASSESSMENT

Hinckley and Bosworth Borough Council

- 3.1 Air Quality within HBBC is generally good and to date, no AQMA have been declared.
- 3.2 HBBC's most recently published 2025 Annual Status Report (ASR) states that: *"The Annual Status Report did not identify any exceedances of the Air Quality Objectives. A close eye will be kept on planning applications, development to infrastructure and other factors likely to have an impact on Air Quality in the borough."*
- 3.3 HBBC operated a comprehensive network of 16 passive monitoring locations in 2024, and the most relevant monitoring locations to the Site, i.e., those used within the verification process, are shown in Table 3.1.

Table 3.1: Annual Mean NO₂ Concentrations

Site-ID	Location	Distance to Site (m)	OS Co-ordinates	Annual Mean Concentrations (µg/m ³)				
				2021	2022	2023	2024	2025 ^a
5	Peckleton Lane, Desford	0	448012, 302544	10.9	12.4	11.4	9.5	9.7
8	Wood Street, Earl Shilton	5,110	446320, 297756	21.6	19.1	17.7	16.2	17.3
11	216 Markfield Road, Groby	5,534	451376, 307147	18.8	18.1	17.1	13.8	15.6
10, 12, 14	6 Shaw Lane	8,855	447113, 331660	28.8	27.1	26.1	24.2	21.4

^a2025 monitored concentrations provided by EHO, 2026 ASR has not been issued

- 3.4 The results in Table 3.1, show concentrations in 2025 ranging between 9.7 µg/m³ and 21.4 µg/m³, i.e., well below the objective level of 40 µg/m³.

Summary

- 3.5 In conclusion, air quality within HBBC area is generally good, and there were no exceedances of the NO₂ annual mean recorded in 2025 at any location. Since 'relevant exposure' is already present adjacent to the Site, i.e. existing residential dwellings are present adjacent to the Site and local road, and these have already been considered within HBBC's reviews and assessments, the same conclusions will apply for new dwellings on the Site. Namely, all air quality objectives will be satisfied on the Site and at dwellings adjacent to the routes to the Site.
- 3.6 Nevertheless, it will be important that an air quality assessment for proposed development looks at the potential effects of traffic generated by development upon existing dwellings adjacent to local roads to establish that there will be no adverse effects upon their existing standards of air quality. This matter is covered in the following section.

4.0 METHODOLOGY

General

- 4.1 The assessment has been undertaken using the atmospheric dispersion modelling package ADMS-Roads Air Quality Management System Version 5.1, developed by Cambridge Environmental Research Consultants Ltd (CERC), to establish air pollutant concentrations at the proposed development.
- 4.2 The assessment has been undertaken with reference to guidance set out within Defra's LAQM.TG(22), the IAQM and EPUK's 'Guidance on Land-Use Planning and Development Control: Planning for Air Quality 2017 (v1.2)'.
- 4.3 Specifically, ADMS-Roads has been used to disperse emissions of NO_x and PM₁₀ from local road sources and derive resultant road contributions to the concentrations of these pollutants at specific existing receptor locations. When added to the background concentration, this provides an indication of the resulting air quality at each receptor location.
- 4.4 The ADMS-Roads model requires the input of background pollutant concentration data, hourly traffic flows, annual average vehicle speed, vehicle classification broken down into light and heavy duty vehicles (LDV/HDV), information on the type of road and meteorological data (model inputs are discussed in turn later).
- 4.5 Current guidance has led to some changes in the way in which NO₂ concentrations should be modelled. In accordance with LAQM.TG(22) the ADMS-Roads model has been used to derive road-based concentrations of NO_x at specific receptor locations. To convert the modelled road-based NO_x to annual NO₂ the 'NO_x to NO₂' calculator (Version 9.1) (available from <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/nox-to-no2-calculator/>) has been applied to all modelled results.

Assessment Scenarios

- 4.6 For the purpose of an Air Quality Assessment, sensitive receptors can be thought of as areas within 200m of the roadside where people may be subject to change in air quality. Beyond 200m from the roadside, atmospheric dispersion (and chemistry) effect render emissions from road traffic negligible.

The assessment considers the potential impact of emissions from development-related traffic upon NO₂, PM₁₀ and PM_{2.5} concentrations at individual receptor locations as shown in **Appendix F**. The following scenarios, informed by available HBBC NO₂ monitoring data and the Transport Assessment work, have been included in the assessment:

- 2025 Baseline (for verification);
- 2036 'Do Nothing', i.e., 2036 Baseline + Committed Development; and
- 2036 'Do Something', i.e., 2036 Do Nothing + Proposed Development.

Local Road Network

- 4.7 Local road sources have been input into the model using the interface between ADMS-Roads and the ADMS-Roads mapper, which enables roads to be input according to their geographic location using OS base mapping of the local area. Road/carriageway widths have been informed from OS base and aerial mapping.

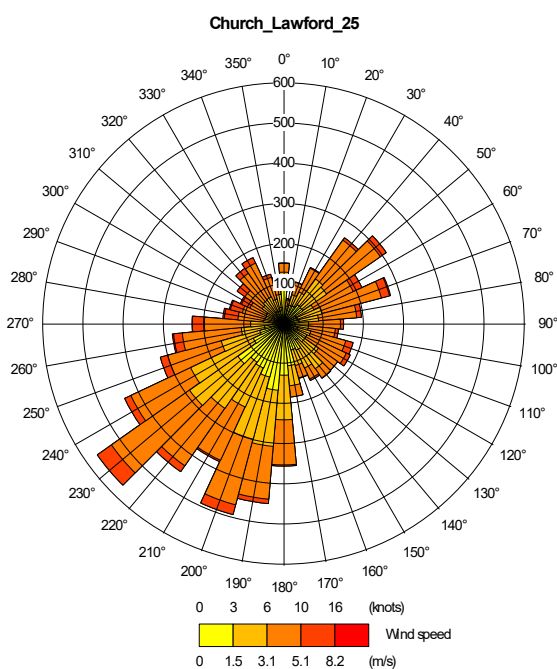
Traffic Data & Emissions

- 4.8 To inform emissions from each road source included within the model, traffic flows for the local road network have been provided by project's Transport Consultant; Mode. The available traffic flow data, % HGV and average speed assumptions for each assessment scenario are provided in **Appendix G** for information.
- 4.9 Emission rates for each road source have been derived from traffic flow data using the Emission Factor Toolkit (EFT), Version 14.0, published by Defra and the devolved administrations in May 2026. Emissions have been calculated and included within the model. The EFT allows users to calculate road vehicle pollutant emission rates for pollutants for a specified year, road type, and vehicle speed and vehicle fleet composition.
- 4.10 With regard to NH₃, emission rates have been obtained from the Calculator for Road Emissions of Ammonia (CREAM V2) produced by Air Quality Consultants Ltd and Logika Group, a resource referenced by Defra.

Meteorology

- 4.11 The closest meteorological station with a complete data set is Church Lawford Weather Station, located at a distance of approximately 28.1km to the south of the Site.
- 4.12 The Church Lawford windrose for the Site is presented in Figure 4.1. The predominant wind direction associated with the highest wind speeds, is from the southwest.

Figure 4.1: Church Lawford Weather Station Windrose, 2025



Background Concentrations

- 4.13 Background concentrations of NO₂, NO_x, PM₁₀ and PM_{2.5} have been obtained from the 2021-based maps available on the Defra website (<https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021>) which provide estimated background pollutant concentrations for each 1kmx1km grid square in the UK.
- 4.14 As the background maps provide data for individual pollutant sectors, those sectors relating to road traffic have been removed to avoid double counting of road emissions. As only total background concentrations are provided for NO₂, the NO₂ map has been adjusted using the online NO₂ Adjustment for NO_x Sector Removal Tool (Version 9.0), <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/no2-adjustment-for-nox-sector-removal-tool/>.

Verification

- 4.15 To determine how well the model is performing and to correct any over or under estimation of pollutant concentrations, LAQM.TG(22) recommends a verification process that should be applied. Verification involves a comparison between predicted and measured 'road traffic contributions' at one or more local sites and adjustment of the modelled concentrations if necessary.
- 4.16 HBBC's monitored results used within the verification process are shown in Table 4.1 below.

Table 4.1: HBBC Monitoring Data Used in Verification

Site-ID	OS Co-ordinates	Annual Mean Concentrations (µg/m ³)
		2025
5	448012, 302544	9.7
8	446320, 297756	17.3
11	451376, 307147	15.6
10, 12, 14	447113, 331660	21.4

- 4.17 A derived adjustment factor of 0.8 has been calculated, however in order to provide a robust assessment an adjustment factor of 1.0 has been applied to all modelled road contribution NO_x and PMs. Details of this verification process are included in **Appendix H**. In order to get to the verification factors shown above, a reduction of assumed road speeds along the existing roads has been applied.
- 4.18 In addition to this, a Root Mean Square Error (RMSE) has been calculated to determine the error within the calculations. The calculations for the RMSE are provided in **Appendix H**. The calculated RMSE is 1.7 µg/m³, which correlates to an error ratio of 4%. The RMSE means that modelled results could be under or over predicting pollution concentrations by between +/- 1.7 µg/m³.
- 4.19 It is considered that any attempts to reduce the verification factor further would lead to unrealistic speeds along the links in question, which would be unrepresentative of the average daily speed on the relevant road. Nevertheless, a calculated RMSE of 4% is considered to correlate well for assessment purposes.

5.0 AIR QUALITY AND CONSTRUCTION DUST ASSESSMENT

General

- 5.1 This section of the report outlines the findings of the assessment discussed in Section 4.0. Having established the likely change in pollutant concentrations arising from the ‘do something’ assessment scenarios, the potential local air quality impact of the proposed development has been described using the approach set out in the IAQM and EPUK ‘Guidance on Land-Use Planning and Development Control: Planning for Air Quality 2017’.
- 5.2 EPUK Guidance suggests a two-stage process to be followed in the assessment:
- A qualitative or quantitative description of the impacts on local air quality arising from the development; and
 - A judgement on the overall significance of the effects of any impacts.
- 5.3 For air quality impacts on the surrounding area (i.e., existing receptors), a practical way of assigning a meaningful description to the degree of an impact is to express the magnitude of incremental change as a proportion of the relevant assessment level and then to examine this change in the context of the new total concentration and its relationship with the assessment criterion. The suggested IAQM/EPUK framework for describing the impacts on the basis set out above is shown in Table 2.4.

Results

- 5.4 The findings of the assessment of pollutant concentrations at each of the receptor locations for the modelled scenarios are discussed below.
- 5.5 These results should be compared with the objectives listed in Table 2.1, and summarised as follows:
- NO₂ average annual mean not to exceed 40 µg/m³;
 - PM₁₀ average annual mean not to exceed 40 µg/m³; and
 - PM_{2.5} average annual concentrations not to exceed 10 µg/m³.

Nitrogen Dioxide (NO₂)

- 5.6 The results in **Appendix I** indicate that for a baseline do-nothing scenario in 2036, receptors adjacent to all roads have values well below the current annual mean air quality objectives (40 µg/m³) for NO₂, which is consistent with HBBC’s air quality and review data.
- 5.7 With traffic generated by development in 2036, i.e., the do-something scenario, the absolute concentrations remain below the current air quality objectives for all receptors, and the incremental change due to traffic generated by development is small (0.18 µg/m³ or less to annual mean concentrations of NO₂), which would not have a significant impact upon local air quality.
- 5.8 The impact significance in accordance with the EPUK/IAQM guidance indicates that for all receptors, impact due to development is classed as ‘Negligible’, and none of the changes exceed 1% of the AQAL.

- 5.9 With regard to the 1-hour mean objective LAQM.TG(22) advises that *“A study carried out on behalf of Defra and the Devolved Administrations identified that exceedances of the NO₂ 1-hour mean are unlikely to occur where the annual mean is below 60 µg/m³”*. As the results in **Appendix I** indicate annual mean concentrations of NO₂ will remain below 60 µg/m³, it is considered that the NO₂ 1-hour objective will not be exceeded at any receptor.

Particulate Matter (PM₁₀)

- 5.10 The results in **Appendix I** indicate that for a baseline do-nothing scenario in 2036, receptors adjacent to all roads have values below the current annual mean air quality objectives (40 µg/m³) for PM₁₀.
- 5.11 With traffic generated by development, i.e., the do-something scenario in 2036, the absolute concentrations remain below the current air quality objectives and the incremental change due to traffic generated by development is small (0.24 µg/m³ or less to annual mean concentrations of PM₁₀), which would not have a significant impact upon local air quality.
- 5.12 The impact significance in accordance with the EPUK/IAQM guidance indicates that for all receptors, impact due to development is classed as ‘Negligible’, and none of the changes exceed 1% of the AQAL.

Particulate Matter (PM_{2.5})

- 5.13 The results in **Appendix I** indicate that for a baseline do-nothing scenario in 2036, all receptors have values below the 2030 interim target level of 10 µg/m³ for PM_{2.5}.
- 5.14 With traffic generated by development in 2036, the absolute concentrations remain below the interim target, and the incremental change due to traffic generated by development is small (0.16 µg/m³ or less to annual mean concentrations of PM_{2.5}), which would not have a significant impact upon local air quality.
- 5.15 The impact significance in accordance with the EPUK/IAQM guidance indicates that for all receptors, the impact due to development is classed as ‘Negligible’, and none of the changes exceed 1% of the AQAL.
- 5.16 Therefore, using the significance flowchart in **Appendix D**, air quality is not considered to be a significant consideration and the proposed development can proceed to a planning decision with conditions where appropriate.
- 5.17 Since the air quality assessment indicates that the annual mean air quality objective will be met at the most exposed receptor locations on the Site, and since the actual changes due to traffic generated by development for existing receptors are small and not significant, it can be concluded that the air quality at the Site is acceptable for development, and that development traffic will not lead to significant adverse impact upon existing air quality.

Construction Dust Risk Assessment

- 5.18 Nuisance dust impacts are likely to be temporary and episodic (most noticeable during dry windy conditions) and would not persist beyond completion of construction.

- 5.19 Where dust raising activities are present for 12 months or more, dust complaints are considered to be very likely for those closest receptors to the Site that lie between 10-30m from the Site boundary. Therefore, appropriate dust mitigation measures will be required to minimize dust emissions from the Site.
- 5.20 In addition, the qualitative dust assessment criteria in Table 2.6 indicates that existing premises adjacent to the Site will lie within the zone for potentially significant effects for soiling and ambient concentrations of PM₁₀.
- 5.21 Applying IAQM risk assessment procedures as set out in **Appendix D** requires an assessment where there are sensitive receptors within 250m of the Site boundary of the works and/or within 50m of the routes used by construction vehicles on the public highway up to 500m from the Site entrance. An illustrative plan of the buffer zones is presented in **Appendix J** and highlights that existing premises fall within 250m zone, which triggers the initial screening criterion.
- 5.22 There are no demolition requirements for the Site, and no known ecological areas within 50m of the works, therefore, the relevant phases and classification assumptions are summarised as follows:
- Earthworks: 'Large'; based on an estimated site area greater than the 110,000m² threshold;
 - Construction: 'Large'; based on an estimated building volume greater than the 75,000m³ threshold;
 - Track-out: 'Large'; based on the prediction of unpaved road lengths greater than 100m.
- 5.23 However, it should be noted that not all of the Site would require intensive earthworks, nor would it require large numbers of plant or significant amounts of spoil removal, nor are the types of construction work or soil conditions likely to lead to anything more than being 'moderately dusty'.
- 5.24 The stages considered by the dust risk assessment are presented in Table 5.1.

