PANATTONI

Former Akzo Nobel Site, Slough

Air Quality Assessment

December 2019

Panattoni Ltd.

Former Akzo Nobel Site, Slough,

SL2 5EJ

Air Quality Assessment

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Executive Summary

WYG have conducted an air quality assessment for the outline planning application for a proposed development at the former Akzo Nobel site, Petersfield Avenue, Slough.

The potential effects during the construction phase include fugitive dust emissions from site activities, such as demolition, earthworks, construction and trackout.

During the construction phase, the potential effects from construction on air quality will be managed through best practice mitigation measures. With these mitigation measures in place, the effects from the construction phase are not predicted to be significant.

Following the adoption of the recommended mitigation measures during the construction phase, the development is not considered to be contrary to any of the national, regional or local planning policies.

The impacts during the operational phase take into account the exhaust emissions from additional road traffic generated due to the B2/B8 option at the proposed development. The assessment of the effects associated with both committed developments and the proposed developments with respect to NO_2, PM_{10} and $PM_{2.5}$ exposure is determined to be 'negligible' for all existing receptor.

With the data centre scenario, there will be a reduction in pollutant levels in the AQMA when compared to the B2 use.

An assessment of the data centre has shown that the predicted NO_2 annual mean PECs are all below the relevant long-term AQS of 40 µg/m^3 for the protection of human health for all 4 scenarios (generator testing/emergency operations). The effect of the proposed generator operations of all 4 scenarios on the local area is considered to be insignificant. The predicted long-term NO_2 concentrations from the proposed development are considered acceptable for the protection of human health.

The predicted NO_2 short-term PECs are all below the relevant short-term AQS of 200 µg/m^3 for the protection of human health for all 4 scenarios.

The percentage change in long-term process concentrations relative to the AQAL is below 1% of the relevant critical level for the protection of vegetation and Ecosystems. Therefore, the long-term process contributions have been screened out against the relevant standard/critical level.

Based on the assessment undertaken and data, methodology and assumptions used within this assessment it is concluded that the site is suitable for the proposed development.

1. Introduction

Panattoni Ltd have commissioned WYG to prepare an Air Quality Assessment for the outline planning application for a proposed development at the former Akzo Nobel site, Petersfield Avenue, Slough.

1.1 Site Location and Context

The proposed development site is located in the north of Slough at the approximate United Kingdom National Grid Reference is 498706, 180228. It is bounded to the north by The Grand Union Canal Slough Arm, and residential properties beyond, to the south by a trainline and residential properties beyond, to the east by Uxbridge Road, and residential properties beyond, and to the west by Wexham Road, and residential properties beyond. Reference should be made to Figure 1 for a map of the proposed development site and surrounding area.

It should be noted that for the assessment within this report consider illustrative masterplans to demonstrate the site is suitable for development. Following the outline application, reserved matters applications may be submitted where layout can be subject to change.

The following assessment stages have been undertaken as part of this assessment:

- Baseline evaluation;
- Assessment of potential air quality impacts during the construction phase;
- Assessment of potential air quality impacts during the operational phase; and,
- Identification of mitigation measures (as required).

This air quality report includes two potential different uses for the site.

The first includes a commercial site with storage and distribution units.

The second option includes the use of the site as a data centre.

It should be noted that the layout for the data centre scenario is indicative. In order to assess the worst-case scenario of 70,000m^2 of data centre use of the site, it has been assumed 2.No 2-storey data centre buildings in the middle of the site which will concentrate the stand-by generators and cooling equipment rather than being spread out over the B2/B8 indicative masterplan.

The results of the assessment are detailed in the following sections of this report.

The construction phase assessment considers the potential effects of dust and particulate emissions from site activities and materials movement based on a qualitative risk assessment method based on the Institute of Air Quality Management's (IAQM) 'Guidance on the Assessment of Dust from Demolition and Construction' document, published in 2014.

The assessment of the potential air quality impacts that are associated with the operational phase has focused on the predicted impact of changes in ambient nitrogen dioxide (NO_2) and particulate matter with an aerodynamic diameter of less than 10 µm (PM_{10}) and less than 2.5 µm ($PM_{2.5}$) as a result of the development at key local receptor locations. The changes have been referenced to EU air quality limits and UK air quality objectives and the magnitude and impact description of the changes have been referenced to non-statutory guidance issued by the IAQM and Environmental Protection UK (EPUK).

2. Policy and Legislative Context

2.1 Documents Consulted

The following documents were consulted during the undertaking of this assessment:

Legislation and Best Practice Guidance

- National Planning Policy Framework, Ministry for Housing, Communities and Local Government, Revised February 2019;
- Planning Practice Guidance: Air Quality, Ministry for Housing, Communities and Local Government, November 2019;
- The Air Quality Standards Regulations (Amendments), 2016;
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, 2007;
- The Environment Act, 1995;
- Local Air Quality Management Technical Guidance LAQM.TG16, Defra, 2018;
- Design Manual for Roads and Bridges, Volume 11, Section 3, Part 1, HA 207/07 - Air Quality, Highways Agency, 2007;
- Land-Use Planning & Development Control: Planning for Air Quality, EPUK & IAQM, 2018;
- A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites, IAQM, June 2019; and,
- Guidance on the Assessment of Dust from Demolition and Construction, IAQM, 2014.

Websites Consulted

- Google maps (maps.google.co.uk);
- The UK National Air Quality Archive (www.airquality.co.uk);
- Department for Transport Matrix (www.dft.go.uk/matrix);
- emapsite.com;
- Multi-Agency Geographic Information for the Countryside (http://magic.defra.gov.uk/); and,
- Slough Borough Council (http://www.slough.gov.uk/).

Site Specific Reference Documents

- 2019 Air Quality Annual Status Report for Slough Borough Council; and,
- Slough Borough Council Local Development Framework Core Strategy, Adopted December 2016.

2.2 Air Quality Legislative Framework

European Legislation

European air quality legislation is consolidated under Directive 2008/50/EC, which came into force on 11th June 2008. This Directive consolidates previous legislation which was designed to deal with specific pollutants in a consistent manner and provides new air quality objectives for fine particulates. The consolidated Directives include:

- **Directive 1999/30/EC –** the First Air Quality "Daughter" Directive **–** sets ambient air limit values for NO_2 and oxides of nitrogen, sulphur dioxide, lead and PM_{10};
- **Directive 2000/69/EC –** the Second Air Quality "Daughter" Directive **–** sets ambient air limit values for benzene and carbon monoxide; and,
- **Directive 2002/3/EC –** the Third Air Quality "Daughter" Directive **–** seeks to establish long-term objectives, target values, an alert threshold and an information threshold for concentrations of ozone in ambient air.

The fourth daughter Directive was not included within the consolidation and is described as:

- **Directive 2004/107/EC –** sets health-based limits on polycyclic aromatic hydrocarbons, cadmium, arsenic, nickel and mercury, for which there is a requirement to reduce exposure to as low as reasonably achievable.

UK Legislation

The Air Quality Standards Regulations (Amendment 2016) seek to simplify air quality regulation and provide a new transposition of the Air Quality Framework Directive, First, Second and Third Daughter Directives and also transpose the Fourth Daughter Directive within the UK. The Air Quality Limit Values are transposed into the updated Regulations as Air Quality Standards, with attainment dates in line with the European Directives. SI 2010 No. 1001, Part 7 Regulation 31 extends powers, under Section 85(5) of the Environment Act (1995), for the Secretary of State to give directions to Local Authorities (Las) for the implementation of these Directives.

The UK Air Quality Strategy is the method for implementation of the air quality limit values in England, Scotland, Wales and Northern Ireland and provides a framework for improving air quality and protecting human health from the effects of pollution.

For each nominated pollutant, the Air Quality Strategy sets clear, measurable, outdoor air quality standards and target dates by which these must be achieved; the combined standard and target date is referred to as the Air Quality Objective (AQO) for that pollutant. Adopted national standards are based on the recommendations of the Expert Panel on Air Quality Standards (EPAQS) and have been translated into a set

of Statutory Objectives within the Air Quality (England) Regulations (2000) SI 928, and subsequent amendments.

The AQOs for pollutants included within the Air Quality Strategy and assessed as part of the scope of this report are presented in Table 2.1 along with European Commission (EC) Directive Limits and World Health Organisation (WHO) Guidelines.