Table 5.1: Dust Risk Assessment

Step	Consideration	Demolition	Earthworks	Construction	Track-out
2a	Scale/nature of works	-	Large	Large	Large
2b	Sensitivity of area:				
	To dust soiling	-	High	High	High
	To PM ₁₀ health effects	-	Low	Low	Low
	To ecological effects	-	-	-	-
2c	Risk of Dust Impacts	-	High Risk	High Risk	High Risk

- 5.25 The assessments in Table 5.1 and the IAQM matrices have been used to define the Site-specific mitigation requirements for the construction phases and the overall risk assessment for dust from the construction works is summarised in Table 5.2.

Table 5.2: Summary of Dust Risk Table to Define Site-Specific Mitigation

Source	Dust Soiling Effects	PM ₁₀ Effects	Ecological Effects
Demolition	-	-	-
Earthworks	High Risk	Low Risk	-
Construction	High Risk	Low Risk	-
Trackout	High Risk	Low Risk	-

- 5.26 With regard to dust soiling, the risk assessment indicates that on the basis of no mitigation being present, all assessed phases would present a 'High Risk'.
- 5.27 With regard to PM₁₀ effects, the risk assessment indicates that on the basis of no mitigation being present, all assessed phases would present a 'Low Risk' to health effects.
- 5.28 The IAQM guidance on the mitigation measures needed to deal with low, medium or high risk effects is set out in **Appendix K**.

6.0 DESIGNATED SITES SCREENING ASSESSMENT

Designated Sites

- 6.1 The Botcheston Bog Site of Special Scientific Interest (SSSI) is located approximately 1.3km to the north of the Site. Botcheston Road runs adjacent to the eastern boundary of the SSSI.
- 6.2 A screening assessment has been undertaken in accordance with NE Guidance. The screening assessment has been undertaken to determine if a detailed assessment would be required.
- 6.3 The screening assessment has been modelled using 2036 traffic flow data, together with 2036 background and emissions data. There are no available background maps for NH₃ and therefore, background concentrations of NH₃ at the SSSI have been obtained from the Air Pollution Information System⁶ (APIS), which presents a mid-year (3 year average) for 2023.
- 6.4 Subject to the type of vegetation within the designated site, the change in nitrogen deposition and critical load due to traffic generated by the Site may warrant further assessment.
- 6.5 The pollutant of most concern for sensitive vegetation near roads is nitrogen oxide (NO_x). The First EU Daughter Directive set a Limit Value for NO_x for the protection of vegetation (an annual mean of 30 µg/m³). This value was based on the work of the United Nations Economic Commission for Europe (UNECE) and the World Health Organisation (WHO) and has been incorporated into the UK Air Quality Limit Value Regulations. The policy of the UK statutory nature conservation agencies is to apply the 30 µg/m³ criterion in internationally designated conservation sites and SSSIs on a precautionary basis.
- 6.6 NO_x is composed of nitric oxide (NO) and its oxidation product nitrogen dioxide (NO₂). The latter is taken up by plants principally through their stomata. Concentrations of NO₂ are higher close to roads so vegetation in these areas is exposed to a larger source of nitrogen (N).
- 6.7 With regard to potential effects of traffic emissions on vegetation, critical loads for the deposition of nitrogen, which represent the exposure below which there should be no significant harmful effects on sensitive elements of the ecosystem, have been established for certain habitats dependent on low nitrogen levels. Critical loads are expressed in deposition units of kg N ha⁻¹ year⁻¹.
- 6.8 The specific habits relevant to Botcheston Bog, and the corresponding critical level or loads are provided in Table 6.1.

⁶ Air Pollution Information System – GIS map tool - <https://www.apis.ac.uk/app>

Table 6.1: Habitat Classes and Critical Loads/Levels

Designated Site	Habitats	Critical Loads (kgN/ha/yr)	NO _x Critical Level (µg/m ³)	Ammonia Critical Level (µg/m ³)
Botcheston Bog	Alopecurus Pratensis - Sanguisorba Officinalis Grassland	10-20	30	3
	Cynosurus Cristatus - Centaurea Nigra Grassland	10-20	30	3
	Juncus Subnodulosus - Cirsium Palustre Fen Meadow	15-25	30	1-3

- 6.9 The calculated concentrations of NO_x, NO₂ and ammonia affecting the designated site, together with the equivalent dry deposition rate, the road contribution from the respective road links and the total deposition affecting the designated site from all sources are presented in **Appendix I**.
- 6.10 The results in **Appendix I** show that for both the 'Do Nothing' and 'Do-something' scenarios, the critical level for NO_x is not exceeded at all assessed receptor locations. For N deposition, values lie within the critical load range at all locations. For Ammonia, values lie below the upper critical level at assessed receptor locations.
- 6.11 The NE guidance states that if development emissions contribution is 1% or more of any critical level or load then a detailed assessment would be required. With regard to the development impact, the results show that the % change at all assessed locations does not exceed 1% of the critical level/load for all assessed pollutants for all of the habitats shown in Table 6.1.
- 6.12 In accordance with NE Guidance a detailed assessment is not required as the %change for all assessed pollutants is less than 1% of the relevant critical level/load.

7.0 MITIGATION

7.1 Assessment has shown that the annual mean air quality objectives will be met at the most exposed receptor locations. It is therefore considered that development-specific mitigation will not be required.

7.2 Nevertheless, to assist in offsetting incremental creep in pollutant emissions, a number of sustainable development measures should be considered, these are as follows:

- Electric vehicle charging – in accordance with Approved Document S, adopted in June 2022;
- Low NO_x heating and boilers;
- Monitored Travel Plan;
- Measures to support public transport infrastructure and promote use; and
- Measures to support cycling and walking infrastructure.

Construction Dust Mitigation

7.3 The relevant mitigation presented in **Appendix K** appropriate for 'High Risk' site would be routinely included in the Site's dust management plan for the relevant phase of construction. Key measures known to minimise dust emissions and represent good practice guidance are summarised in Table 7.1.

Table 7.1: Key Dust Mitigation Measures

Aspect	Mitigation Measures
Site Planning	No bonfires
	Plan site layout - machinery and dust causing activities should be located away from sensitive receptors
Construction Traffic	All vehicles should switch off engines when not in active use – no idling vehicles
	Wash or clean all vehicles effectively before leaving the site if close to sensitive receptors
	All loads entering and leaving site to be covered
	No site runoff of water or mud
	All non-road mobile machinery (NRMM) to use ultra low sulphur tax-exempt diesel (ULSD) where available
Site Activities	To employ best practicable means in the control of dust
	Minimise dust generation activities
	Use water as dust suppressant where possible
	Keep stockpiles for the shortest possible times
Site Management	Appointment of a site agent whose contact details are provided to the LPA's Environmental Health Department and local residents prior to construction works starting.
	Agent to provide immediate response to any complaints by logging details of complaint and investigating source of complaint to establish whether routine mitigation measures have been properly implemented. If necessary, appropriate steps to be taken to mitigate against any adverse effects, and details of actions to be logged.

8.0 CONCLUSIONS

- 8.1 MEC, has been commissioned by Bellway Strategic Land Ltd to undertake an Air Quality Assessment for a proposed residential development at Land South-east of Desford.
- 8.2 This Air Quality Assessment has sought to examine the impact of development traffic road emissions from the proposed development upon existing sensitive receptors. The key traffic related pollutants considered are nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}).
- 8.3 The assessment has been undertaken with reference to the advice provided within the Land-Use Planning and Development Control: Planning for Air Quality, and 'Guidance from Environmental Protection UK, the Institute of Air Quality Management for the consideration of air quality within the land-use planning and development control processes', May 2017, and the 'Guidance on the assessment of dust from demolition and construction' 2024.
- 8.4 The following scenarios have been included in the assessment:
- 2025 Baseline (for verification);
 - 2036 'Do Nothing', i.e., 2036 Baseline + Committed Development; and
 - 2036 'Do Something', i.e., 2036 Do Nothing + Proposed Development.
- 8.5 The model has been verified using 2025 NO₂ monitoring data provided by HBBC. The verification has derived an adjustment factor 0.8, which in order to provide a robust assessment, a factor of 1.0 has been applied to all modelled outputs.

Nitrogen Dioxide (NO₂)

- 8.6 The assessment results indicate that for a baseline do-nothing scenario in 2036, receptors adjacent to all roads have values well below the current annual mean air quality objectives (40 µg/m³) for NO₂, which is consistent with HBBC's air quality and review data.
- 8.7 With traffic generated by development in 2036, i.e., the do-something scenario, the absolute concentrations remain below the current air quality objectives for all receptors, and the incremental change due to traffic generated by development is small (0.18 µg/m³ or less to annual mean concentrations of NO₂), which would not have a significant impact upon local air quality.
- 8.8 The impact significance in accordance with the EPUK/IAQM guidance indicates that for all receptors, impact due to development is classed as 'Negligible', and none of the changes exceed 1% of the AQAL.
- 8.9 With regard to the 1-hour mean objective LAQM.TG(22) advises that *"A study carried out on behalf of Defra and the Devolved Administrations identified that exceedances of the NO₂ 1-hour mean are unlikely to occur where the annual mean is below 60 µg/m³".* As the results indicate annual mean concentrations of NO₂ will remain well below 60 µg/m³, it is considered that the NO₂ 1-hour objective will not be exceeded at any receptor.

Particulate Matter (PM₁₀)

- 8.10 Annual mean PM₁₀ concentrations are also expected to remain below the annual mean objective at all assessed receptor locations, and the development's impact on local concentrations is defined as 'Negligible' for all assessed receptors, with none of the changes exceeding 1% of the AQAL.

Particulate Matter (PM_{2.5})

- 8.11 Similarly, annual mean PM_{2.5} concentrations are also expected to remain below the 2030 interim target level of 10 µg/m³ at all assessed receptor locations, and the development's impact on local concentrations is defined as 'Negligible' for all assessed receptors, with none of the changes exceeding 1% of the AQAL.
- 8.12 Therefore, since the air quality assessment indicates that the annual mean air quality objective will be met at the most exposed receptor locations on the Site, and since the actual changes due to traffic generated by development for existing receptors are small and not significant, it can be concluded that the air quality at the Site is acceptable for development, and that development traffic will not lead to significant adverse impact upon existing air quality.
- 8.13 Mitigation measures proportionate to the scale of development have been proposed to minimise the potential effects associated with increased air pollutant concentrations.

Designated Sites Screening Assessment

- 8.14 A screening assessment has been undertaken in accordance with the latest NE guidance on Botcheston Bog SSSI. The screening assessment examines the percentage increase in concentration caused by increased traffic flows from committed developments and the Site.
- 8.15 The results show that for both the 'Do Nothing' and 'Do-something' scenarios, the critical level for NO_x is not exceeded at all assessed receptor locations. For N deposition, values lie within the critical load range at all locations. For Ammonia, values lie below the upper critical level at assessed receptor locations.
- 8.16 With regard to the development impact, the results show that the % change at all assessed locations does not exceed 1 % of the critical level/load for all assessed pollutants, indicating that a detailed assessment is not required.

Construction Dust

- 8.17 With regard to dust soiling, the risk assessment indicates that on the basis of no mitigation being present, all phases would present a 'High Risk' to dust soiling.
- 8.18 With regard to PM₁₀ effects, the risk assessment indicates that on the basis of no mitigation being present, all phases would present a 'Low Risk' to health effects.
- 8.19 The relevant mitigation measures present in the IAQM guidance for a 'High Risk' site would be routinely included in the Site's dust management plan for the relevant phases.

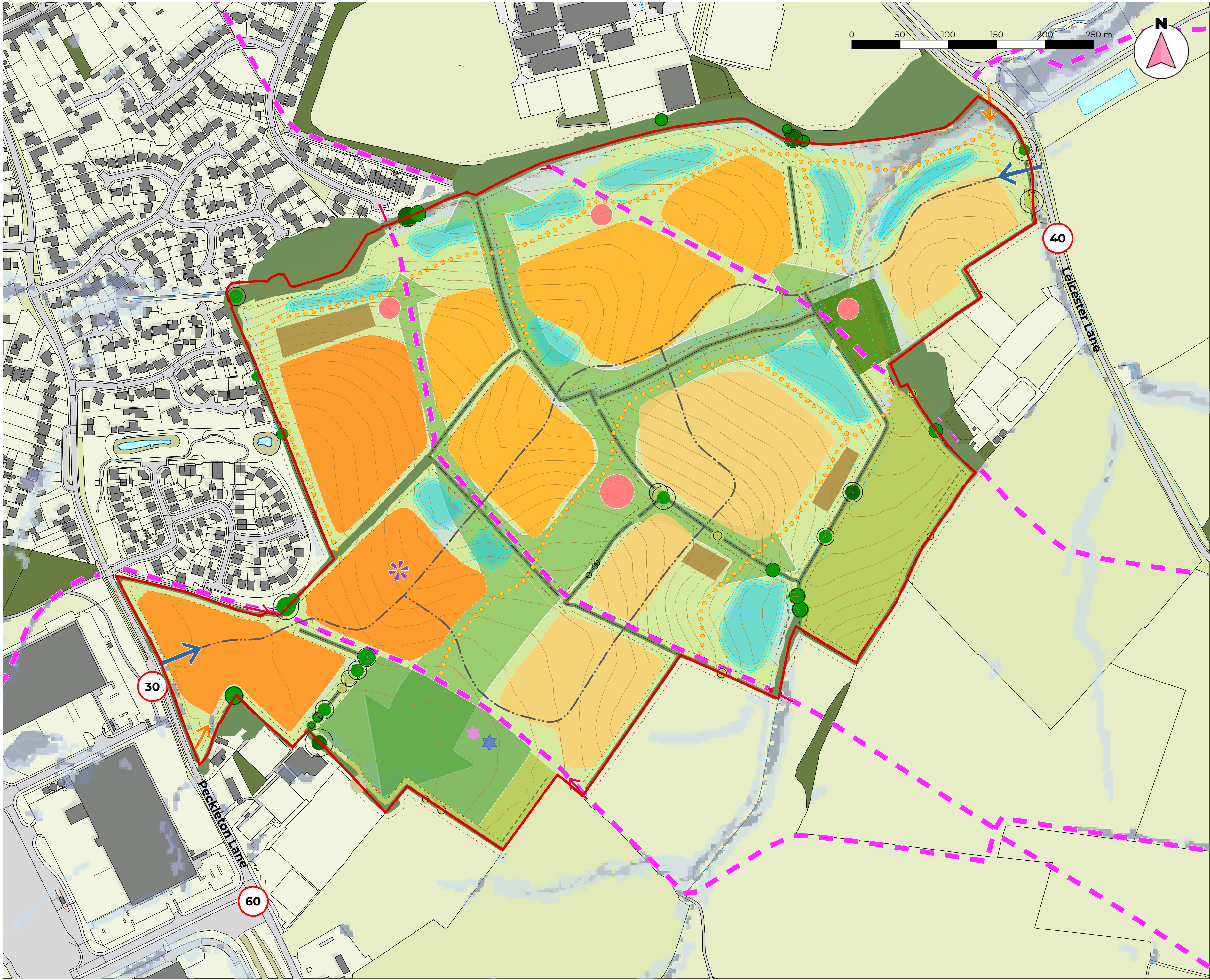


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APPENDICES

Appendix A





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PRE-APPLICATION

- Site boundary (49.197ha)
- - - Public Rights of Way (PROW)
- Existing pedestrian access
- Proposed vehicular access point
- Proposed pedestrian access
- - - Proposed link road through development
- Surface water (High-Low risk)
- Indicative areas for attenuation
- - - Indicative Skylark mitigation
- - - 5m offset from existing hedgerow

Tree Survey:

- Category A canopy (&RPA)
- Category B canopy (&RPA)
- Category C canopy (&RPA)
- Category U canopy (&RPA)

- Indicative location for Play
- Recreational routes
- Lower landscape sensitivity area (5.3ha @ 40dph = 212 dwellings)
- Medium landscape sensitivity area (5.47ha @ 35dph = 191 dwellings)
- Higher landscape sensitivity area (5.67ha @ 30dph = 170 dwellings)
- Area identified for sport pitches (2ha)
- Indicative location for Skate Park
- Indicative location for changing facilities and parking
- Local centre inc. potential community uses (e.g. Potential GP)
- Green corridors
- Natural and semi natural green space (2.88 ha)
- Amenity green spaces
- Indicative location for parks and gardens (0.51ha)

Rev.	Date	Description
Land south-east of DESFORD		
Illustrative Framework Plan		
Job ref:	Drawing number:	Revision:
785	SK02	
Scale:		Date:
1:2500 @ A2		June 2026

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APPENDICES

Appendix B



Daniel Newbery

From: Giles Rawdon [REDACTED]
Sent: 11 June 2026 11:39
To: Daniel Newbery
Subject: RE: Peckleton Lane, Desford

Daniel,

Yes that's fine- the data will be submitted next week in the ASR but has already been uploaded to the LAQM Portal.