Table 2.1 Air Quality Standards, Objectives, Limit and Target Values

Pollutant	Applies	Objective	Concentration Measured as[10]	Date to be achieved and maintained thereafter	European Obligations	Date to be achieved and maintained thereafter	New or existing
PM_{10}	UK	50µg/m^3 by end of 2004 (max 35 exceedances a year)	24-hour mean	1st January 2005	50µg/m^3 by end of 2004 (max 35 exceedances a year)	1st January 2005	Retain Existing
	UK	40µg/m^3 by end of 2004	Annual mean	1st January 2005	40µg/m^3	1st January 2005	
$PM_{2.5}$	UK	25µg/m^3	Annual Mean	31st December 2010	25µg/m^3	1st January 2010	Retain Existing
NO_2	UK	200µg/m^3 not to be exceeded more than 18 times a year	1-Hour Mean	31st December 2005	200µg/m^3 not to be exceeded more than 18 times a year	1st January 2010	Retain Existing
	UK	40µg/m^3	Annual Mean	31st December 2005	40µg/m^3	1st January 2010	

Within the context of this assessment, the annual mean objectives are those against which facades of residential receptors will be assessed and the short-term objectives apply to all other receptor locations, where people may be exposed over a short duration, both residential and non-residential such as using gardens, balconies, walking along streets, using playgrounds, footpaths or external areas of employment uses.

Local Air Quality Management

Under Section 82 of the Environment Act (1995) (Part IV) Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves assessing present and likely future air quality against the AQOs. If it is predicted that levels at the façade of buildings where members of the public are regularly present (normally residential properties) are likely to be exceeded, the LA is required to declare an Air Quality Management Area (AQMA). For each AQMA the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

2.3 Planning and Policy Guidance

National Policy

The National Planning Policy Framework (NPPF), revised February 2019, principally brings together and summarises the suite of Planning Policy Statements (PPS) and Planning Policy Guidance (PPG) which previously guided planning policy making. The NPPS states 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 or 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 or 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'*

The Planning Practice Guidance (PPG) web-based resource was launched by the Ministry for Communities and Local Government (MHCLG) on 6 March 2014 to support the National Planning Policy Framework and make it more accessible. A review of PPG: Air Quality identified the following guidance:

> *'When deciding whether air quality is relevant to a planning application, local planning authorities should consider whether the development would:*
>
> *Significantly affect traffic in the immediate vicinity of the proposed development site or further afield. This could be by generating or increasing traffic congestion; significantly changing traffic volumes, vehicle speed or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; adds to turnover in a large car park; or result in construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more.*
>
> *Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; or extraction systems (including chimneys) which require approval under pollution control legislation or biomass boilers or biomass-fuelled CHP plant; centralised boilers or CHP plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area.*
>
> *Expose people to existing sources of air pollutants. This could be by building new homes, workplaces or other development in places with poor air quality.*
>
> *Give rise to potentially significant impact (such as dust) during construction for nearby sensitive locations.*

Affect biodiversity. In particular, is it likely to result in deposition or concentration of pollutants that significantly affect a European-designated wildlife site and is not directly connected with or necessary to the management of the site, or does it otherwise affect biodiversity, particularly designated wildlife sites.'

Local Policy

Slough Borough Council adopted its Local Plan Core Strategy in December 2016. This outlines the Council's broad planning strategy. Following a review of policies within the development core strategy, the following statements were identified as being relevant to the proposed development from an air quality perspective:

"CORE POLICY 8 (SUSTAINABILITY AND THE ENVIRONMENT) All development in the Borough shall be sustainable, of a high quality design, improve the quality of the environment and address the impact of climate change…

… 3. Pollution Development shall not: a) Give rise to unacceptable levels of pollution including air pollution, dust, odour, artificial lighting or noise"

2.4 Consultation Stages

2.4.1 Meeting 6th September

WYG attended a meeting at Slough Borough Council with the Environmental Health Officer and Planners from the council to determine the scope of the air quality assessment. At this meeting it was agreed that:

- 'Sensitivity testing' of the traffic would be undertaken under different future baseline ('do minimum') scenarios including:
    - The 'existing consented scenario', i.e. inclusive of the lawful development of the site
    - The future year with the current use of the site
- Include PM_{10} and $PM_{2.5}$ in modelling results
- The extent of the traffic model
- Completion of a damage costs assessment
- The damage cost assessment output to be put towards appropriate mitigation measured including but not limited to:
    - electric vehicle charging
    - 20-30 car club spaces

- Contribution to Slough Council Car Club sharing

- Ecological receptors to be considered

Comments Received 7th September 2019

Table 2.2 Clarifications and requests for further information

Item	Report section	Summary of clarification/further information required	WYG Comments
1	Table 4.3	Sensitive receptor locations may not show all the locations that could be have the highest concentrations. There are a number of modelled roads that do not have sensitive receptors: Broadmark Rd, Petersfield Ave, Stock Rd, (Wellesley Rd, Diamond Rd).	As part of the updated assessment, sensitive receptor locations have been included along these roads.
2	Omitted	Provide a pollution concentration contour map so to prove that the highest concentrations are being captured by the model.	This has been added
3	Section 6.3	The model verification section of the report has text with it that does not appear to be congruent with the tables that they are discussing. Please provide clarification. If the RMSE is greater than 25% then model setup will need to be revisited, If this isn't the case, then the model verification is compliant with LAQM.TG16.	Please see Section 6.3 (Model Verification) which shows that the model verification is within the 25% divergence in accordance within TG16.
4	Section 6.1	Provision of the transport assessment. Have all relevant roads been modelled? Any road with AADT of greater than 500 increase will need to be modelled (100 AADT within AQMA) for air quality.	The traffic data used within the Air Quality Assessment has been provided by i-Transport.
5	Section 6	The year 2025 has been taken as the future year for modelling as this is the assumed opening year. Is this the year where there is the highest expected change in vehicle movements? Is the site to have staggered opening. The earliest possible year of new sensitive receptors should be assessed as pollution impacts of traffic will be greater with older fleets.	An assessment year of 2025 was used as this is considered to be the earliest operation of the site.
6	Section 6	There is no provision of information on sources that are not road sources. Please can you provide information on how heating and electricity will be supplied to the development to understand whether non-road sources are irrelevant.	It should be noted that the pollutant contribution of minor roads and rail sources that are not included within the dispersion model is considered to be accounted for via the use of background air quality levels.

Item	Report section	Summary of clarification/further information required	WYG Comments
7	Section 4.1	There is reference to SLO 27 being the closest diffusion tube to the site but this is the only mention of the monitoring location in the report, it does not appear in any of the tables. Why has it been excluded?	SLO27 now referenced as appropriate.
8	Section 6.2	There is discussion that the Defra background maps are not likely to be representative of local air quality but proceed to use them for all locations. Please explain why Defra background maps have been used in preference of monitoring data?	This is an error. Please see Table 6.4 which illustrates that published Defra background concentrations were used at all monitoring and receptor locations.
10	Omitted	Provision of both a demolition plan and construction plan would allow for determination of the air quality impacts during these phases are being assessed correctly.	The mitigation measures for demolition are dealt with in the approved application for demolition at the site.
11	Section 5.5	The results of the construction phase are provided but the working is not provided. The methodology is provided in the appendix but does not include how the modeller has assessed/categorised. Please provide workings.	Calculation ins line with method in Appendix A
12	Section 5.5	Demolition has been provided as N/A. Why?	Demolition of the site is already approved.
13	Table 8.1	All highly recommended dust and air emission mitigation measures have been included except number 12 from the IAQM Guidance on the assessment of dust from demolition and construction. Please justify this?	This has been included following confirmation from the client.
14	Section 6.1	"To provide a worst-case assessment, traffic from scenario 4… has been used". Provide clarification on how it was determined that this was the worst-case scenario?	Scenario 4 (Scenario 2, Mix 2) is considered worse-case due to the scenario with the greatest increase in traffic movements in comparison to the Do Minimum.
15	Table 4.4	Ecological receptors should be provided with distance from the road network to show that these receptors are not within 200m of the road network.	Updated
16	Table 4.2	Diffusion tubes mentioned in the text beneath the table that do not appear in the table.	Amended.
17	Section 6	Throughout the report, two scenarios are discussed. Within these there are "Proposed Development Mix 1" and "Proposed	The difference between Mix 1 and Mix 2 are associated with

Item	Report section	Summary of clarification/further information required	WYG Comments
		Development Mix 2". Please provide clarification on what the differences are between the two development mixes are.	the distribution of traffic within the scheme. Updated descriptions are included within this version of the report.