Thanks

Giles

From: Daniel Newbery [REDACTED]
Sent: 11 June 2026 11:37
To: Giles Rawdon <[REDACTED]>
Subject: RE: Peckleton Lane, Desford

Giles,

Thank you for the quick response on the latest monitoring data. Are we okay to use this data within our assessment?

Kind regards

Daniel Newbery BSc (Hons) MIOA MEnvSc AMIAQM
Senior Acoustic and Air Quality Consultant
Birmingham | Brighton | Leicester | Nottingham



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Consulting Group



T: [REDACTED]
[REDACTED]
[REDACTED]

W: [REDACTED]

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From: Giles Rawdon <[REDACTED]>
Sent: 11 June 2026 11:31
To: Daniel Newbery <[REDACTED]>
Subject: RE: Peckleton Lane, Desford

Morning Daniel

That sounds fine.

Our monitoring site 5 is located on Peckleton Lane and has been running a couple of years now. I have attached our latest monitoring figures that will be reported soon.

Thanks

Giles

Rawdon

Environmental Health Officer
(Environmental Protection)



Hinckley & Bosworth
Borough Council



From: Daniel Newbery >
Sent: 11 June 2026 11:18
To: Giles Rawdon <>
Subject: Peckleton Lane, Desford
Importance: High

Hello Giles,

I hope you are well.

We have been commissioned to undertake an air quality assessment for a proposed residential scheme of approximately 550 dwellings at a Site located off Peckleton Lane, Desford. A site location plan is attached.

In order to undertake the air quality assessment we propose to undertake the following:

- Undertake a review of HBBCs published annual status report
- Undertake modelling of PM₁₀, PM_{2.5} and NO₂ pollutant concentrations will be undertaken using ADMS-Roads software. Modelled results will be verified using HBBC's local air quality monitoring data. Verification will be used to establish model performance and, if necessary, yield a correction factor for modelled, road-based NO_x in compliance with relevant statutory and non-statutory guidance documents.
- The potential effects of dust and traffic emissions during construction would be considered, and controls necessary to protect existing sensitive development would be recommended. Information on the proposed methods of construction during the different phases of construction would be used to undertake a dust risk assessment in accordance with the Institute of Air Quality Management (IAQM) Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance, and indicative dust control measures would be recommended.

In order to undertake the modelling we propose to use the following council monitoring locations for verification, provided suitable traffic data can be obtained.

Site-ID	OS Co-ordinates	Annual Mean Concentrations (µg/m ³)
---------	-----------------	---

		2024
8	446320, 297756	16.2
9	446696, 296771	13.8
11	451376, 307147	13.8
10, 12, 14	447113, 331660	24.2

Would these located be acceptable?

In terms of the assessment scenarios we have been provided traffic data for the following scenarios:

- 2036 Base
- 2036 Base + Proposed

We have provided a plan showing the study area and the roads we have been provided traffic data for.

Any comments on the above proposed assessment, would be greatly appreciated.

Kind regards

Daniel Newbery BSc (Hons) MIOA MEnvSc AMIAQM
Senior Acoustic and Air Quality Consultant

Birmingham | Brighton | Leicester | Nottingham



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W: [Redacted]

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APPENDICES

Appendix C



DEFINITION OF AIR QUALITY TERMS AND UNITS

ppm	parts per million - defines the units of pollution in every million (10^6) units of air.
ppb	parts per billion - defines the units of pollution in every billion (10^9) units of air.
$\mu\text{g}/\text{m}^3$	microgrammes per cubic metre - one microgramme is one millionth of a gram.
ng/m^3	nanogrammes per cubic metre – one nanogramme is one milliardth (i.e. one thousand millionth of a gram (10^{-9}))
Annual mean	the average of the concentrations measured for one year.
1-hour mean	the average of the concentrations measured for one hour.
24-hour mean	the average of the concentrations measured for twenty four hours.
Running mean	the mean or series of means calculated for overlapping time periods. For example, an 8-hour running mean is calculated every hour and averages the values for eight hours. The period of averaging is stepped forward by one hour for each subsequent value so that a degree of overlap exists between successive values. Non-running means are calculated for consecutive time periods so that there is no overlap.
Percentile	a value that establishes a particular threshold in a collection of data. For example, the 90 th percentile of yearly values is the value that 90% of all the data in the year fall below or equal.
Exceedance	a period of time when the concentration of a pollutant is greater than, or equal to, the relevant air quality standard.

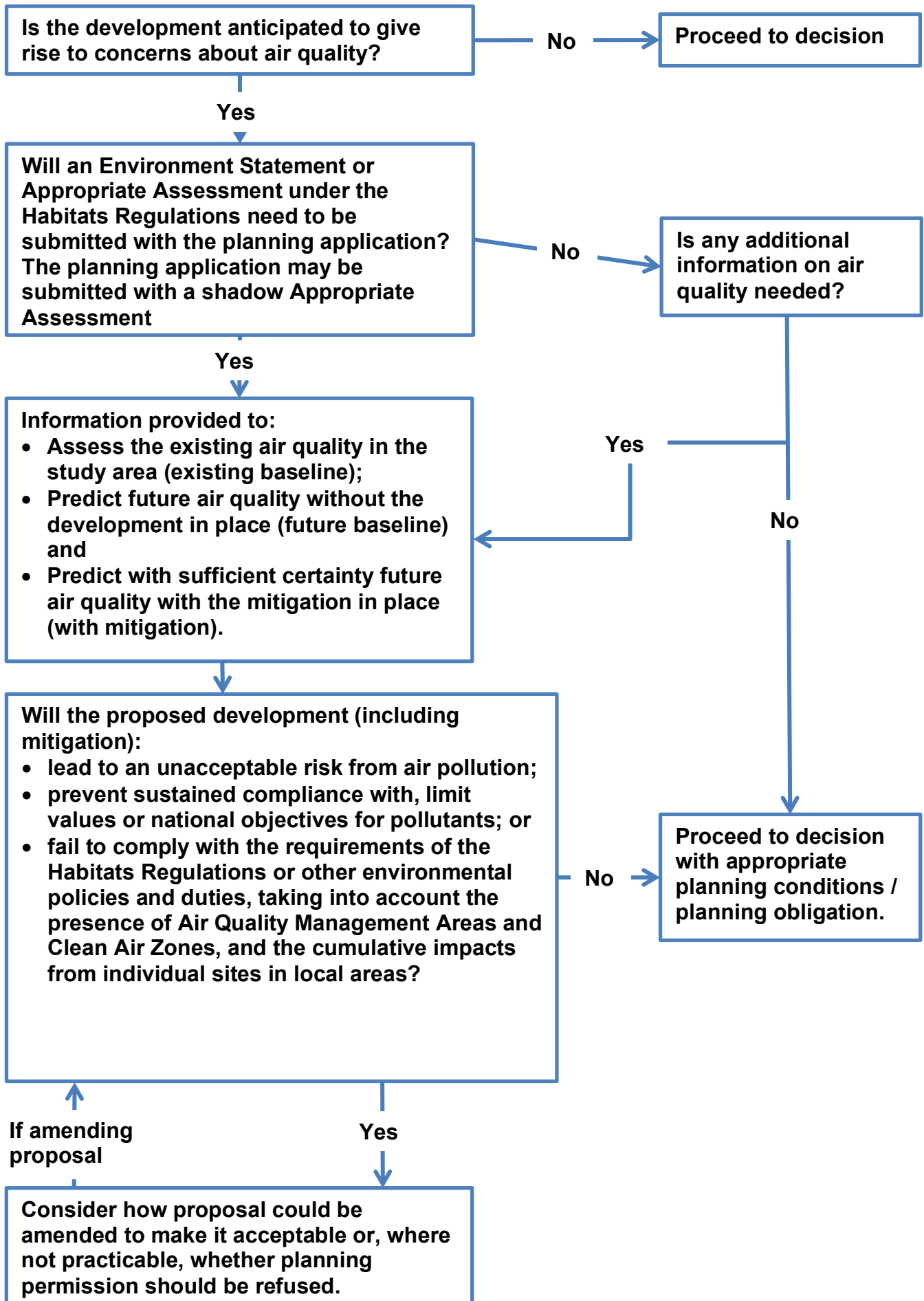


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Appendix D







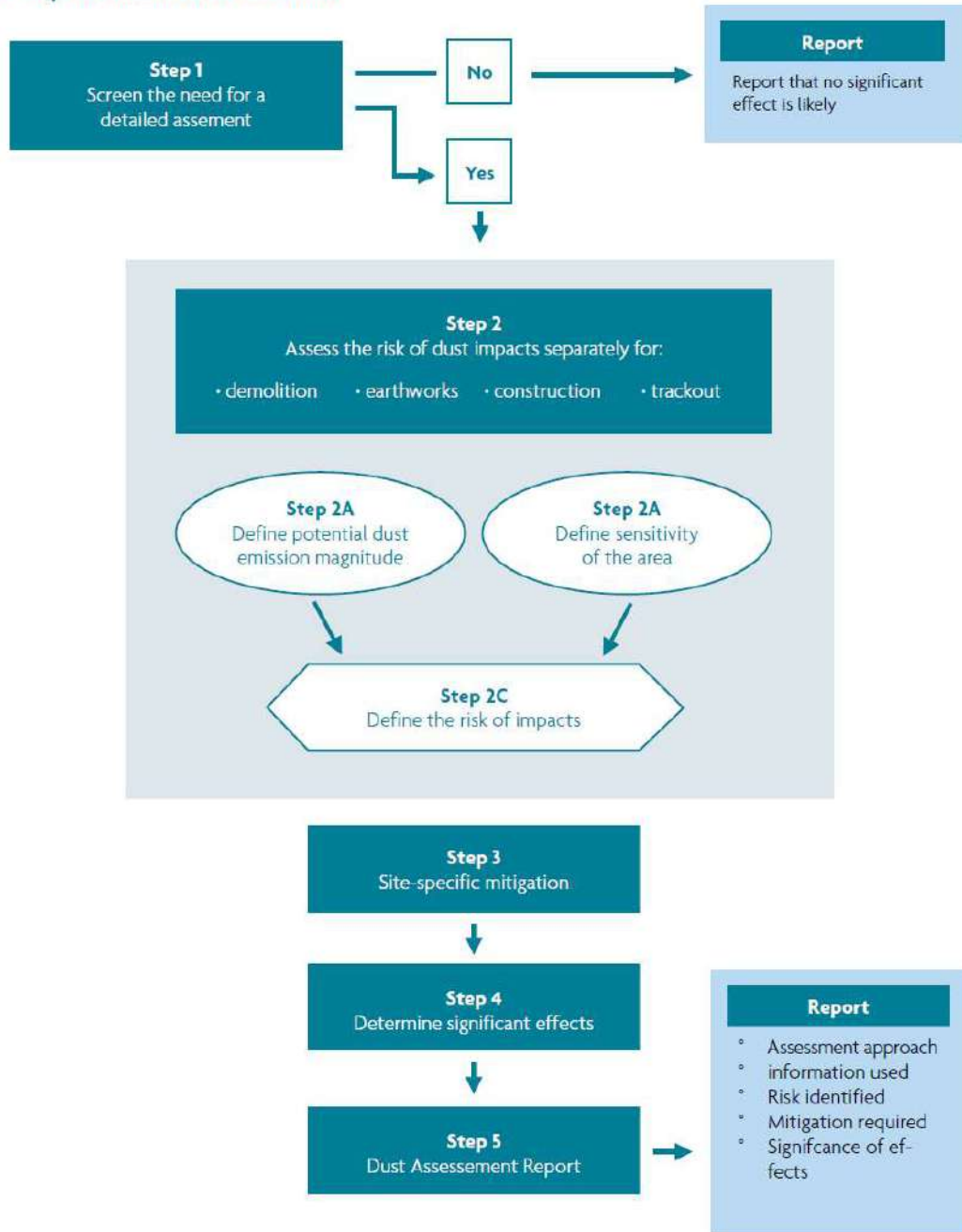
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APPENDICES

Appendix E



Figure 1: Steps to Perform a Dust Assessment



Demolition

Examples:

- **Large:** Total building volume >75,000m³, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >12m above ground level;
- **Medium:** Total building volume 12,000 m³ – 75,000 m³, potentially dusty construction material, demolition activities 6-12 m above ground level; and
- **Small:** Total building volume <12,000 m³, 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

Examples:

- **Large:** Total site area >110,00 m², 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;
- **Medium:** Total site area 18,000 m² – 110,000 m², moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3m – 6m in height; and
- **Small:** Total site area <18,000 m², soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3m in height.

Construction

Examples:

- **Large:** Total building volume >75,000 m³, on site concrete batching sandblasting;
- **Medium:** Total building volume 12,000 m³ – 75,000 m³, potentially dusty construction material (e.g. concrete), on site concrete batching; and
- **Small:** Total building volume <12,000 m³, construction material with low potential for dust release (e.g. metal cladding or timber)

Trackout

Examples:

- **Large:** >50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100m;
- **Medium:** 20-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road lengths 50m-100m;
- **Small:** <20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50m.

These numbers are for vehicles that leave the site after moving over unpaved ground, where they will accumulate mud and dirt that can be tracked out onto the public highway.

Sensitivity of the Area to Dust Soiling Effects on People and Property ^{ab}

Receptor Sensitivity	Number of Receptors	Distance from the Source (m) ^c			
		<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

^a The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout. See **STEP 2B, Box 6** and **Box 9**.

^b Estimate the total number of receptors within the stated distance. Only the highest level of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptors <20m of the source and 95 high sensitivity receptors between 20 and 50 m, then the total of number of receptors <50 m is 102. The sensitivity of the area in this case would be high.

^c For trackout, the distance should be measured from the side of the roads used by construction traffic. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

Sensitivity of the Area to Human Health Impacts ^{ab}

Receptor Sensitivity	Annual Mean PM ₁₀ concentration ^c	Number of Receptors	Distance from the Source (m) ^c			
			<20	<50	<100	<250
High	>32 µg/m ³ (>18 µg/m ³ in Scotland)	>100	High	High	High	Low
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m ³ (16-18 µg/m ³ in Scotland)	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m ³ (14-16 µg/m ³ in Scotland)	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m ³ (<14 µg/m ³ in Scotland)	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32 µg/m ³ (>18 µg/m ³ in Scotland)	>100	High	Medium	Low	Low
		10-100	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low
	28-32 µg/m ³ (16-18 µg/m ³ in Scotland)	>100	Low	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28 µg/m ³ (14-16 µg/m ³ in Scotland)	>100	Low	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m ³ (<14 µg/m ³ in Scotland)	>100	Low	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low

^a The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout. See **STEP 2B, Box 7** and **Box 9**.

^b Estimate the total within the stated distance (e.g. the total within 250m and not the number between 100 and 250 m), noting that only the highest level of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptor <20m of the source and 95 high sensitivity receptors between 20 and 50 m, then the total of number of receptors <50 m is 102. If annual mean PM₁₀ concentrations is 29 µg/m³, the sensitivity of the area would be high.

^c Most straightforwardly taken from the national background maps, but should also take account of local sources. The values are based on 32 µg/m³ being the annual mean concentration at which an exceedance of the 14-hour objective is likely in England, Wales and Northern Ireland. In Scotland there is an annual mean objective of 18µg/m³

^d In the case of high sensitivity receptors with high occupancy (such as schools or hospitals) approximate the number of people likely to be present. In the case of residential dwellings, just include the number of properties.

^e For trackout, the distance should be measured from the side of the roads used by construction traffic. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

Sensitivity of the Area to Ecological Impacts ^{ab}

Receptor Sensitivity	Distance from the Source (m) ^c	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

^a The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout and for each designated site. See **STEP 2B, Box 8** and **Box 9**.

^b Only the highest level of area sensitivity from the table needs to be considered.

^c For trackout, the distances should be measured from the side of the roads used by construction traffic. The impact declines with distance from the site.



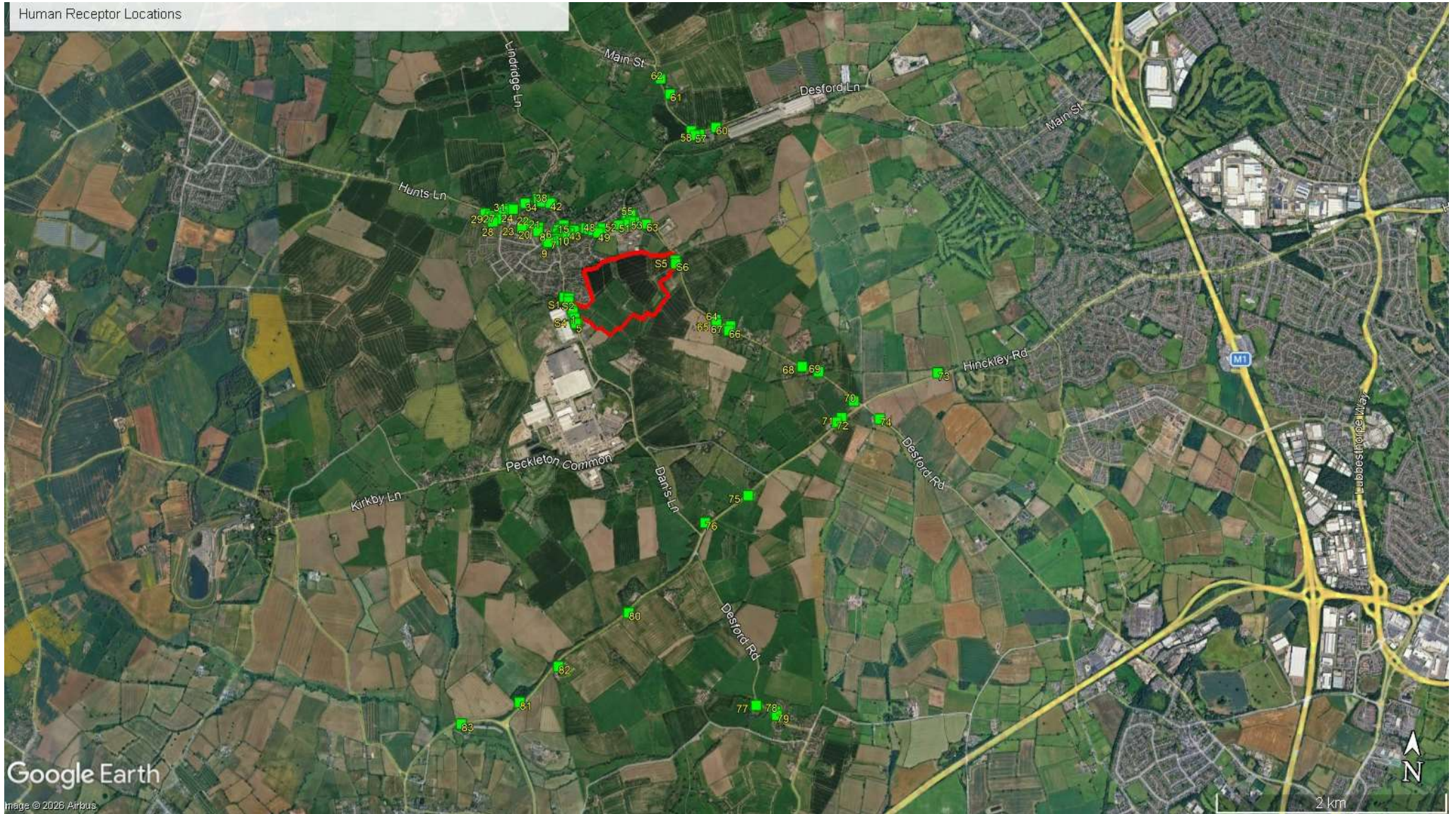
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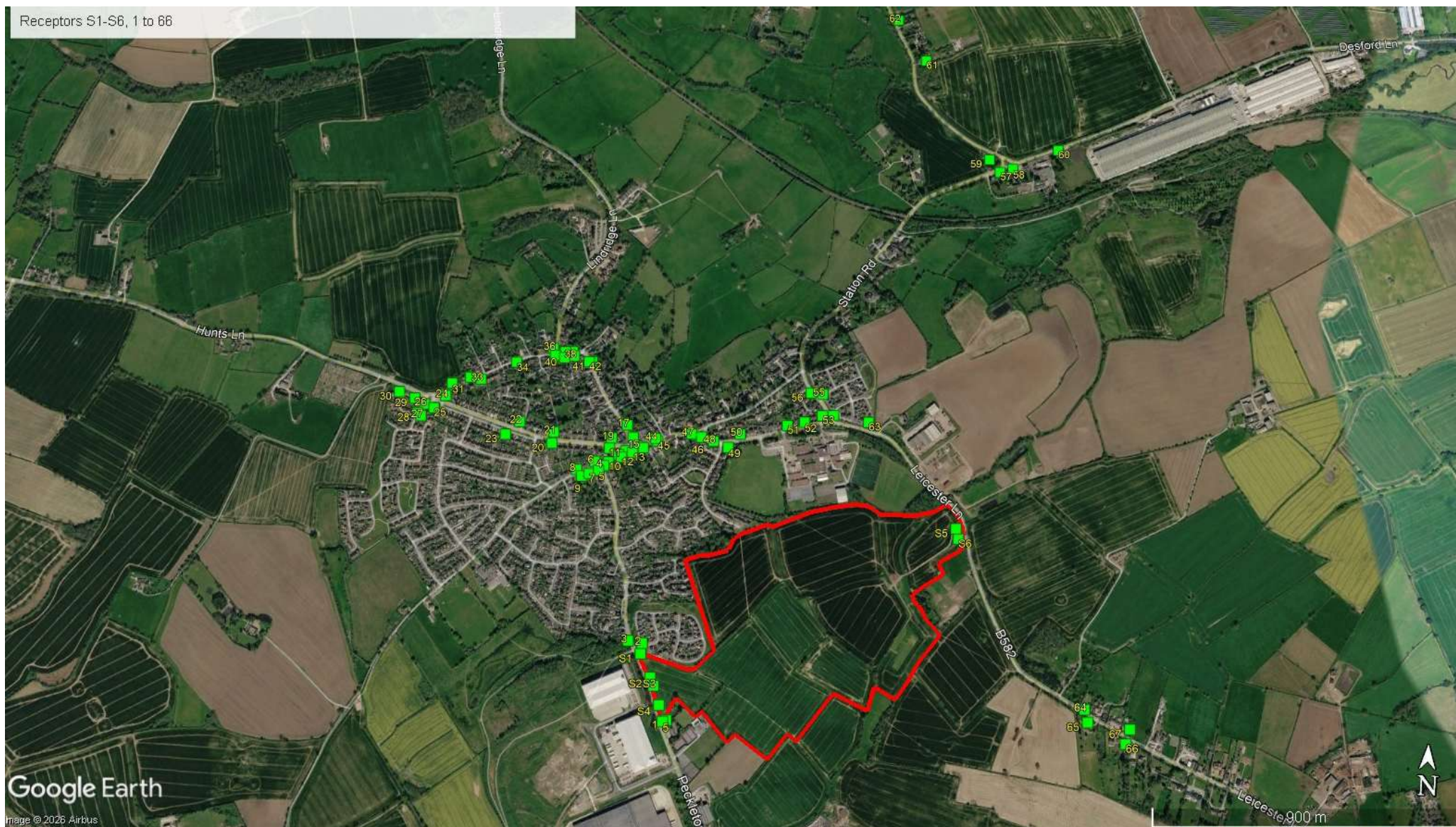
Appendix F



Human Receptor Locations



Receptors S1-S6, 1 to 66



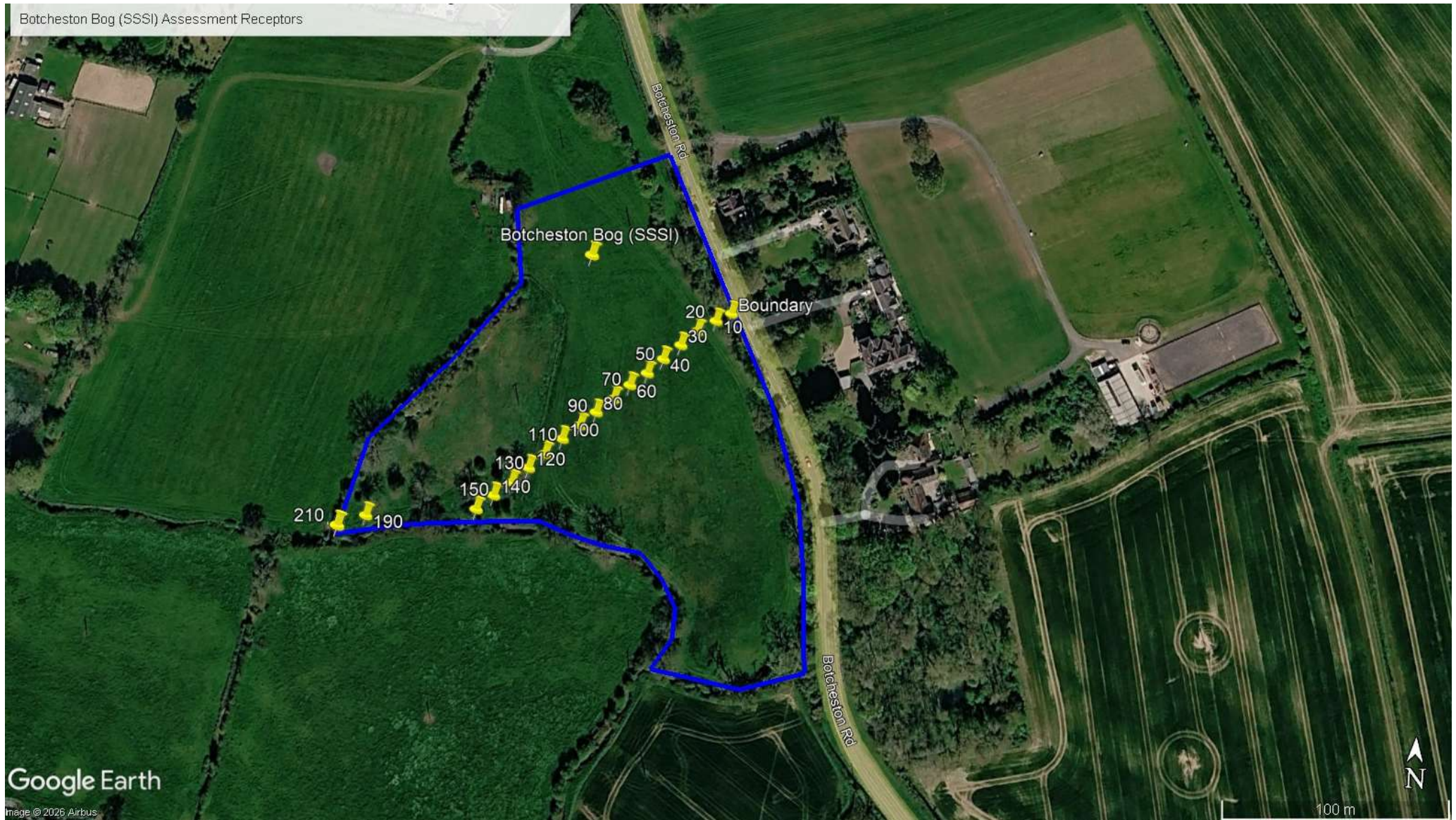
Receptors 67 to 83



Google Earth

Image © 2025 Airbus

Botcheston Bog (SSSI) Assessment Receptors



Google Earth

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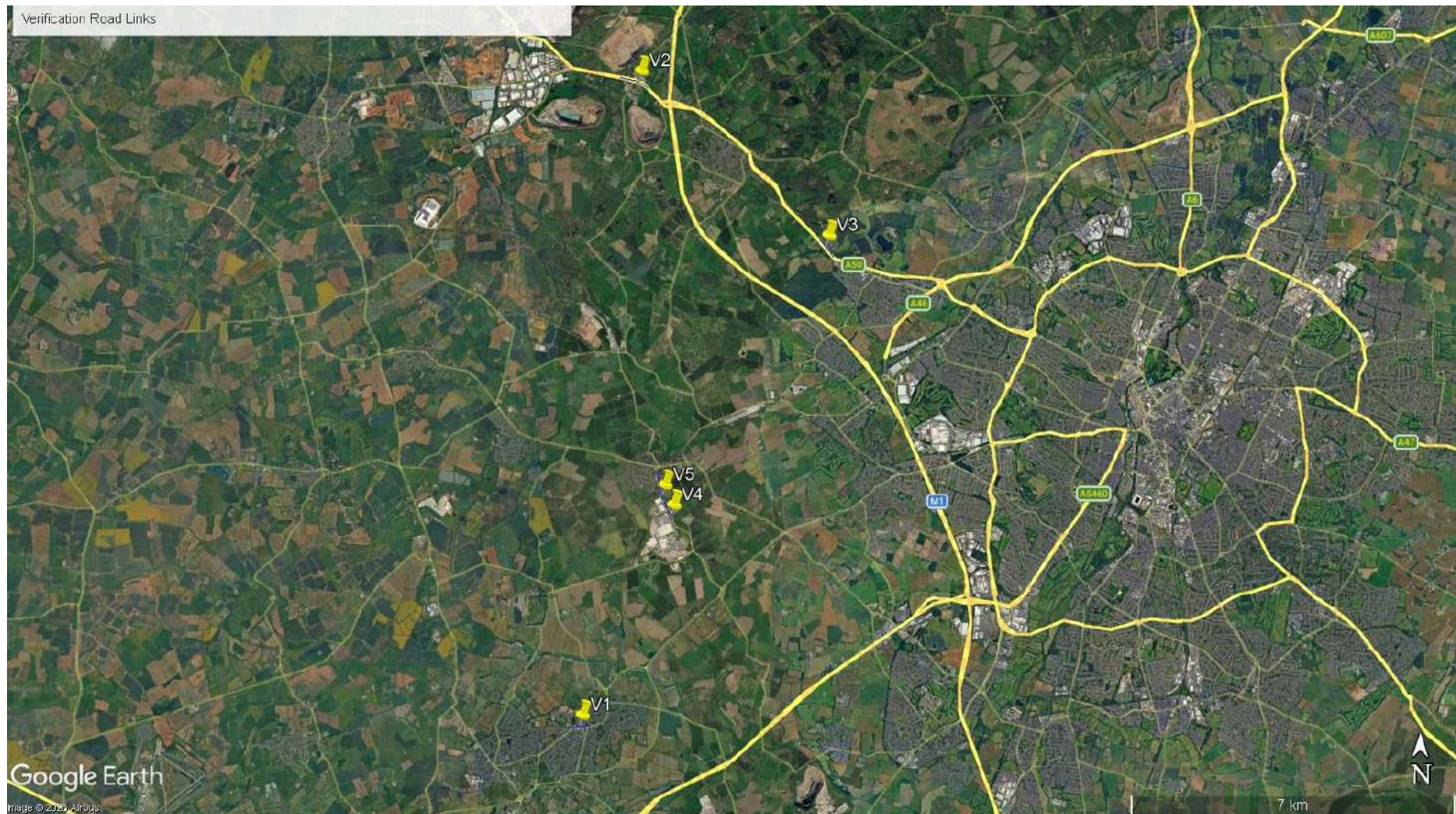
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Appendix G