3. Assessment Methodology

The potential environmental effects of the operational phase of the proposed development are identified as far as current knowledge of the site and development is known. The impact description of potential environmental effects is assessed according to the latest guidance produced by EPUK and IAQM in January 2018.

The methodology used to determine the potential air quality effects of the construction phase of the proposed development has been derived from the IAQM 'Guidance on the Assessment of the Impacts of Dust from Demolition and Construction' document and is summarised in Section 5.

3.1 Determining Impact Description of the Air Quality Effects

The impact description of the effects during the operational phase of the development is based on the latest guidance produced by EPUK and IAQM in January 2018. The EPUK/IAQM guidance provides a basis for a consistent approach that could be used by all parties associated with the planning process to professionally judge the overall impact description of the air quality effects based on severity of air quality impacts.

The following rationale is used in determining the severity of the air quality effects at individual receptors:

1. The change in concentration of air pollutants, air quality effects, are quantified and evaluated in the context of AQOs. The effects are provided as a percentage of the Air Quality Objective (AQO), which may be an AQO, EU limit or target value, or an Environment Agency 'Environmental Assessment Level (EAL)';
2. The absolute concentrations are also considered in terms of the AQO and are divided into categories for long term concentration. The categories are based on the sensitivity of the individual receptor in terms of harm potential. The degree of harm potential to change increases as absolute concentrations are close to or above the AQO;
3. Severity of the effect is described as qualitative descriptors; negligible, slight, moderate or substantial, by taking into account in combination the harm potential and air quality effect. This means that a small increase at a receptor which is already close to or above the AQO will have higher severity compared to a relatively large change at a receptor which is significantly below the AQO;
4. The effects can be adverse when pollutant concentrations increase or beneficial when concentrations decrease as a result of development;
5. The judgement of overall impact description of the effects is then based on severity of effects on all the individual receptors considered; and,
6. Where a development is not resulting in any change in emissions itself, the impact description of effect is based on the effect of surrounding sources on new residents or users of the development, i.e., will they be exposed to levels above the AQO.

Table 3.1 Impact Description of Effects Matrix

Long term average concentration at receptor in assessment year	% Change in concentration relative to AQO			
	1	2-5	6-10	>10
≤75% of AQO	Negligible	Negligible	Slight	Moderate
76-94% of AQO	Negligible	Slight	Moderate	Moderate
95-102% of AQO	Slight	Moderate	Moderate	Substantial
103-109 of AQO	Moderate	Moderate	Substantial	Substantial
≥110 of AQO	Moderate	Substantial	Substantial	Substantial

In accordance with explanation note 2 of Table 6.3 of the EPUK & IAQM guidance, the Table above is intended to be used by rounding the change in percentage pollutant concentration to whole numbers, which then makes it clearer which cell the impact falls within. The user is encouraged to treat the numbers with recognition of their likely accuracy and not assume a false level of precision. Changes of 0%, i.e. less than 0.5%, will be described as 'Negligible'.

4. Baseline Conditions

4.1 Air Quality Review

This section provides a review of the existing air quality in the vicinity of the proposed development site in order to provide a benchmark against which to assess potential air quality impacts of the proposed development. Baseline air quality in the vicinity of the proposed development site has been defined from a number of sources, as described in the following sections.

Local Air Quality Management (LAQM)

As required under section 82 of the Environment Act 1995, Slough Borough Council (SBC) has conducted an ongoing exercise to review and assess air quality within its area of jurisdiction. The assessments have indicated that concentrations of NO_2 are above the relevant AQOs at a number of locations of relevant public exposure within the area administered by the Council; SBC has four designated Air Quality Management Areas (AQMAs) as outlined below;

- Slough AQMA No.1: An area encompassing land adjacent to the M4 motorway along the north carriageway between junctions 5 and 7, and along the south carriageway between junction 5 and Sutton Lane.
- Slough AQMA No.2: An area encompassing the A4 London Road east of junction 5 of the M4 Motorway as far as Sutton Lane.
- Slough AQMA No.3 Extension: The designated area incorporates stretch of road between Tuns Lane Junction known as the "Three Tuns" and 30 Bath Road and Quadrivium Point**.**
- Slough AQMA No.4: The Designated Area incorporates the A4 Bath Road from the junction with Ledgers Road/Stoke Poges Lane, in an easterly direction, along Wellington Street, up to Sussex Place junction.

The proposed development is located 220 m North of the Slough AQMA No.4, therefore receptors within the AQMA have been included within the modelling assessment.

Air Quality Monitoring

Monitoring of air quality within SBC is undertaken through continuous and non-continuous monitoring methods. These have been reviewed in order to provide an indication of existing air quality in the area surrounding the proposed development site.

Continuous Monitoring

SBC operated a network of 10 automatic monitoring stations in 2018. The closest automatic monitoring station is located approximately 350 m south from the site boundary.

The closest monitoring station results are presented in Table 4.1 below.

Table 4.1 Automatic Monitoring Locations

Site ID	Location	Site Type	Distance to kerb of nearest road (m)	Inlet Height (m)	NO_2 Annual Mean Concentration 2018 (µg/m^3)
SLH10	Slough Town Centre, Wellington Street	Kerbside	5.0	1.5	36
SLH12	Slough Windmill, Bath Road	Kerbside	7.5	1.5	42

Table 4.1 above illustrates that only monitored any exceedances of the NO_2 AQO (40 µg/m^3) in 2018.

Non-Continuous Monitoring

SBC operated a network of passive diffusion tubes in 2018. The closest diffusion tube SLO 27 is located approximately 50 m south from the site boundary.

The closest NO_2 diffusion tube monitoring results from within SBC are presented in Table 4.2 below.

Table 4.2 Nitrogen Dioxide Monitoring Locations

Site ID	Location	Site Type	Distance to kerb of Nearest Road (m)	Inlet Height (m)	NO_2 Annual Mean Concentration 2018 (µg/m^3)
SLO 5	Princess Street	Roadside	22.0	2	34.40
SLO 6	Sussex Place	Roadside	9.6	2	29.00
SLO 23*	Tuns Lane	Urban	17.5	2.5	29.50
SLO 24*	Spackmans Way	Other	60.5	2.5	32.70
SLO 25*	Paxton Avenue	Other	34.5	2	33.20
SLO 26	Yew Tree Rd (Uxbridge Rd) (B)	Roadside	9.5	2	31.50
SLO 27	India Road	Other	13	2	26.90
SLO 29	Yew Tree Road (Uxbridge Rd)	Kerbside	1.5	2	52.70
SLO 33	Wellington Street - Stratfield	Roadside	12.0	2.5	28.70
SLO 37	Blair Road- Victoria Court	Roadside	11	2	39.90
SLO 38	Wellesley Road	Roadside	11.5	2.5	32.30
SLO 40	Wexham Road	Roadside	11.0	2	38.60
SLO 43	Windmill (Bath Rd)	Roadside	12	2	34.00
SLO 44	Goodman Park (Uxbridge Rd)	Roadside	9.7	2.5	31.90
SLO 46	Cornwall House, Bath Rd	Roadside	5	2	40.10
SLO 47	Princes House, Bath Road	Roadside	4.5	2	35.20
SLO 48*	Castle Street	Roadside	14	2	28.10
SLO 49	Windsor Road (B)	Roadside	1.5	2	40.00
SLO 50	Tuns Lane (B)	Kerbside	4	2	45.80

Table 4.2 above illustrates that only diffusion tube locations SLO29, SL046, SLO49 & SLO50 monitored exceedances of the AQO for NO_2 (40 µg/m^3) in 2018.

4.2 Meteorology

Meteorological conditions have significant influence over air pollutant concentrations and dispersion. Pollutant levels can vary significantly from hour to hour as well as day to day, thus any air quality predictions need to be based on detailed meteorological data. The ADMS model calculates the dispersion of pollutants on an hourly basis using a year of local metrological data. The meteorological data used in the assessment is derived from 2018 Heathrow Airport Meteorological Station. This is the nearest meteorological station, which is considered representative of the development site, with all the complete parameters necessary for the ADMS model. Reference should be made to Figure 2 for an illustration of the prevalent wind conditions at the Heathrow Airport Meteorological Station site.

4.3 Emission Sources

A desktop assessment has identified that traffic movements are likely to be the most significant local source of pollutants affecting the site and its surroundings. The principal traffic derived pollutants likely to impact local receptors are NO_2, PM_{10} and $PM_{2.5}$.

The assessment has therefore modelled all roads within the immediate vicinity of the proposed development site which are considered likely to experience changes in traffic flow as a result of the proposed development. Reference should be made to Figure 1 for a graphical representation of the traffic data utilised within the ADMS Roads 4.1.1 model.