2025 Verification

Link ID	Link Name	AADT	LGV	%HGV	HGV	Speed (Kph)	Link Width (m)	Canyon Height (m)	Source
V1	Hinckley Road, Earl Shilton	14428	13788	4.4%	640	25-35	16	8	DfT(77299)
V2	Little Shaw Lane	18311	17498	4.4%	812	15-60	18-25		DfT(6527)
V3	Leicester Road/Bradgate Hill	36907	31677	14.2%	5230	60	14		DfT(16506)
V4	Peckleton Lane (north of Peckleton Common)	36479	34091	6.5%	2388	45-85	8		Mode Transport
V5	Peckleton Lane (North of Western Site Access	5615	5317	5.3%	298	45	6-8		



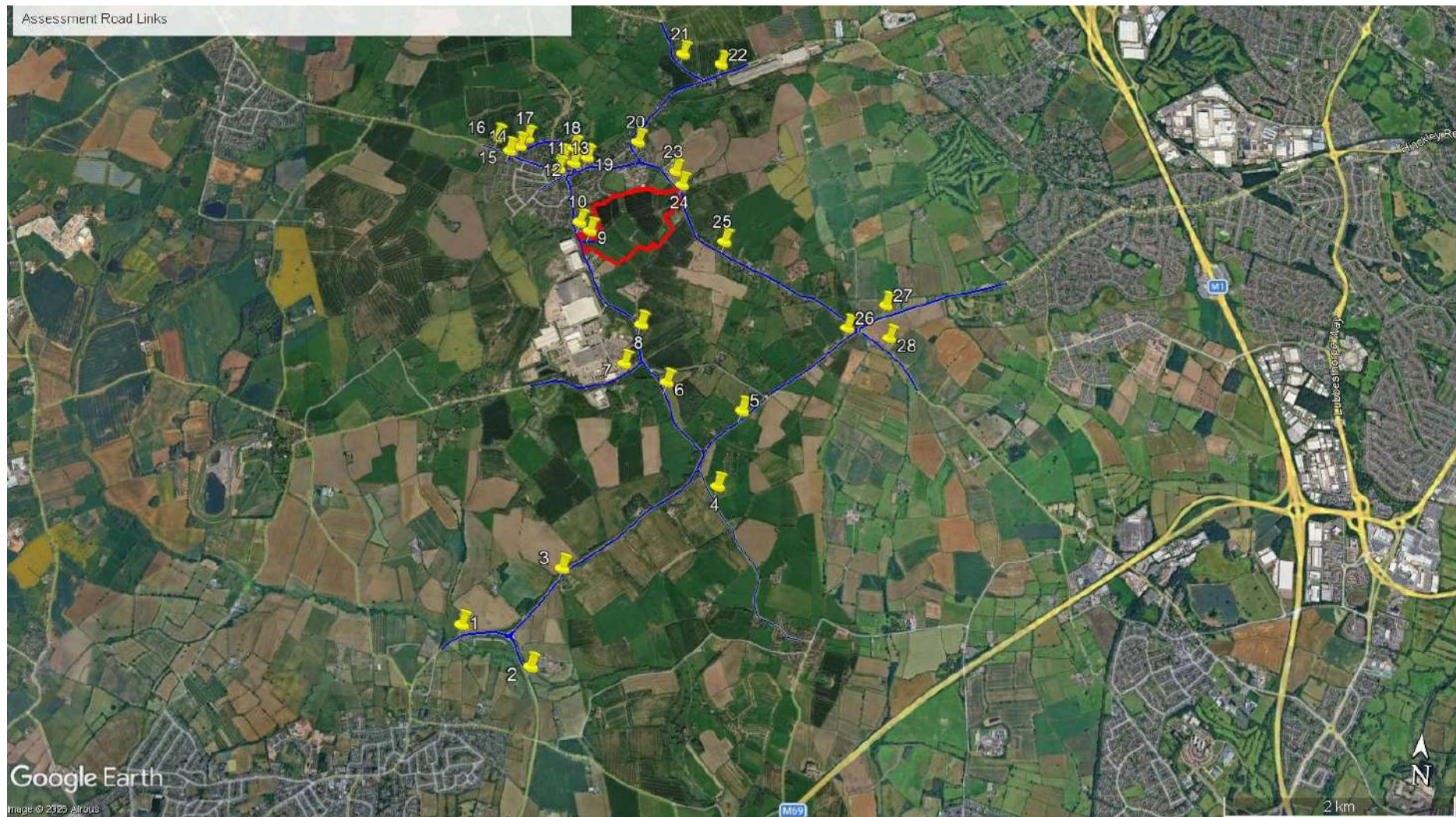
2036 Do Nothing

Link ID	Link Name	AADT	LGV	%HGV	HGV	Speed (Kph)	Link Width (m)	Canyon Height (m)
1	Leicester Road (west of A47)	5992	5807	3.1%	185	10-70	8-15	
2	A47 (south of Leicester Road)	9278	9065	2.3%	213	10-95	8-15	
3	A47 (north of Leicester Road)	13444	13097	2.6%	347	10-70	8-15	
4	Desford Road (south of A47)	3012	2984	0.9%	28	10-95	6-12	
5	A47 (east of Desford Road)	14743	14390	2.4%	353	20-70	10	
6	Dan's Lane (north of A47)	6319	6034	4.5%	285	10-95	8-16	
7	Peckleton Common (west of Dan's Lane)	2636	2541	3.6%	95	10-95	8-16	
8	Peckleton Lane (north of Peckleton Common)	6251	5920	5.3%	331	10-95	8	
9	Western Site Access (east of Peckleton Lane)	0	0	0%	0	10-45	8-10	
10	Peckleton Lane (north of western Site Access)	6263	6224	0.6%	39	10-45	8	
11	Kirkby Road (west of Peckleton Lane)	2631	2609	0.9%	22	10-45	6	
12	High Street (east of Peckleton Lane)	6621	6571	0.8%	50	10-45	8	8
13	B582 (west of Main Street)	10218	10039	1.8%	179	10-45	8	
14	B582 (east of Newbold Road)	11611	11410	1.7%	201	10-45	8-10	
15	Lockeymead Drive (south of B582)	1445	1411	2.3%	34	10-40	6-10	
16	B582 (west of Newbold Road)	10447	10273	1.7%	173	10-45	6-10	
17	Newbold Road (north of B582)	1041	1024	1.6%	17	10-45	8-10	
18	Main Street (north of B582)	2351	2334	0.7%	17	10-45	6-12	
19	B582 (east of Main Street)	15753	15580	1.1%	173	10-45	7-12	
20	Barns Way (north of B582)	7284	7127	2.2%	157	10-45	7-12	
21	Botcheston Road (north of Desford Lane)	8186	8063	1.5%	123	10-60	8-10	
22	Desford Lane (east of Botcheston Road)	13811	13615	1.4%	196	10-60	8	
23	B582 (north of eastern Site Access)	11264	10496	6.8%	769	10-50	8-12	
24	Eastern Site Access (west of B582)	0	0	0%	0	10-45	8	
25	B582 (north of A47)	11264	10496	6.8%	769	10-60	8-14	
26	A47 (west of B582)	13237	12739	3.8%	498	10-80	8-14	
27	A47 (east of B582)	13230	12771	3.5%	459	10-95	8-14	
28	B582 (south of A47)	11796	11488	2.6%	308	10-95	8-14	

2036 Do Something

Link ID	Link Name	AADT	LGV	%HGV	HGV	Speed (Kph)	Link Width (m)	Canyon Height (m)
1	Leicester Road (west of A47)	6083	5899	3.0%	185	10-70	8-15	
2	A47 (south of Leicester Road)	9855	9643	2.2%	213	10-95	8-15	
3	A47 (north of Leicester Road)	14113	13766	2.5%	347	10-70	8-15	
4	Desford Road (south of A47)	3108	3080	0.9%	28	10-95	6-12	
5	A47 (east of Desford Road)	15507	15155	2.3%	353	20-70	10	
6	Dan's Lane (north of A47)	7084	6799	4.0%	285	10-95	8-16	
7	Peckleton Common (west of Dan's Lane)	2996	2901	3.2%	95	10-95	8-16	
8	Peckleton Lane (north of Peckleton Common)	7376	7045	4.5%	331	10-95	8	
9	Western Site Access (east of Peckleton Lane)	2117	2117	0.0%	0	10-45	8-10	
10	Peckleton Lane (north of western Site Access)	7113	7074	0.6%	39	10-45	8	
11	Kirkby Road (west of Peckleton Lane)	2631	2609	0.9%	22	10-45	6	
12	High Street (east of Peckleton Lane)	7471	7421	0.7%	50	10-45	8	8
13	B582 (west of Main Street)	11068	10889	1.6%	179	10-45	8	
14	B582 (east of Newbold Road)	12461	12260	1.6%	201	10-45	8-10	
15	Lockeymead Drive (south of B582)	1445	1411	2.3%	34	10-40	6-10	
16	B582 (west of Newbold Road)	11297	11123	1.5%	173	10-45	6-10	
17	Newbold Road (north of B582)	1041	1024	1.6%	17	10-45	8-10	
18	Main Street (north of B582)	2351	2334	0.7%	17	10-45	6-12	
19	B582 (east of Main Street)	15753	15580	1.1%	173	10-45	7-12	
20	Barns Way (north of B582)	8328	8172	1.9%	157	10-45	7-12	
21	Botcheston Road (north of Desford Lane)	8413	8289	1.5%	123	10-60	8-10	
22	Desford Lane (east of Botcheston Road)	14628	14433	1.3%	196	10-60	8	
23	B582 (north of eastern Site Access)	12302	11533	6.3%	769	10-50	8-12	
24	Eastern Site Access (west of B582)	2463	2463	0.0%	0	10-45	8	
25	B582 (north of A47)	12526	11757	6.1%	769	10-60	8-14	
26	A47 (west of B582)	13237	12739	3.8%	498	10-80	8-14	
27	A47 (east of B582)	13674	13215	3.4%	459	10-95	8-14	
28	B582 (south of A47)	12605	12298	2.4%	308	10-95	8-14	

Assessment Road Links





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APPENDICES

Appendix H



Verification (LAQM.TG 22)

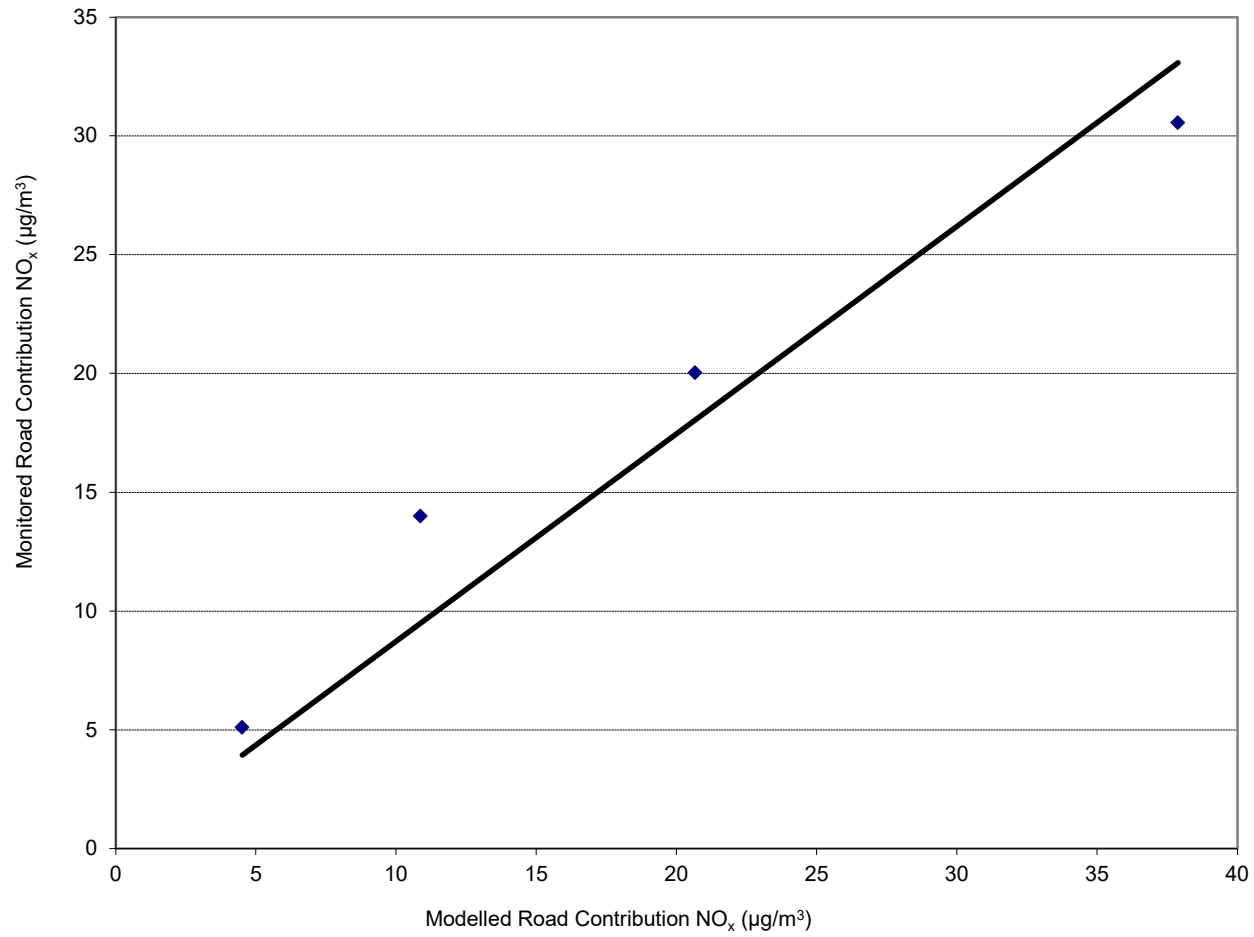
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Background NO _x	9.19	10.35	11.71	9.86

Site ID	Location		Modelled Road Contribution NO _x (ex-background)	Monitored Total NO ₂	Monitored Road Contribution Nox*	Monitored Total NO _x	Ratio of Monitored Road Contribution NO _x / Modelled Road Contribution NO _x
	X (m)	Y (m)					
5	448012	302544	4.50776	9.7	5.11	14.3	1.1
8	446320	297756	20.66	17.3	20.03	30.4	1.0
11	451376	308147	10.87	15.6	14	25.7	1.3
10, 12, 14	447113	311660	37.88	21.4	30.56	40.4	0.8

Verification Factor	1
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Adjustment Factor

$$y = 0.8733x$$



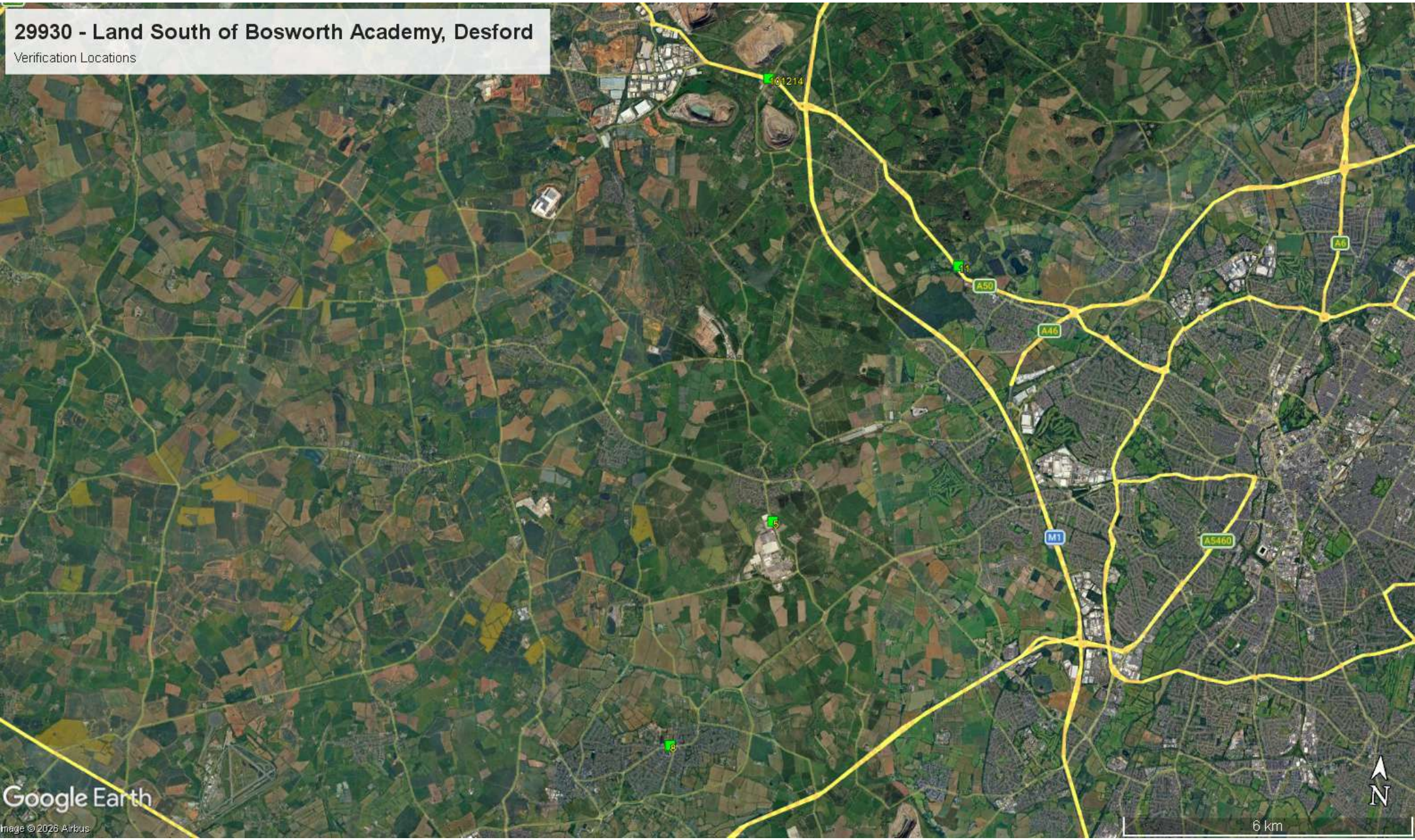
Root Mean Square Error (RMSE)

$$RMSE = \sqrt{\frac{1}{N} \sum_{i=1}^N (Obs_i - Pred_i)^2}$$

Name	Observations	Predictions	Observations – Predictions	Squared	Total	Average	RMSE	%
5	9.70	8.95	0.75	0.56	11.82	3.0	1.7	4%
8	17.33	16.91	0.42	0.18				
11	15.61	13.18	2.43	5.89				
10, 12, 14	21.42	23.7	-2.28	5.19				

29930 - Land South of Bosworth Academy, Desford

Verification Locations



6 km



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APPENDICES

Appendix I



Existing Human Receptors

NO ₂										
Receptor Name	X(m)	Y(m)	Z(m)	2036 DN	2036 DS	DS-DN	% Change	AQAL	AQAL	Impact Descriptor
1	448029	302551	1.5	5.93	5.96	0.03	0%	15%	15%	Negligible
2	447941	302767	1.5	6.24	6.26	0.02	0%	16%	16%	Negligible
3	447899	302771	1.5	6.28	6.30	0.02	0%	16%	16%	Negligible
4	447783	303286	1.5	6.46	6.55	0.09	0%	16%	16%	Negligible
5	447769	303270	1.5	5.99	6.02	0.03	0%	15%	15%	Negligible
6	447755	303297	1.5	5.99	6.01	0.02	0%	15%	15%	Negligible
7	447741	303259	1.5	5.83	5.84	0.01	0%	15%	15%	Negligible
8	447702	303269	1.5	5.86	5.87	0.01	0%	15%	15%	Negligible
9	447719	303250	1.5	5.81	5.81	0.00	0%	15%	15%	Negligible
10	447797	303298	1.5	7.36	7.54	0.18	0%	18%	19%	Negligible
11	447826	303322	1.5	6.28	6.33	0.05	0%	16%	16%	Negligible
12	447835	303315	1.5	7.01	7.16	0.15	0%	18%	18%	Negligible
13	447868	303331	1.5	6.34	6.37	0.03	0%	16%	16%	Negligible
14	447847	303335	1.5	6.56	6.63	0.07	0%	16%	17%	Negligible
15	447881	303352	1.5	7.24	7.26	0.02	0%	18%	18%	Negligible
16	447866	303378	1.5	6.25	6.27	0.02	0%	16%	16%	Negligible
17	447845	303415	1.5	6.02	6.03	0.01	0%	15%	15%	Negligible
18	447796	303340	1.5	6.08	6.11	0.03	0%	15%	15%	Negligible
19	447801	303372	1.5	6.08	6.11	0.03	0%	15%	15%	Negligible
20	447620	303344	1.5	5.91	5.93	0.02	0%	15%	15%	Negligible
21	447623	303379	1.5	5.96	5.98	0.02	0%	15%	15%	Negligible
22	447516	303404	1.5	5.96	5.98	0.02	0%	15%	15%	Negligible
23	447476	303362	1.5	5.81	5.82	0.01	0%	15%	15%	Negligible
24	447282	303469	1.5	6.19	6.22	0.03	0%	15%	16%	Negligible
25	447250	303429	1.5	5.88	5.89	0.01	0%	15%	15%	Negligible
26	447220	303439	1.5	6.00	6.01	0.01	0%	15%	15%	Negligible
27	447213	303402	1.5	5.81	5.81	0.00	0%	15%	15%	Negligible
28	447201	303411	1.5	5.85	5.85	0.00	0%	15%	15%	Negligible
29	447188	303455	1.5	5.88	5.89	0.01	0%	15%	15%	Negligible
30	447139	303472	1.5	5.82	5.83	0.01	0%	15%	15%	Negligible
31	447298	303509	1.5	5.87	5.88	0.01	0%	15%	15%	Negligible
32	447352	303531	1.5	5.84	5.85	0.01	0%	15%	15%	Negligible
33	447385	303527	1.5	5.77	5.78	0.01	0%	14%	14%	Negligible
34	447489	303587	1.5	5.76	5.76	0.00	0%	14%	14%	Negligible
35	447606	303616	1.5	5.77	5.78	0.01	0%	14%	14%	Negligible
36	447598	303638	1.5	5.76	5.76	0.00	0%	14%	14%	Negligible
37	447636	303630	1.5	5.88	5.88	0.00	0%	15%	15%	Negligible
38	447665	303618	1.5	5.77	5.78	0.01	0%	14%	14%	Negligible
39	447659	303632	1.5	5.89	5.89	0.00	0%	15%	15%	Negligible
40	447635	303611	1.5	5.77	5.77	0.00	0%	14%	14%	Negligible
41	447722	303604	1.5	5.86	5.86	0.00	0%	15%	15%	Negligible

NO ₂										
Receptor Name	X(m)	Y(m)	Z(m)	2036 DN	2036 DS	DS-DN	% Change	AQAL	AQAL	Impact Descriptor
42	447712	303603	1.5	5.85	5.85	0.00	0%	15%	15%	Negligible
43	447899	303348	1.5	6.64	6.65	0.01	0%	17%	17%	Negligible
44	447934	303379	1.5	6.78	6.79	0.01	0%	17%	17%	Negligible
45	447941	303371	1.5	6.52	6.53	0.01	0%	16%	16%	Negligible
46	448074	303392	1.5	6.29	6.29	0.00	0%	16%	16%	Negligible
47	448043	303400	1.5	6.58	6.58	0.00	0%	16%	16%	Negligible
48	448111	303382	1.5	6.41	6.41	0.00	0%	16%	16%	Negligible
49	448157	303366	1.5	5.97	5.97	0.00	0%	15%	15%	Negligible
50	448191	303409	1.5	6.22	6.22	0.00	0%	16%	16%	Negligible
51	448333	303445	1.5	6.31	6.32	0.01	0%	16%	16%	Negligible
52	448385	303459	1.5	6.43	6.44	0.01	0%	16%	16%	Negligible
53	448438	303482	1.5	6.53	6.56	0.03	0%	16%	16%	Negligible
54	448472	303485	1.5	6.73	6.78	0.05	0%	17%	17%	Negligible
55	448436	303549	1.5	6.05	6.08	0.03	0%	15%	15%	Negligible
56	448400	303550	1.5	6.06	6.10	0.04	0%	15%	15%	Negligible
57	448958	304297	1.5	5.96	6.00	0.04	0%	15%	15%	Negligible
58	448998	304311	1.5	6.04	6.07	0.03	0%	15%	15%	Negligible
59	448923	304337	1.5	5.83	5.85	0.02	0%	15%	15%	Negligible
60	449140	304382	1.5	6.13	6.15	0.02	0%	15%	15%	Negligible
61	448710	304657	1.5	5.70	5.71	0.01	0%	14%	14%	Negligible
62	448615	304791	1.5	5.92	5.93	0.01	0%	15%	15%	Negligible
63	448580	303471	1.5	6.07	6.10	0.03	0%	15%	15%	Negligible
64	449253	302661	1.5	6.84	6.95	0.11	0%	17%	17%	Negligible
65	449263	302625	1.5	5.86	5.88	0.02	0%	15%	15%	Negligible
66	449375	302571	1.5	5.87	5.89	0.02	0%	15%	15%	Negligible
67	449387	302613	1.5	6.02	6.05	0.03	0%	15%	15%	Negligible
68	450043	302296	1.5	6.46	6.52	0.06	0%	16%	16%	Negligible
69	450190	302259	1.5	6.88	6.98	0.10	0%	17%	17%	Negligible
70	450516	302022	1.5	6.14	6.16	0.02	0%	15%	15%	Negligible
71	450418	301869	1.5	6.05	6.06	0.01	0%	15%	15%	Negligible
72	450374	301827	1.5	6.04	6.04	0.00	0%	15%	15%	Negligible
73	451243	302319	1.5	6.32	6.33	0.01	0%	16%	16%	Negligible
74	450754	301880	1.5	6.14	6.17	0.03	0%	15%	15%	Negligible
75	449640	301134	1.5	6.21	6.23	0.02	0%	16%	16%	Negligible
76	449280	300874	1.5	5.84	5.86	0.02	0%	15%	15%	Negligible
77	449827	299332	1.5	5.66	5.66	0.00	0%	14%	14%	Negligible
78	449996	299294	1.5	5.70	5.70	0.00	0%	14%	14%	Negligible
79	450012	299259	1.5	5.79	5.79	0.00	0%	14%	14%	Negligible
80	448665	300052	1.5	5.82	5.84	0.02	0%	15%	15%	Negligible
81	447774	299222	1.5	5.79	5.80	0.01	0%	14%	15%	Negligible
82	448087	299551	1.5	5.76	5.77	0.01	0%	14%	14%	Negligible
83	447283	299005	1.5	5.66	5.66	0.00	0%	14%	14%	Negligible

Future Human Receptors

NO ₂					
Receptor Name	X(m)	Y(m)	Z(m)	2036 DN	2036 DS
S1	447938.9	302735.7	1.5	6.37	6.41
S2	447973	302669.5	1.5	6.41	6.48
S3	447984	302646.2	1.5	6.40	6.48
S4	448004.4	302592	1.5	6.03	6.08
S5	448857.7	303165	1.5	5.87	5.96
S6	448865.9	303134.7	1.5	5.87	5.90

Existing Human Receptors

PM ₁₀										
Receptor Name	X(m)	Y(m)	Z(m)	2036 DN	2036 DS	DS-DN	% Change	AQAL	AQAL	Impact Descriptor
1	448029	302551	1.5	13.62	13.67	0.05	0%	34%	34%	Negligible
2	447941	302767	1.5	13.17	13.20	0.03	0%	33%	33%	Negligible
3	447899	302771	1.5	13.23	13.27	0.04	0%	33%	33%	Negligible
4	447783	303286	1.5	12.82	12.92	0.11	0%	32%	32%	Negligible
5	447769	303270	1.5	12.30	12.34	0.04	0%	31%	31%	Negligible
6	447755	303297	1.5	12.30	12.32	0.02	0%	31%	31%	Negligible
7	447741	303259	1.5	12.13	12.14	0.01	0%	30%	30%	Negligible
8	447702	303269	1.5	12.20	12.21	0.01	0%	30%	31%	Negligible
9	447719	303250	1.5	12.11	12.12	0.01	0%	30%	30%	Negligible
10	447797	303298	1.5	13.77	13.99	0.22	1%	34%	35%	Negligible
11	447826	303322	1.5	12.76	12.84	0.09	0%	32%	32%	Negligible
12	447835	303315	1.5	13.98	14.22	0.24	1%	35%	36%	Negligible
13	447868	303331	1.5	12.67	12.70	0.04	0%	32%	32%	Negligible
14	447847	303335	1.5	12.91	13.00	0.09	0%	32%	32%	Negligible
15	447881	303352	1.5	13.63	13.66	0.03	0%	34%	34%	Negligible
16	447866	303378	1.5	12.58	12.60	0.03	0%	31%	32%	Negligible
17	447845	303415	1.5	12.40	12.42	0.02	0%	31%	31%	Negligible
18	447796	303340	1.5	12.48	12.52	0.05	0%	31%	31%	Negligible
19	447801	303372	1.5	12.50	12.54	0.04	0%	31%	31%	Negligible
20	447620	303344	1.5	12.28	12.31	0.03	0%	31%	31%	Negligible
21	447623	303379	1.5	12.37	12.40	0.03	0%	31%	31%	Negligible
22	447516	303404	1.5	12.36	12.39	0.03	0%	31%	31%	Negligible
23	447476	303362	1.5	12.13	12.15	0.02	0%	30%	30%	Negligible
24	447282	303469	1.5	12.52	12.56	0.04	0%	31%	31%	Negligible
25	447250	303429	1.5	12.15	12.16	0.01	0%	30%	30%	Negligible
26	447220	303439	1.5	12.25	12.27	0.02	0%	31%	31%	Negligible
27	447213	303402	1.5	12.09	12.10	0.01	0%	30%	30%	Negligible
28	447201	303411	1.5	12.14	12.15	0.01	0%	30%	30%	Negligible
29	447188	303455	1.5	12.16	12.17	0.02	0%	30%	30%	Negligible
30	447139	303472	1.5	12.12	12.14	0.02	0%	30%	30%	Negligible
31	447298	303509	1.5	12.16	12.18	0.01	0%	30%	30%	Negligible
32	447352	303531	1.5	12.16	12.17	0.01	0%	30%	30%	Negligible
33	447385	303527	1.5	12.06	12.07	0.01	0%	30%	30%	Negligible
34	447489	303587	1.5	12.04	12.04	0.01	0%	30%	30%	Negligible
35	447606	303616	1.5	12.05	12.05	0.00	0%	30%	30%	Negligible
36	447598	303638	1.5	12.03	12.04	0.00	0%	30%	30%	Negligible
37	447636	303630	1.5	12.20	12.20	0.00	0%	30%	30%	Negligible
38	447665	303618	1.5	12.06	12.07	0.00	0%	30%	30%	Negligible
39	447659	303632	1.5	12.25	12.26	0.00	0%	31%	31%	Negligible
40	447635	303611	1.5	12.05	12.05	0.00	0%	30%	30%	Negligible
41	447722	303604	1.5	12.21	12.21	0.00	0%	31%	31%	Negligible