It should be noted that the pollutant contribution of minor roads and rail sources that are not included within the dispersion model is considered to be accounted for via the use of background air quality levels.

4.4 Sensitive Receptors

Receptors that are considered as part of the air quality assessment are primarily those existing receptors that are situated along routes predicted to experience changes in traffic flow as a result of the proposed development.

The modelled sensitive receptors are summarised below.

Table 4.3 Modelled Existing Sensitive Receptor Locations

Discrete Sensitive Receptor		Coordinates		Receptor Height (m)
		X	Y	
R1	Princes Street	498552	179808	1.5
R2	Hazelmere Road	499037	180364	1.5
R3	Yew Tree Road	498499	179731	1.5
R4	Wexham Road	498394	179849	1.5
R5	Apsley House	498138	179920	1.5
R6	Cornwall House	497501	179974	1.5
R7	Claycoats School	496943	180043	1.5

Discrete Sensitive Receptor		Coordinates		Receptor Height (m)
		X	Y	
R8	Windmill Care Centre	496506	180184	1.5
R9	Tuns Lane	496366	179928	1.5
R10	Paxton Avenue	496124	179253	1.5
R11	Spackmans Way	496237	179200	1.5
R12	Slough and Eton CoE Business and Enterprise College	496869	179191	1.5
R13	Windsor Road	497374	179439	1.5
R14	Saint Mary's Church of England Primary School	498281	179425	1.5
R15	16 John Taylor Court	496426	180162	1.5
R16	19 Farnham Road	496351	180331	1.5
R17	49 Stoke Road	497718	180412	1.5
R18	50 Stoke Road	497772	180431	1.5
R19	100 Wexham Road	498547	180361	1.5
R20	98 Broadmark Road	499099	180430	1.5
R21	25 Cannon Gate	499345	180876	1.5
R22	27 Clifton Road	498623	179672	1.5

4.5 Ecological Receptors

Air quality impacts associated with the proposed development have the potential to impact on receptors of ecological sensitivity within the vicinity of the site. The IAQM guide on the assessment of air quality impacts on designated nature conservation sites (2019) document outlines the types of designated nature sites within 2 km of the proposed development which require air quality assessment. These are inclusive of;

- Sites of Special Scientific Interest (SSSIs);
- Special Areas of Conservation (SACs);
- Special Protection Areas (SPAs);
- Ramsar Sites;
- Areas of Special Scientific Interest (ASSIs);
- National Nature Reserves (NNRs);
- Local Nature Reserves (LNRs);
- Local Wildlife Sites (LWSs);
- Areas of Ancient Woodland (AW); and,
- Biological Notification Site (BNS).

The Conservation of Habitats and Species Regulations (2018) additionally requires competent authorities to review planning applications and consents that have the potential to impact on European designated sites (e.g. Special Protection Areas).

A study was undertaken to identify any statutory designated sites of ecological or nature conservation importance within the extents of the dispersion modelling assessment. This was completed using the Multi-

Agency Geographic Information for the Countryside (MAGIC) web-based interactive mapping service, which draws together information on key environmental schemes and designations. Consultation with the project ecologists (Middlemarch) has also been undertaken.

Following a search within a 2 km radius of the site boundary, seven ecological receptors were identified, as shown in Table 4.4 below and on Figure 1.

Table 4.4 Ecological Receptors

Site ID	Site	Designation	UK NGR (m)		Distance from Site (km)	Distance from nearest road (m)
			X	Y		
E1	Railway Triangle	LWS	497318	180155	0.9	
E2	Eton Meadows	BOA	495473	178197	1.1	
E3	St Marys Churchyard	BNS	497605	179519	1.2	
E4	Upton Court Park	LWS	498238	178838	1.3	
E5	Langley Park	BNS	499367	180709	1.6	
E6	Stoke Park	BNS	497244	181983	2.0	
E7	Herschel Park	LNR	497830	178995	1.2	
E8	Burnham Beeches	SAC	495487.2	187068.84	5.0	

In accordance with the IAQM Guidance, several receptor assessment points were positioned on the conservation sites as shown above. This is to determine the effects at different locations of the site.

It should be noted that the IAQM Guidance only requires the assessment of ecological receptors which are located within 200m of the road network.

5. Assessment of Air Quality Impacts - Construction Phase

5.1 Pollutant Sources

The main emissions during construction are likely to be dust and particulate matter generated during earth moving (particularly during dry months) or from construction materials. The main potential effects of dust and particulate matter are:

- Visual - dust plume, reduced visibility, coating and soiling of surfaces leading to annoyance, loss of amenity, the need to clean surfaces;
- Physical and/or chemical contamination and corrosion of artefacts;
- Coating of vegetation and soil contamination; and,
- Health effects due to inhalation e.g. asthma or irritation of the eyes.

A number of other factors such as the amount of precipitation and other meteorological conditions will also greatly influence the amount of particulate matter generated.

Construction activities can give rise to short-term elevated dust/PM_{10} concentrations in neighbouring areas. This may arise from vehicle movements, soiling of the public highway, demolition or windblown stockpiles.

5.2 Particulate Matter (PM_{10})

The UK Air Quality Standards seek to control the health implications of respirable PM_{10}. However, the majority of particles released from construction will be greater than this in size.

Construction works on site have the potential to elevate localised PM_{10} concentrations in the area. On this basis, mitigation measures should still be taken to minimise these emissions as part of good site practice.

5.3 Dust

Particles greater than 10µm are likely to settle out relatively quickly and may cause annoyance due to their soiling capability. Although there is no formal standards or criteria for nuisance caused by deposited particles, the IAQM 'Guidance on Monitoring in the Vicinity of Demolition and Construction Sites' (October 2018) and the Environment Agency Technical Guidance Note (TGN) M17 states that dust is usually compared with a 'complaints likely' guideline of 200mg/m^2/day. Therefore, a deposition rate of 200mg/m^2/day is often presented as a threshold for serious nuisance though this is usually only applied to long term exposure as people are generally more tolerant of dust for a short or defined period. Significant nuisance is likely when the dust coverage of surfaces is visible in contrast with adjacent clean areas, especially when it happens regularly. Severe dust nuisance occurs when the dust is perceptible without a clean reference surface.

Construction activities have the potential to suspend dust, which could result in annoyance of residents surrounding the site. Measures will be taken to minimise the emissions of dust as part of good site practice.

Recommended mitigation measures proportionate to the risk associated with the development and based on best practice guidance are discussed in the following sections.

5.4 Methodology

The construction phase assessment utilises the IAQM Guidance on the Assessment of Dust from Demolition and Construction document published in February 2014.

Four construction processes are considered; these are demolition, earthworks, construction and trackout. For each of these phases, the impact description of the potential dust impacts is derived following the determination of a dust emission magnitude and the distance of activities to the nearest sensitive receptor, therefore assessing worst case impacts. A full explanation of the methodology is contained in Appendix A.

5.5 Assessment Results

Based on the methodology detailed in Appendix A, the scale of the anticipated works has determined the potential dust emission magnitude for each process, as presented in the Table 5.1 below.

Table 5.1 Dust Emission Magnitude

Construction Process	Site Criteria	Dust Emission Magnitude
Demolition	Demolition Volume: 20,000m^3 - 50,000m^3	Medium
Earthworks	Total Site Area: 2,500m^2 - 10,000m^2	Medium
Construction	Total Building Volume between 25,000m^3 & 100,000m^3	Medium
Trackout	Assumed 10-50 HDV outward movements in any one day	Small

The sensitivity of the surrounding area to each construction process has been determined following stage 2B of the IAQM guidance. The assessment has determined the area sensitivities as shown in the Table 5.2.

Table 5.2 Sensitivity of the Area

Source	Area Sensitivity					
	Dust Soiling		Health Effects of PM_{10}		Ecological	
Demolition	High	100 Highly Sensitive Receptors within 50m	Low	Annual Mean of <24 ug/m^3 for PM_{10} 10-100 Highly Sensitive Receptors within 50m	N/A	>50m from site
Earthworks	High	100 Highly Sensitive Receptors within 50m	Low		N/A	
Construction	High	100 Highly Sensitive Receptors within 50m	Low		N/A	
Trackout	High	100 Highly Sensitive Receptors within 50m	Low		Low	<50m from roads within 200m from site boundary

The dust emission magnitude determined in Table 5.1 has been combined with the sensitivity of the area determined in Table 5.2, to determine the risk of impacts prior to the implementation of appropriate mitigation measures. The potential impact description of dust emissions associated with the construction phase, without mitigation, is presented overleaf.