PM ₁₀										
Receptor Name	X(m)	Y(m)	Z(m)	2036 DN	2036 DS	DS-DN	% Change	AQAL	AQAL	Impact Descriptor
42	447712	303603	1.5	12.19	12.20	0.00	0%	30%	30%	Negligible
43	447899	303348	1.5	13.22	13.23	0.01	0%	33%	33%	Negligible
44	447934	303379	1.5	13.67	13.68	0.01	0%	34%	34%	Negligible
45	447941	303371	1.5	13.25	13.26	0.01	0%	33%	33%	Negligible
46	448074	303392	1.5	12.76	12.77	0.01	0%	32%	32%	Negligible
47	448043	303400	1.5	13.19	13.20	0.01	0%	33%	33%	Negligible
48	448111	303382	1.5	12.74	12.74	0.01	0%	32%	32%	Negligible
49	448157	303366	1.5	12.27	12.27	0.00	0%	31%	31%	Negligible
50	448191	303409	1.5	12.72	12.72	0.01	0%	32%	32%	Negligible
51	448333	303445	1.5	12.92	12.93	0.01	0%	32%	32%	Negligible
52	448385	303459	1.5	13.09	13.10	0.01	0%	33%	33%	Negligible
53	448438	303482	1.5	12.84	12.87	0.03	0%	32%	32%	Negligible
54	448472	303485	1.5	12.82	12.88	0.06	0%	32%	32%	Negligible
55	448436	303549	1.5	12.44	12.49	0.05	0%	31%	31%	Negligible
56	448400	303550	1.5	12.49	12.54	0.06	0%	31%	31%	Negligible
57	448958	304297	1.5	12.27	12.31	0.05	0%	31%	31%	Negligible
58	448998	304311	1.5	12.29	12.33	0.03	0%	31%	31%	Negligible
59	448923	304337	1.5	12.14	12.17	0.03	0%	30%	30%	Negligible
60	449140	304382	1.5	13.57	13.61	0.04	0%	34%	34%	Negligible
61	448710	304657	1.5	11.98	11.98	0.01	0%	30%	30%	Negligible
62	448615	304791	1.5	12.30	12.31	0.01	0%	31%	31%	Negligible
63	448580	303471	1.5	12.45	12.49	0.04	0%	31%	31%	Negligible
64	449253	302661	1.5	14.58	14.75	0.16	0%	36%	37%	Negligible
65	449263	302625	1.5	12.99	13.02	0.02	0%	32%	33%	Negligible
66	449375	302571	1.5	13.01	13.04	0.02	0%	33%	33%	Negligible
67	449387	302613	1.5	13.26	13.30	0.05	0%	33%	33%	Negligible
68	450043	302296	1.5	14.51	14.60	0.09	0%	36%	36%	Negligible
69	450190	302259	1.5	15.19	15.34	0.15	0%	38%	38%	Negligible
70	450516	302022	1.5	13.90	13.92	0.03	0%	35%	35%	Negligible
71	450418	301869	1.5	13.21	13.21	0.00	0%	33%	33%	Negligible
72	450374	301827	1.5	13.19	13.20	0.00	0%	33%	33%	Negligible
73	451243	302319	1.5	13.20	13.21	0.01	0%	33%	33%	Negligible
74	450754	301880	1.5	13.18	13.20	0.02	0%	33%	33%	Negligible
75	449640	301134	1.5	13.26	13.30	0.04	0%	33%	33%	Negligible
76	449280	300874	1.5	13.01	13.02	0.02	0%	33%	33%	Negligible
77	449827	299332	1.5	12.56	12.57	0.00	0%	31%	31%	Negligible
78	449996	299294	1.5	12.65	12.65	0.00	0%	32%	32%	Negligible
79	450012	299259	1.5	12.23	12.23	0.00	0%	31%	31%	Negligible
80	448665	300052	1.5	12.71	12.72	0.02	0%	32%	32%	Negligible
81	447774	299222	1.5	12.71	12.73	0.01	0%	32%	32%	Negligible
82	448087	299551	1.5	13.12	13.13	0.01	0%	33%	33%	Negligible
83	447283	299005	1.5	12.54	12.55	0.00	0%	31%	31%	Negligible

Future Human Receptors

PM ₁₀					
Receptor Name	X(m)	Y(m)	Z(m)	2036 DN	2036 DS
S1	447938.9	302735.7	1.5	13.38	13.44
S2	447973	302669.5	1.5	13.44	13.55
S3	447984	302646.2	1.5	13.41	13.53
S4	448004.4	302592	1.5	13.79	13.86
S5	448857.7	303165	1.5	12.20	12.32
S6	448865.9	303134.7	1.5	12.21	12.25

Existing Human Receptors

PM _{2.5}										
Receptor Name	X(m)	Y(m)	Z(m)	2036 DN	2036 DS	DS-DN	% Change	AQAL	AQAL	Impact Descriptor
1	448029	302551	1.5	6.91	6.94	0.03	0%	69%	69%	Negligible
2	447941	302767	1.5	6.96	6.98	0.02	0%	70%	70%	Negligible
3	447899	302771	1.5	7.00	7.02	0.02	0%	70%	70%	Negligible
4	447783	303286	1.5	7.51	7.57	0.07	1%	75%	76%	Negligible
5	447769	303270	1.5	7.18	7.20	0.03	0%	72%	72%	Negligible
6	447755	303297	1.5	7.17	7.19	0.02	0%	72%	72%	Negligible
7	447741	303259	1.5	7.06	7.07	0.01	0%	71%	71%	Negligible
8	447702	303269	1.5	7.11	7.12	0.01	0%	71%	71%	Negligible
9	447719	303250	1.5	7.05	7.06	0.01	0%	70%	71%	Negligible
10	447797	303298	1.5	8.11	8.26	0.14	1%	81%	83%	Negligible
11	447826	303322	1.5	7.46	7.52	0.06	1%	75%	75%	Negligible
12	447835	303315	1.5	8.24	8.40	0.16	2%	82%	84%	Negligible
13	447868	303331	1.5	7.41	7.43	0.02	0%	74%	74%	Negligible
14	447847	303335	1.5	7.57	7.62	0.06	1%	76%	76%	Negligible
15	447881	303352	1.5	8.02	8.04	0.02	0%	80%	80%	Negligible
16	447866	303378	1.5	7.35	7.37	0.02	0%	74%	74%	Negligible
17	447845	303415	1.5	7.24	7.25	0.01	0%	72%	72%	Negligible
18	447796	303340	1.5	7.29	7.32	0.03	0%	73%	73%	Negligible
19	447801	303372	1.5	7.30	7.33	0.03	0%	73%	73%	Negligible
20	447620	303344	1.5	7.16	7.18	0.02	0%	72%	72%	Negligible
21	447623	303379	1.5	7.22	7.24	0.02	0%	72%	72%	Negligible
22	447516	303404	1.5	7.21	7.23	0.02	0%	72%	72%	Negligible
23	447476	303362	1.5	7.07	7.08	0.01	0%	71%	71%	Negligible
24	447282	303469	1.5	7.31	7.34	0.03	0%	73%	73%	Negligible
25	447250	303429	1.5	7.08	7.09	0.01	0%	71%	71%	Negligible
26	447220	303439	1.5	7.14	7.15	0.01	0%	71%	72%	Negligible
27	447213	303402	1.5	7.04	7.04	0.00	0%	70%	70%	Negligible
28	447201	303411	1.5	7.07	7.08	0.00	0%	71%	71%	Negligible
29	447188	303455	1.5	7.08	7.09	0.01	0%	71%	71%	Negligible
30	447139	303472	1.5	7.06	7.07	0.01	0%	71%	71%	Negligible
31	447298	303509	1.5	7.09	7.10	0.01	0%	71%	71%	Negligible
32	447352	303531	1.5	7.08	7.09	0.01	0%	71%	71%	Negligible
33	447385	303527	1.5	7.02	7.03	0.01	0%	70%	70%	Negligible
34	447489	303587	1.5	7.01	7.01	0.00	0%	70%	70%	Negligible
35	447606	303616	1.5	7.01	7.02	0.00	0%	70%	70%	Negligible
36	447598	303638	1.5	7.00	7.01	0.00	0%	70%	70%	Negligible
37	447636	303630	1.5	7.11	7.11	0.00	0%	71%	71%	Negligible
38	447665	303618	1.5	7.02	7.03	0.00	0%	70%	70%	Negligible
39	447659	303632	1.5	7.14	7.15	0.00	0%	71%	71%	Negligible
40	447635	303611	1.5	7.01	7.02	0.00	0%	70%	70%	Negligible
41	447722	303604	1.5	7.12	7.12	0.00	0%	71%	71%	Negligible

PM _{2.5}										
Receptor Name	X(m)	Y(m)	Z(m)	2036 DN	2036 DS	DS-DN	% Change	AQAL	AQAL	Impact Descriptor
42	447712	303603	1.5	7.11	7.11	0.00	0%	71%	71%	Negligible
43	447899	303348	1.5	7.76	7.77	0.01	0%	78%	78%	Negligible
44	447934	303379	1.5	8.05	8.05	0.01	0%	80%	81%	Negligible
45	447941	303371	1.5	7.78	7.78	0.01	0%	78%	78%	Negligible
46	448074	303392	1.5	7.23	7.24	0.00	0%	72%	72%	Negligible
47	448043	303400	1.5	7.51	7.51	0.00	0%	75%	75%	Negligible
48	448111	303382	1.5	7.22	7.22	0.00	0%	72%	72%	Negligible
49	448157	303366	1.5	6.92	6.92	0.00	0%	69%	69%	Negligible
50	448191	303409	1.5	7.21	7.21	0.00	0%	72%	72%	Negligible
51	448333	303445	1.5	7.33	7.34	0.00	0%	73%	73%	Negligible
52	448385	303459	1.5	7.44	7.45	0.01	0%	74%	74%	Negligible
53	448438	303482	1.5	7.28	7.30	0.02	0%	73%	73%	Negligible
54	448472	303485	1.5	7.27	7.31	0.04	0%	73%	73%	Negligible
55	448436	303549	1.5	7.03	7.06	0.03	0%	70%	71%	Negligible
56	448400	303550	1.5	7.06	7.09	0.04	0%	71%	71%	Negligible
57	448958	304297	1.5	6.89	6.92	0.03	0%	69%	69%	Negligible
58	448998	304311	1.5	6.91	6.93	0.02	0%	69%	69%	Negligible
59	448923	304337	1.5	6.81	6.82	0.02	0%	68%	68%	Negligible
60	449140	304382	1.5	7.12	7.15	0.03	0%	71%	72%	Negligible
61	448710	304657	1.5	6.70	6.71	0.00	0%	67%	67%	Negligible
62	448615	304791	1.5	6.91	6.92	0.01	0%	69%	69%	Negligible
63	448580	303471	1.5	7.03	7.06	0.02	0%	70%	71%	Negligible
64	449253	302661	1.5	7.80	7.90	0.10	1%	78%	79%	Negligible
65	449263	302625	1.5	6.79	6.81	0.01	0%	68%	68%	Negligible
66	449375	302571	1.5	6.80	6.82	0.01	0%	68%	68%	Negligible
67	449387	302613	1.5	6.96	6.99	0.03	0%	70%	70%	Negligible
68	450043	302296	1.5	7.42	7.47	0.06	1%	74%	75%	Negligible
69	450190	302259	1.5	7.86	7.95	0.09	1%	79%	79%	Negligible
70	450516	302022	1.5	7.03	7.05	0.02	0%	70%	70%	Negligible
71	450418	301869	1.5	6.89	6.90	0.00	0%	69%	69%	Negligible
72	450374	301827	1.5	6.88	6.89	0.00	0%	69%	69%	Negligible
73	451243	302319	1.5	6.98	6.99	0.01	0%	70%	70%	Negligible
74	450754	301880	1.5	6.87	6.89	0.02	0%	69%	69%	Negligible
75	449640	301134	1.5	7.07	7.09	0.02	0%	71%	71%	Negligible
76	449280	300874	1.5	6.79	6.80	0.01	0%	68%	68%	Negligible
77	449827	299332	1.5	6.69	6.69	0.00	0%	67%	67%	Negligible
78	449996	299294	1.5	6.74	6.74	0.00	0%	67%	67%	Negligible
79	450012	299259	1.5	6.79	6.79	0.00	0%	68%	68%	Negligible
80	448665	300052	1.5	6.75	6.76	0.01	0%	68%	68%	Negligible
81	447774	299222	1.5	6.85	6.86	0.01	0%	69%	69%	Negligible
82	448087	299551	1.5	6.86	6.87	0.01	0%	69%	69%	Negligible
83	447283	299005	1.5	6.74	6.74	0.00	0%	67%	67%	Negligible

Future Human Receptors

PM _{2.5}					
Receptor Name	X(m)	Y(m)	Z(m)	2036 DN	2036 DS
S1	447938.9	302735.7	1.5	7.09	7.13
S2	447973	302669.5	1.5	7.13	7.20
S3	447984	302646.2	1.5	7.11	7.19
S4	448004.4	302592	1.5	7.02	7.06
S5	448857.7	303165	1.5	6.88	6.95
S6	448865.9	303134.7	1.5	6.88	6.90

Designated Sites Results

Habitat 1	Alopecurus Pratensis - Sanguisorba Officinalis Grassland
Nitrogen Deposition Critical Load	10-20
NO _x Critical Level	30
NH ₃ Critical Level	3
Apis Average 2023 to 2036 (Nitrogen Deposition)	8.1(2023) 6.0(2036)
2036 Conservation Average (NO _x)	6.93
2023 Conservation Av. (NH ₃)	2.1

Habitat 2	Cynosurus Cristatus - Centaurea Nigra Grassland
Nitrogen Deposition Critical Load	10-20
NO _x Critical Level	30
NH ₃ Critical Level	3
Apis Average 2023 to 2036 (Nitrogen Deposition)	8.1(2023) 6.0(2036)
2036 Conservation Average (NO _x)	6.93
2023 Conservation Av. (NH ₃)	2.1

Habitat 3	Cyluncus Subnodulosus - Cirsium Palustre Fen Meadow
Nitrogen Deposition Critical Load	15-25
NO _x Critical Level	30
NH ₃ Critical Level	1-3
Apis Average 2023 to 2036 (Nitrogen Deposition)	8.1(2023) 6.0(2036)
2036 Conservation Average (NO _x)	6.93
2023 Conservation Av. (NH ₃)	2.1

2036 Do Nothing	NO _x	NO ₂	NH ₃	Dry deposition rate	Road increment dry deposition	Total deposition
	µg/m ³			kg N/ha/yr		
Boundary	7.37	5.83	2.37	0.58	-0.11	5.88
10m	7.22	5.75	2.27	0.58	-0.12	5.88
20m	7.14	5.71	2.21	0.57	-0.12	5.87
30m	7.10	5.69	2.19	0.57	-0.12	5.87
40m	7.08	5.68	2.17	0.57	-0.13	5.87
50m	7.06	5.67	2.16	0.57	-0.13	5.87
60m	7.05	5.67	2.15	0.57	-0.13	5.87
70m	7.04	5.66	2.15	0.57	-0.13	5.87
80m	7.03	5.66	2.14	0.57	-0.13	5.87
90m	7.03	5.66	2.14	0.57	-0.13	5.87
100m	7.02	5.65	2.13	0.57	-0.13	5.87
110m	7.02	5.65	2.13	0.57	-0.13	5.87
120m	7.02	5.65	2.13	0.57	-0.13	5.87
130m	7.01	5.65	2.13	0.57	-0.13	5.87
140m	7.01	5.65	2.12	0.57	-0.13	5.87
150m	7.01	5.65	2.12	0.57	-0.13	5.87
190m	7.00	5.64	2.12	0.56	-0.13	5.87
210m	6.99	5.64	2.12	0.56	-0.13	5.87

2036 Do Something	NO _x	NO ₂	NH ₃	Dry deposition rate	Road increment dry deposition	Total deposition
	µg/m ³			kg N/ha/yr		
Boundary	7.39	5.84	2.38	0.58	-0.11	5.89
10m	7.23	5.76	2.27	0.58	-0.12	5.88
20m	7.15	5.72	2.22	0.57	-0.12	5.87
30m	7.11	5.70	2.19	0.57	-0.12	5.87
40m	7.08	5.68	2.17	0.57	-0.13	5.87
50m	7.07	5.68	2.16	0.57	-0.13	5.87
60m	7.05	5.67	2.15	0.57	-0.13	5.87
70m	7.05	5.66	2.15	0.57	-0.13	5.87
80m	7.04	5.66	2.14	0.57	-0.13	5.87
90m	7.03	5.66	2.14	0.57	-0.13	5.87
100m	7.03	5.66	2.13	0.57	-0.13	5.87
110m	7.02	5.65	2.13	0.57	-0.13	5.87
120m	7.02	5.65	2.13	0.57	-0.13	5.87
130m	7.02	5.65	2.13	0.57	-0.13	5.87
140m	7.01	5.65	2.13	0.57	-0.13	5.87
150m	7.01	5.65	2.12	0.57	-0.13	5.87
190m	7.00	5.64	2.12	0.56	-0.13	5.87
210m	7.00	5.64	2.12	0.56	-0.13	5.87

Receptor	Habitat 1 and 2						Habitat 3					
	Change						Change					
	NO _x		NH ₃		N Deposition		NO _x		NH ₃		N Deposition	
	µg/m ³	%	µg/m ³	µg/m ³	kg N/ha/yr	%/m ³	µg/m ³	%	µg/m ³	%	kg N/ha/yr	%
Boundary	0.01	0.05%	0.01	0.3%	0.001	0.01%	0.01	0.05%	0.01	0.3%	0.001	0.01%
10m	0.01	0.03%	0.00	0.2%	0.001	0.01%	0.01	0.03%	0.00	0.2%	0.001	0.01%
20m	0.01	0.03%	0.00	0.1%	0.001	0.01%	0.01	0.03%	0.00	0.1%	0.001	0.01%
30m	0.01	0.02%	0.00	0.1%	0.001	0.01%	0.01	0.02%	0.00	0.1%	0.001	0.01%
40m	0.01	0.02%	0.00	0.1%	0.000	0.00%	0.01	0.02%	0.00	0.1%	0.000	0.00%
50m	0.01	0.02%	0.00	0.1%	0.001	0.01%	0.01	0.02%	0.00	0.1%	0.001	0.01%
60m	0.01	0.02%	0.00	0.1%	0.000	0.00%	0.01	0.02%	0.00	0.1%	0.000	0.00%
70m	0.00	0.02%	0.00	0.0%	0.000	0.00%	0.00	0.02%	0.00	0.0%	0.000	0.00%
80m	0.00	0.02%	0.00	0.0%	0.000	0.00%	0.00	0.02%	0.00	0.0%	0.000	0.00%
90m	0.00	0.02%	0.00	0.0%	0.000	0.00%	0.00	0.02%	0.00	0.0%	0.000	0.00%
100m	0.00	0.01%	0.00	0.0%	0.001	0.01%	0.00	0.01%	0.00	0.0%	0.001	0.01%
110m	0.00	0.01%	0.00	0.0%	0.000	0.00%	0.00	0.01%	0.00	0.0%	0.000	0.00%
120m	0.00	0.01%	0.00	0.0%	0.000	0.00%	0.00	0.01%	0.00	0.0%	0.000	0.00%
130m	0.00	0.01%	0.00	0.0%	0.000	0.00%	0.00	0.01%	0.00	0.0%	0.000	0.00%
140m	0.00	0.01%	0.00	0.0%	0.000	0.00%	0.00	0.01%	0.00	0.0%	0.000	0.00%
150m	0.00	0.01%	0.00	0.0%	0.000	0.00%	0.00	0.01%	0.00	0.0%	0.000	0.00%
190m	0.00	0.01%	0.00	0.0%	0.000	0.00%	0.00	0.01%	0.00	0.0%	0.000	0.00%
210m	0.00	0.01%	0.00	0.0%	0.000	0.00%	0.00	0.01%	0.00	0.0%	0.000	0.00%



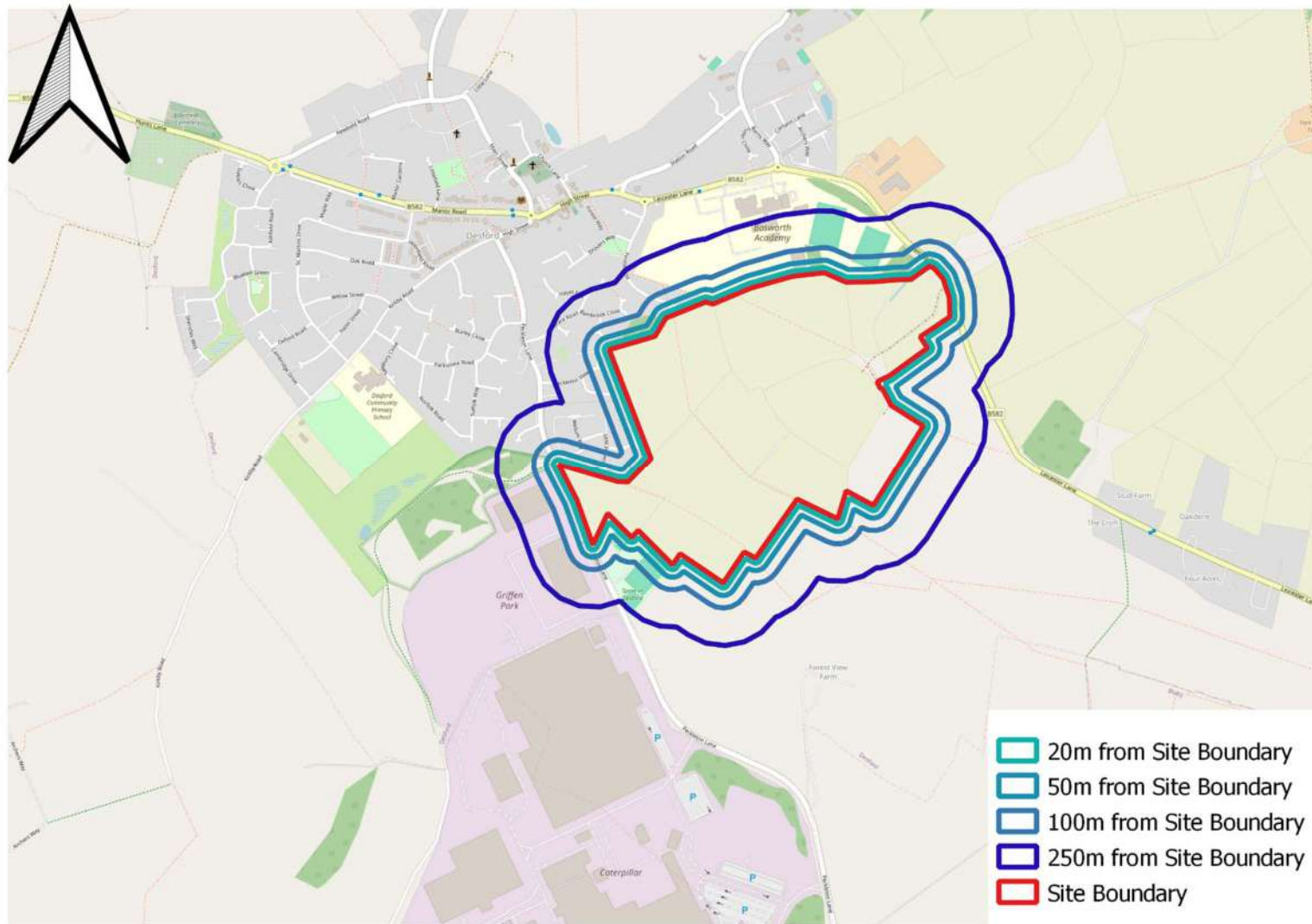
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APPENDICES

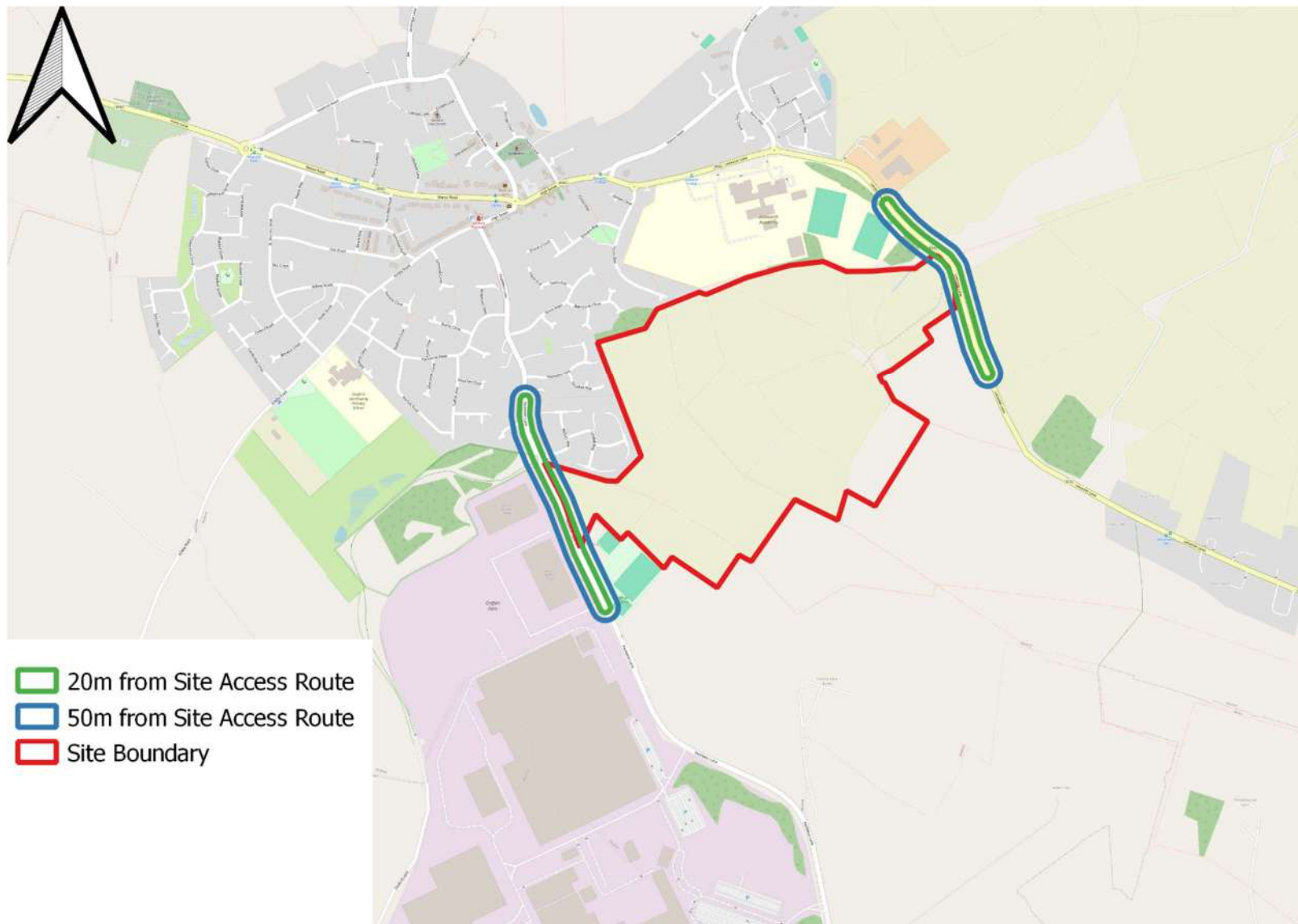
Appendix J



Construction Dust Buffer Zones



Track-out Dust buffer Zone





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APPENDICES

Appendix K



Mitigation for all sites: Communications

Mitigation measure	Low Risk	Medium Risk	High Risk
1. Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	N	H	H
2. Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	H	H	H
3. Display the head or regional office contact information	H	H	H

Mitigation for all sites: Dust Management

Mitigation measure	Low Risk	Medium Risk	High Risk
4. Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. In London additional measures may be required to ensure compliance with the Mayor of London's guidance. The DMP may include monitoring of dust deposition, dust flux, real-time PM ₁₀ continuous monitoring and/or visual inspections.	D	H	H
Site Management			
5. Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.	H	H	H
6. Make the complaints log available to the local authority when asked.	H	H	H
7. Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book.	H	H	H
8. Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.	N	N	H
Monitoring			
9. Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary.	D	D	H
10. Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked	H	H	H
11. Increase the frequency of site inspections 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 and during prolonged dry or windy conditions.	H	H	H
12. Agree dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.	N	H	H
Preparing and maintaining the site			
13. Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	H	H	H
14. Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	H	H	H
15. Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period	D	H	H
16. Avoid site runoff of water or mud.	H	H	H
17. Keep site fencing, barriers and scaffolding clean using wet methods.	D	H	H

Mitigation measure	Low Risk	Medium Risk	High Risk
18. Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	D	H	H
19. Cover, seed or fence stockpiles to prevent wind whipping.	D	H	H
Operating vehicle/machinery and sustainable travel			
20. Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable	H	H	H
21. Ensure all vehicles switch off engines when stationary - no idling vehicles.	H	H	H
22. Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.	H	H	H
23. Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)	D	D	H
24. Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	N	H	H
25. Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)	N	D	H
Operations			
26. Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	H	H	H
27. Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	H	H	H
28. Use enclosed chutes and conveyors and covered skips.	H	H	H
29. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	H	H	H
30. Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	D	H	H
Waste management			
31. Avoid bonfires and burning of waste materials.	H	H	H

Measures specific to demolition

Mitigation measure	Low Risk	Medium Risk	High Risk
32. Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).	D	D	H
33. Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.	H	H	H
34. Avoid explosive blasting, using appropriate manual or mechanical alternatives.	H	H	H
35. Bag and remove any biological debris or damp down such material before demolition.	H	H	H

Measures specific to earthworks

Mitigation measure	Low Risk	Medium Risk	High Risk
36. Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable..	N	D	H
37. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable	N	D	H
38. Only remove the cover in small areas during work and not all at once	N	D	H

Measures specific to construction

Mitigation measure	Low Risk	Medium Risk	High Risk
39. Avoid scabbling (roughening of concrete surfaces) if possible	D	D	H
40. Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	D	H	H
41. Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	N	D	H
42. For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	N	D	D

Measures specific to trackout

Mitigation measure	Low Risk	Medium Risk	High Risk
43. 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.	D	H	H
44. Avoid dry sweeping of large areas.	D	H	H
45. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	D	H	H
46. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	N	H	H
47. Record all inspections of haul routes and any subsequent action in a site log book.	D	H	H
48. Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowzers and regularly cleaned.	N	H	H
49. Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	D	H	H
50. 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.	N	H	H
51. Access gates to be located at least 10m from receptors where possible.	N	H	H

Key to Tables:

H	Highly recommended
D	Desirable
N	Not required



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