Table 5.3 Impact Description of Construction Activities without Mitigation

Source	Summary Risk of Impacts Prior to Mitigation		
	Dust Soiling	Health Effects of PM_{10}	Ecological
Demolition	Medium	Low	N/A
Earthworks	Medium	Low	N/A
Construction	Medium	Low	N/A
Trackout	Low	Negligible	Negligible

Appropriate mitigation measures are detailed and presented in Section 8. Following the adoption of these measures, the subsequent impact description of the construction phase is not predicted to be significant.

6. Assessment of Air Quality Impacts - Operational Phase

In the context of the proposed development, transportation is identified as the dominant emission source that is likely to cause potential risk of exposure of air pollutants at receptors.

The operational phase assessment therefore consists of the quantified predictions of the change in NO_2, PM_{10} and $PM_{2.5}$ for the operational phase of the development due to changes in traffic movement. Predictions of air quality at the site have been undertaken for the operational phase of the development using ADMS Roads.

The traffic used within the assessment considers an underutilised site and does not account for the proposed lawful use of the site so can be seen as a worse-case comparison of the change from the future baseline without any development and the proposed development flows.

The model has included the provided traffic data, as contained within the supporting Transport Statement (TS). The operational phase assessment has been undertaken with an assumed opening year of 2026. The assessment scenarios are as below:

Scenario 1

- 2018 Baseline = Existing baseline conditions;
- 2026 "Do Minimum" = The lawful use of the site – this scenario includes background traffic growth (from 2019), committed developments and 8,070sq.m Research and Development and 52,293sq m of B2 use on the site;
- 2026 "Do Something" 1 = This scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings, 8,361sq.m B2 use and 28,428sq.m B8 use.
- 2026 "Do Something" 2 = This scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings and 36,789sq.m B8 use.

'Do Minimum' figures were provided as 2026 Baseline 1b; the lawful use of the site – this scenario includes background traffic growth (from 2019), committed developments and 8,070sq.m Research and Development and 52,293sq m of B2 use on the site. While both 'Do something' scenarios were provided as 2026 + Committed Development Scenario 1b, and 2026 + Committed Development Scenario 2b.

Scenario 2

- 2018 Baseline = Existing baseline conditions;
- 2026 "Do Minimum" = The existing, underutilised, use of the site – this scenario includes background traffic growth (from 2019), committed developments and 8,070sq.m Research and Development use on the site;

- 2026 "Do Something" 1 = This scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings, 8,361sq.m B2 use and 28,428sq.m B8 use.
- 2026 "Do Something" 2= This scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings and 36,789sq.m B8 use.

'Do Minimum' figures were provided as 2026 Baseline 2b; the existing, underutilised, use of the site – this scenario includes background traffic growth (from 2019), committed developments and 8,070sq.m Research and Development use on the site. While both 'Do something' scenarios were provided as 2026 + Committed Development Scenario 1b, and 2026 + Committed Development Scenario 2b.

6.1 Existing and Predicted Traffic Flows

Baseline 2018 traffic data and projected 2026 'do minimum' and 'do something' traffic data have been obtained for the operational phase assessment in the form of Annual Average Daily Traffic figures (AADT).

i-Transport LLP Transport Consultants have provided traffic data, for all links in Table 6.1 for the 2026 'do minimum' and 'do something' scenarios. I-Transport LLP Transport Consultants provided a 2019 Baseline traffic data, to calculate the 2018 Baseline year traffic flows, a TEMPRO factor of 1.0271 was applied.

Emission factors for the 2018 baseline and 2026 projected 'do minimum' and 'do something' scenarios have been calculated using the Emission Factor Toolkit (EFT) Version 9.0 (May 2019).

Where unavailable, traffic speeds have been estimated based on site observations and national speed limits. A 50m 20km/hr slow down phase is included on each link at every junction and roundabout within the assessment. All of the roads within the dispersion model are illustrated in Figure 1. Detailed traffic figures are provided in Table 6.1 and Table 6.2.

Table 6.1 Traffic Data – Scenario 1

Link	Speed (km/h)	2018 Baseline		2026					
				Do Minimum		Do Something Development Scenario 1b		Do Something Development Scenario 2b	
		AADT	HGV %	AADT	%HGV	AADT	%HGV	AADT	%HGV
Wexham Road	48	15357	1.04%	16821	1.04%	17402	1.14%	17393	1.16%
Wellington Street (West of HTC Roundabout) Eastbound	48	21583	2.53%	23519	2.51%	23558	2.67%	23565	2.69%
Wellington Street (West of HTC Roundabout) Westbound	48	11829	3.46%	12993	3.41%	13039	3.72%	13039	3.77%
Wellington Street (East of HTC Roundabout) Eastbound	48	15319	3.92%	16983	3.87%	17024	3.89%	17031	3.89%
Wellington Street (East of HTC Roundabout) Westbound	48	10810	4.11%	12081	4.03%	12126	4.06%	12133	4.06%
Sussex Place	48	36409	2.28%	40324	2.25%	40787	2.31%	40786	2.33%
Wellington Street (East of Uxbridge Road) Eastbound	48	19925	2.03%	22028	2.01%	22273	2.08%	22275	2.10%
Wellington Street (East of Uxbridge Road) Westbound	48	16484	2.53%	18296	2.50%	18514	2.58%	18512	2.60%
London Road	48	36409	2.28%	40324	2.25%	40787	2.31%	40786	2.33%
Uxbridge Road (North of Wellington Street) Southbound	48	13961	1.72%	15077	1.72%	15099	1.86%	15104	1.88%
Uxbridge Road (North of Wellington Street) Northbound	48	14662	1.68%	15832	1.68%	15856	1.82%	15859	1.84%
Uxbridge Road (North of Victoria Road) Southbound	48	13961	1.72%	15077	1.72%	15099	1.86%	15104	1.88%
Uxbridge Road (North of Victoria Road) Northbound	48	14662	1.68%	15832	1.68%	15856	1.82%	15859	1.84%
Uxbridge Road (North of Broadmark Road) Southbound	48	13601	1.51%	14898	1.51%	15128	1.63%	15124	1.66%
Uxbridge Road (North of Broadmark Road) Northbound	48	13478	1.66%	14762	1.66%	15018	1.78%	15021	1.80%
Stoke Road	48	18418	7.53%	20495	7.40%	20495	7.25%	20495	7.25%
William Street	48	18418	7.53%	20495	7.40%	20495	7.25%	20495	7.25%
Windsor Road (North of Herschel Street)	48	12351	1.54%	13571	1.54%	13571	1.54%	13565	1.54%
Windsor Road (North of Chalvey Road)	48	12351	1.54%	13571	1.54%	13571	1.54%	13565	1.54%
Windsor Road (North of Ragstone Road))	48	20241	0.89%	22241	0.89%	22241	0.89%	22231	0.89%
Slough Road	64	10728	0.89%	11788	0.89%	11788	0.89%	11782	0.89%
Yew Tree Road	48	15638	0.81%	17183	0.81%	17183	0.81%	17175	0.81%
Datchet Road	48	15638	0.81%	17183	0.81%	17183	0.81%	17175	0.81%

Link	Speed (km/h)	2018 Baseline		2026					
		AADT	HGV %	Do Minimum		Do Something Development Scenario 1b		Do Something Development Scenario 2b	
				AADT	%HGV	AADT	%HGV	AADT	%HGV
Tuns Lane	48	36250	3.93%	39832	3.93%	39837	3.93%	39825	3.93%
Farnham Road	48	14610	2.77%	16053	2.77%	16059	2.77%	16058	2.77%
Bath Road (West of Tuns Lane)	48	15729	2.15%	17283	2.15%	17289	2.15%	17287	2.14%
Bath Road (West of Stoke Poges Lane)	48	35526	2.15%	39036	2.15%	39042	2.15%	39030	2.15%
Bath Road (East of Stoke Poges Lane)	48	28000	1.23%	30766	1.23%	30772	1.23%	30764	1.23%
Wellington Street (West of Stoke Road) Eastbound	48	21279	2.53%	23519	2.51%	23558	2.67%	23565	2.69%
Wellington Street (West of Stoke Road) Westbound	48	11662	3.46%	12993	3.41%	13039	3.72%	13039	3.77%
M4	112	144249	6.99%	158501	6.99%	158501	6.99%	158429	6.99%
Broadmark Road	32	5858	1.93%	6416	1.93%	6816	1.79%	6809	1.79%
Petersfield Avenue	48	5667	1.71%	6208	1.71%	6208	1.71%	6208	1.71%

Table 6.2 Traffic Data – Scenario 2

Link	Speed (km/h)	2018 Baseline		2026					
		AADT	HGV %	Do Minimum		Do Something Development Scenario 1b		Do Something Development Scenario 2b	
				AADT	%HGV	AADT	%HGV	AADT	%HGV
Wexham Road	48	15357	1.04%	17392	1.11%	17402	1.14%	17393	1.16%
Wellington Street (West of HTC Roundabout) Eastbound	48	21583	2.53%	23551	2.64%	23558	2.67%	23565	2.69%
Wellington Street (West of HTC Roundabout) Westbound	48	11829	3.46%	13020	3.62%	13039	3.72%	13039	3.77%
Wellington Street (East of HTC Roundabout) Eastbound	48	15319	3.92%	16983	3.87%	17024	3.89%	17031	3.89%
Wellington Street (East of HTC Roundabout) Westbound	48	10810	4.11%	12081	4.03%	12126	4.06%	12133	4.06%
Sussex Place	48	36409	2.28%	40724	2.30%	40787	2.31%	40786	2.33%
Wellington Street (East of Uxbridge Road) Eastbound	48	19925	2.03%	22203	2.05%	22273	2.08%	22275	2.10%
Wellington Street (East of Uxbridge Road) Westbound	48	16484	2.53%	18521	2.55%	18514	2.58%	18512	2.60%
London Road	48	36409	2.28%	40724	2.30%	40787	2.31%	40786	2.33%
Uxbridge Road (North of Wellington Street) Southbound	48	13961	1.72%	15093	1.82%	15099	1.86%	15104	1.88%
Uxbridge Road (North of Wellington Street) Northbound	48	14662	1.68%	15847	1.77%	15856	1.82%	15859	1.84%
Uxbridge Road (North of Victoria Road) Southbound	48	13961	1.72%	15093	1.82%	15099	1.86%	15104	1.88%
Uxbridge Road (North of Victoria Road) Northbound	48	14662	1.68%	15847	1.77%	15856	1.82%	15859	1.84%
Uxbridge Road (North of Broadmark Road) Southbound	48	13601	1.51%	15137	1.59%	15128	1.63%	15124	1.66%
Uxbridge Road (North of Broadmark Road) Northbound	48	13478	1.66%	14948	1.74%	15018	1.78%	15021	1.80%
Stoke Road	48	18418	7.53%	20495	7.40%	20495	7.25%	20495	7.25%
William Street	48	18418	7.53%	20495	7.40%	20495	7.25%	20495	7.25%
Windsor Road (North of Herschel Street)	48	12351	1.54%	13565	1.54%	13565	1.54%	13565	1.54%
Windsor Road (North of Chalvey Road)	48	12351	1.54%	13565	1.54%	13565	1.54%	13565	1.54%
Windsor Road (North of Ragstone Road))	48	20241	0.89%	22231	0.89%	22231	0.89%	22231	0.89%
Slough Road	64	10728	0.89%	11782	0.89%	11782	0.89%	11782	0.89%
Yew Tree Road	48	15638	0.81%	17175	0.81%	17175	0.81%	17175	0.81%
Datchet Road	48	15638	0.81%	17175	0.81%	17175	0.81%	17175	0.81%

Link	Speed (km/h)	2018 Baseline		2026					
		AADT	HGV %	Do Minimum		Do Something Development Scenario 1b		Do Something Development Scenario 2b	
				AADT	%HGV	AADT	%HGV	AADT	%HGV
Tuns Lane	48	36250	3.93%	39813	3.93%	39819	3.93%	39825	3.93%
Farnham Road	48	14610	2.77%	16046	2.77%	16052	2.77%	16058	2.77%
Bath Road (West of Tuns Lane)	48	15729	2.15%	17275	2.15%	17281	2.15%	17287	2.14%
Bath Road (West of Stoke Poges Lane)	48	35526	2.15%	39018	2.15%	39024	2.15%	39030	2.15%
Bath Road (East of Stoke Poges Lane)	48	28000	1.23%	30752	1.23%	30758	1.23%	30764	1.23%
Wellington Street (West of Stoke Road) Eastbound	48	21279	2.53%	23551	2.64%	23558	2.67%	23565	2.69%
Wellington Street (West of Stoke Road) Westbound	48	11662	3.46%	13020	3.62%	13039	3.72%	13039	3.77%
M4	112	144249	6.99%	158429	6.99%	158429	6.99%	158429	6.99%
Broadmark Road	32	5858	1.93%	6775	1.83%	6816	1.79%	6809	1.79%
Petersfield Avenue	48	5667	1.71%	6208	1.71%	6208	1.71%	6208	1.71%

6.2 Background Concentrations

Defra Published Background Concentrations for 2018

Background concentrations below were obtained from the UK National Air Quality Information Archive database based on the National Grid Co-ordinates of 1 x 1 km grid squares nearest to the development site. In May 2019, Defra issued revised 2018 based background maps for nitrogen oxide (NO_X), NO_2, PM_{10} and $PM_{2.5}$. The mapped background concentrations are summarised in Table 6.3.

Table 6.3 Published Background Air Quality Levels (µg/m³)

Receptor Location	2018			
	NO_2	NO_x	PM_{10}	$PM_{2.5}$
Diffusion Tube Monitoring Locations				
SLO 5	23.10	35.52	16.45	11.55
SLO 6	23.10	35.52	16.45	11.55
SLO 23*	25.43	40.51	16.95	11.76
SLO 24*	24.97	38.63	17.69	12.17
SLO 25*	24.97	38.63	17.69	12.17
SLO 26	23.10	35.52	16.45	11.55
SLO 29	23.10	35.52	16.45	11.55
SLO 33	23.10	35.52	16.45	11.55
SLO 37	25.49	40.91	16.91	11.86
SLO 38	23.10	35.52	16.45	11.55
SLO 40	23.10	35.52	16.45	11.55
SLO 43	25.43	40.51	16.95	11.76
SLO 44	29.55	51.04	18.16	12.38
SLO 46	25.89	40.53	17.83	12.29
SLO 47	25.49	40.91	16.91	11.86
SLO 48*	25.89	40.53	17.83	12.29
SLO 49	25.89	40.53	17.83	12.29
SLO 50	24.97	38.63	17.69	12.17
SLH10	23.10	35.52	16.45	11.55
SLH12	25.43	40.51	16.95	11.76
Modelled Receptor Locations				
R1	23.10	35.52	16.45	11.55
R2	22.70	35.16	16.32	11.48
R3	23.10	35.52	16.45	11.55
R4	23.10	35.52	16.45	11.55
R5	23.10	35.52	16.45	11.55
R6	25.89	40.53	17.83	12.29
R7	25.43	40.51	16.95	11.76
R8	25.43	40.51	16.95	11.76
R9	24.97	38.63	17.69	12.17
R10	24.97	38.63	17.69	12.17

Receptor Location	2018			
	NO_2	NO_x	PM_{10}	$PM_{2.5}$
R11	24.97	38.63	17.69	12.17
R12	24.97	38.63	17.69	12.17
R13	25.89	40.53	17.83	12.29
R14	23.10	35.52	16.45	11.55
R15	25.43	40.51	16.95	11.76
R16	25.43	40.51	16.95	11.76
R17	25.49	40.91	16.91	11.86
R18	25.49	40.91	16.91	11.86
R19	29.55	51.04	18.16	12.38
R20	22.70	35.16	16.32	11.48
R21	22.70	35.16	16.32	11.48
R22	23.10	35.52	16.45	11.55
PR1	29.55	51.04	18.16	12.38
PR2	29.55	51.04	18.16	12.38
PR3	29.55	51.04	18.16	12.38
PR4	29.55	51.04	18.16	12.38
PR5	22.70	35.16	16.32	11.48
PR6	29.55	51.04	18.16	12.38

Local Authority Monitoring Background

In areas where it has been considered that the Defra published background maps are unrepresentative of local air quality background contributions, alternate background data have been utilised where appropriate. Where considered more representative, LA NO_2 monitoring data diffusion tubes have been used. Table 6.4 below shows the data used to represent the background air quality conditions at existing receptor locations within the detailed modelling assessment.

As the Defra background maps have predicted unrepresentatively low NO_2 and NO_x background concentrations at the closest monitoring locations, background NO_x and NO_2 concentrations have been considered individually across the model area for receptors where similar background contributions are expected based on the LA monitored NO_2 at diffusion tubes shown in Table 6.4. As these diffusion tubes monitor roadside NO_2, to determine the likely background NO_2 for each area, the unadjusted baseline ADMS model output NO_2 for each monitoring location has been subtracted from the monitored NO_2. A review of the potential background contributions (monitored results less modelled traffic contribution) in each area has been undertaken to determine the most appropriate background levels (accounting for variation in monitored levels due to micro-siting and local non-traffic sources).

Table 6.4 Roadside Modelled Contribution at Tubes

Tube	Monitored NO_2 (µg/m³)	Modelled Traffic Contribution NO_2 (µg/m³)	Non-Traffic NO_2 (µg/m³)
SLO 5	34.40	14.52	23.10
SLO 23*	29.50	8.46	25.43
SLO 24*	32.70	12.25	24.97
SLO 25*	33.20	11.18	24.97
SLO 26	31.50	11.61	23.10
SLO 29	52.70	25.99	23.10
SLO 33	28.70	8.63	23.10
SLO 37	39.90	10.05	25.49
SLO 38	32.30	9.00	23.10
SLO 40	38.60	13.55	23.10
SLO 43	34.00	8.37	25.43
SLO 44	31.90	9.38	23.10
SLO 46	40.10	9.72	25.89
SLO 47	35.20	12.36	25.49
SLO 48*	28.10	4.52	25.89
SLO 49	4<0.01	14.12	25.89
SLO 50	45.80	18.55	25.89
SLH10	36.00	11.40	23.10
SLH12	42.00	14.51	25.43

Outputs from the ADMS Roads model are provided as predicted road traffic contribution NO_x emissions. These are converted into predicted roadside contribution NO_2 exposure at the relevant receptor locations based on the updated approach to deriving NO_2 from NO_x for road traffic sources published in Local Air Quality Management TG16. The calculation was derived using the NO_x to NO_2 worksheet in the online LAQM tools website hosted by Defra. Table 6.6 summarises the final model/monitored data correlation following the application of the model correction factor.

Table 6.5 Background Concentrations Used

Receptor location	Background Source	Background Concentration Utilised	
		NO_2	NO_x
Diffusion Tube Monitoring Locations			
SLO 5	Defra	23.10	35.52
SLO 23*	Defra	25.43	40.51
SLO 24*	Defra	24.97	38.63
SLO 25*	Defra	24.97	38.63
SLO 26	Defra	23.10	35.52
SLO 29	Defra	23.10	35.52
SLO 33	Defra	23.10	35.52
SLO 37	Defra	25.49	40.91
SLO 38	Defra	23.10	35.52

Receptor location	Background Source	Background Concentration Utilised	
		NO_2	NO_x
SLO 40	Defra	23.10	35.52
SLO 43	Defra	25.43	40.51
SLO 44	Defra	23.10	35.52
SLO 46	Defra	25.89	40.53
SLO 47	Defra	25.49	40.91
SLO 48*	Defra	25.89	40.53
SLO 49	Defra	25.89	40.53
SLO 50	Defra	25.89	40.53
SLH10	Defra	23.10	35.52
SLH12	Defra	25.43	40.51
Receptor Locations			
R1	Defra	23.10	35.52
R2	Defra	25.43	40.51
R3	Defra	23.10	35.52
R4	Defra	23.10	35.52
R5	Defra	23.10	35.52
R6	Defra	25.89	40.53
R7	Defra	25.43	40.51
R8	Defra	25.43	40.51
R9	Defra	24.97	38.63
R10	Defra	24.97	38.63
R11	Defra	24.97	38.63
R12	Defra	24.97	38.63
R13	Defra	25.89	40.53
R14	Defra	23.10	35.52
R15	Defra	25.43	40.51
R16	Defra	25.43	40.51
R17	Defra	25.49	40.91
R18	Defra	25.49	40.91
R19	Defra	29.55	51.04
R20	Defra	22.70	35.16
R21	Defra	22.70	35.16
R22	Defra	23.10	35.52
Proposed Receptor Locations			
PR1	Defra	29.55	51.04
PR2	Defra	29.55	51.04
PR3	Defra	29.55	51.04
PR4	Defra	29.55	51.04
PR5	Defra	22.70	35.16
PR6	Defra	29.55	51.04
Ecological Receptor Locations			
E1	APIS	-	45.5
E2	APIS	-	27.03
E3	APIS	-	44.70
E4	APIS	-	42.72

Receptor location	Background Source	Background Concentration Utilised	
		NO_2	NO_x
E5	APIS	-	36.06
E6	APIS	-	32.61
E7	APIS	-	33.66
E8	APIS	-	21.85

6.3 Model Verification

Model verification involves the comparison of modelled data to monitored data in order to gain the best possible representation of current pollutant concentrations for the assessment years. The verification process is in general accordance with that contained in Section 7 of the TG16 guidance note and uses the most recently available diffusion tube monitoring data to best represent this.

The verification process consists of using the monitoring data and the published background air quality data in the UK National Air Quality Information Archive to calculate the road traffic contribution of NO_X at the monitoring locations. Outputs from the ADMS Roads model are provided as predicted road traffic contribution NO_X emissions. These are converted into predicted roadside contribution NO_2 exposure at the relevant receptor locations based on the updated approach to deriving NO_2 from NO_X for road traffic sources published in Local Air Quality Management TG16. The calculation was derived using the NO_X to NO_2 worksheet in the online LAQM tools website hosted by Defra. Table 6.6 summarises the final model/monitored data correlation following the application of the model correction factor.

Table 6.6 Comparison of Roadside Modelling & Monitoring Results for NO_2

Tube location	NO_2 µg/m^3		
	Monitored NO_2	Modelled NO_2	Difference (%)
SLO 5	34.40	37.62	9.35
SLO 23*	29.50	33.89	14.88
SLO 24*	32.70	37.21	13.80
SLO 25*	33.20	36.15	8.87
SLO 26	31.50	34.71	10.19
SLO 29	52.70	49.08	-6.87
SLO 33	28.70	31.72	10.53
SLO 37	39.90	35.54	-10.94
SLO 38	32.30	32.10	-0.63
SLO 40	38.60	36.65	-5.06
SLO 43	34.00	33.80	-0.59
SLO 44	31.90	32.47	1.80
SLO 46	40.10	35.61	-11.20
SLO 47	35.20	37.85	7.53
SLO 48*	28.10	30.41	8.20
SLO 49	4<0.01	4<0.01	<0.01
SLO 50	45.80	44.43	-2.99
SLH10	36.00	34.50	-4.16

Tube location	NO_2 µg/m³		
	Monitored NO_2	Modelled NO_2	Difference (%)
SLH12	42.00	39.94	-4.90
*Within AQMA			

The final model produced data at the monitoring locations to within 25% of the monitoring results, as the requirement by TG16 guidance.

The final verification model correlation coefficient (representing the model uncertainty) is 0.99[1]. This figure demonstrates that the model predictions were in line with the road traffic emissions at the monitoring locations.

6.4 Summary of Model Inputs

Table 6.7 Summary of ADMS Roads Model Inputs

Parameter	Description	Input Value
Chemistry	A facility within ADMS-Roads to calculate the chemical reactions in the atmosphere between Nitric Oxide (NO), NO_2, Ozone (O_3) and Volatile organic compounds (VOCs).	No atmospheric chemistry parameters included
Meteorology	Representative meteorological data from a local source	**Heathrow Airport Meteorological Station**, hourly sequential data
Surface Roughness	A setting to define the surface roughness of the model area based upon its location.	**1m** representing a typical surface roughness for **Cities, Woodlands**.
Latitude	Allows the location of the model area to be set	United Kingdom = **51.6**
Monin-Obukhov Length	This allows a measure of the stability of the atmosphere within the model area to be specified depending upon its character.	Cities and Large Towns = **30m.**
Elevation of Road	Allows the height of the road link above ground level to be specified.	All road links were set at ground level = **0m**.
Road Width	Allows the width of the road link to be specified.	Road width used depended on data obtained from OS map data for the specific road link
Topography	This enables complex terrain data to be included within the model in order to account for turbulence and plume spread effects of topography	No topographical information used
Time Varied Emissions	This enables daily, weekly or monthly variations in emissions to be applied to road sources	No time varied emissions used
Road Type	Allows the effect of different types of roads to be assessed.	**Urban (Not London)** settings were used for the relevant links
Road Speeds	Enables individual road speeds to be added for each road link	Based on national speed limits
Canyon Height	Allows the model to take account turbulent flow patterns occurring inside a street with relatively tall buildings on both sides, known as a "street canyon".	No canyons were utilised.
Road Source Emissions	Road source emission rates are calculated from traffic flow data using the in-built EFT database of traffic emission factors.	The **EFT** Version **9.0 (May 2019)** dataset was used.
Year	Predicted EFT emissions rates depend on the year of emission.	**2018** data for verification and baseline operational phase assessment **2026** data for the operational phase assessment.

[1] This was achieved by applying a model correction factor of 1.44 to roadside predicted NO_X concentrations before converting to NO_2

6.5 ADMS Modelling Results

Traffic Assessment

The ADMS Model has predicted concentrations of NO_2, PM_{10} and $PM_{2.5}$ at relevant receptor locations adjacent to roads likely to be affected by the development, as summarised in the following tables. Only receptors close to roads where there is predicted to be a change in emissions have been assessed.

For the operational year of 2026, assessment of the effects of emissions from the proposed traffic associated with the scheme, has been undertaken using the EFT 2026 emissions rates which take into account, the rate of reduction in emissions from road vehicles into the future with the following factors

- 2018 Baseline = Existing baseline conditions;
- 2026 "Do Minimum" = Baseline conditions with Committed Development (2026 Baseline 1b);
- 2026 "Do Minimum" = Baseline conditions with Committed Development (2026 Baseline 2b); and,
- 2026 "Do Something" = Baseline conditions + Committed Development + Proposed Development: Development Scenario 1b.
- 2026 "Do Something" = Baseline conditions + Committed Development + Proposed Development: Development Scenario 2b.

Outline planning application (all matters reserved except for principal points of access), to be implemented in phases, for mixed use development comprising:

a) Demolition of existing buildings and structures and preparatory works (including remediation) and access from Wexham Road;

b) up to 1,000 residential dwellings; along with flexible commercial uses including all or some of the following use classes A1, A2, A3, D1 and D2; car parking; new public spaces and landscaping; and vehicular and pedestrian access; and

c) the provision of commercial floorspace including all or some of the following use classes B2, B8 and sui generis data centre (including ancillary B1a office space and associated plant and infrastructure provision); car parking, landscaping and vehicular and pedestrian access."

Scenario One Assessment Results

Nitrogen Dioxide

Table 6.8 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.8 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 1b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	33.14	33.17	0.03
R2	Hazelmere Road	26.62	25.17	25.19	0.02
R3	Yew Tree Road	36.63	31.88	31.89	0.01
R4	Wexham Road	35.56	31.23	31.37	0.14
R5	Apsley House	32.82	29.37	29.39	0.02
R6	Cornwall House	34.41	31.42	31.43	0.01
R7	Claycoats School	30.64	28.77	28.77	<0.01
R8	Windmill Care Centre	34.14	31.06	31.06	<0.01
R9	Tuns Lane	33.76	30.61	30.62	0.01
R10	Paxton Avenue	42.80	36.49	36.49	<0.01
R11	Spackmans Way	41.90	35.88	35.89	0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	30.03	30.03	<0.01
R13	16 John Taylor Court	34.72	31.56	31.56	<0.01
R14	19 Farnham Road	27.57	25.95	25.95	<0.01
R15	49 Stoke Road	36.91	32.85	32.86	0.01
R16	50 Stoke Road	29.77	28.21	28.21	<0.01
R17	100 Wexham Road	31.07	29.08	29.08	<0.01
R18	98 Broadmark Road	29.79	28.24	28.25	0.01
R19	25 Cannon Gate	34.51	32.74	32.83	0.09
R20	27 Clifton Road	29.20	26.83	26.91	0.08
R21	Windsor Road	25.74	24.65	24.68	0.03
R22	Saint Mary's Church of England Primary School	32.11	28.94	28.97	0.03
PR1	Proposed Receptor	-	-	37.60	-
PR2	Proposed Receptor	-	-	33.90	-
PR3	Proposed Receptor	-	-	32.13	-
PR4	Proposed Receptor	-	-	31.77	-
PR5	Proposed Receptor	-	-	32.64	-
PR6	Proposed Receptor	-	-	31.70	-
PR7	Proposed Receptor	-	-	31.56	-
PR8	Proposed Receptor	-	-	31.67	-
Annual Mean AQO: 40 µg/m³					

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table 6.8, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.14 µg/m³ at Wexham Road (R4).

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.9.

Table 6.9 Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 1b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	0.03	0.07	0%	76-94% of AQO	Negligible
R2	0.02	0.05	0%	≤75% of AQO	Negligible
R3	0.01	0.02	0%	76-94% of AQO	Negligible
R4	0.14	0.35	0%	76-94% of AQO	Negligible
R5	0.02	0.05	0%	≤75% of AQO	Negligible
R6	0.01	0.02	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	0.01	0.02	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	76-94% of AQO	Negligible
R11	0.01	0.02	0%	76-94% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	0.01	0.02	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	0.01	0.02	0%	≤75% of AQO	Negligible
R19	0.09	0.22	0%	76-94% of AQO	Negligible
R20	0.08	0.20	0%	≤75% of AQO	Negligible
R21	0.03	0.07	0%	≤75% of AQO	Negligible
R22	0.03	0.07	0%	≤75% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table 6.10 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.10 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations – Development Scenario 1b

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	18.98	19.01	19.02	0.01
R2	Hazelmere Road	16.97	16.97	16.98	<0.01
R3	Yew Tree Road	18.64	18.66	18.67	<0.01
R4	Wexham Road	18.63	18.68	18.72	0.04
R5	Apsley House	17.98	17.99	18.00	<0.01
R6	Cornwall House	19.29	19.32	19.33	<0.01
R7	Claycoats School	17.80	17.81	17.81	<0.01
R8	Windmill Care Centre	18.51	18.54	18.54	<0.01
R9	Tuns Lane	19.01	19.01	19.01	<0.01
R10	Paxton Avenue	20.07	19.98	19.98	<0.01
R11	Spackmans Way	19.82	19.72	19.72	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.31	18.31	<0.01
R13	Windsor Road	19.11	19.11	19.11	<0.01
R14	Saint Mary's Church of England Primary School	17.10	17.10	17.10	<0.01
R15	16 John Taylor Court	18.79	18.80	18.80	<0.01
R16	19 Farnham Road	17.65	17.66	17.66	<0.01
R17	49 Stoke Road	17.75	17.76	17.77	<0.01
R18	50 Stoke Road	17.55	17.56	17.56	<0.01
R19	100 Wexham Road	19.10	19.12	19.15	0.03
R20	98 Broadmark Road	17.39	17.39	17.41	0.02
R21	25 Cannon Gate	16.89	16.90	16.91	0.01
R22	27 Clifton Road	17.99	18.02	18.03	0.01
PR1	Proposed Receptor	-	-	19.79	-
PR2	Proposed Receptor	-	-	18.96	-
PR3	Proposed Receptor	-	-	18.58	-
PR4	Proposed Receptor	-	-	18.51	-
PR5	Proposed Receptor	-	-	18.70	-
PR6	Proposed Receptor	-	-	18.50	-
PR7	Proposed Receptor	-	-	18.48	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table 6.10, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is 0.04 µg/m³ at Wexham Road (R4).

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.11.

Table 6.11 Impact Description of Effects at Key Receptors – Development Scenario 1b

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	0.01	0.02	0%	≤75% of AQO	Negligible
R2	<0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.04	0.09	0%	≤75% of AQO	Negligible
R5	<0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.03	0.07	0%	≤75% of AQO	Negligible
R20	0.02	0.05	0%	≤75% of AQO	Negligible
R21	0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.01	0.03	0%	≤75% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table 6.12 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.12 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations – Development Scenario 1b

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	13.08	13.01	13.01	<0.01
R2	Hazelmere Road	11.87	11.85	11.85	<0.01

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R3	Yew Tree Road	12.88	12.81	12.81	<0.01
R4	Wexham Road	12.86	12.81	12.83	0.02
R5	Apsley House	12.48	12.43	12.43	<0.01
R6	Cornwall House	13.16	13.13	13.13	<0.01
R7	Claycoats School	12.27	12.25	12.25	<0.01
R8	Windmill Care Centre	12.69	12.65	12.65	<0.01
R9	Tuns Lane	12.97	12.92	12.92	<0.01
R10	Paxton Avenue	13.67	13.50	13.50	<0.01
R11	Spackmans Way	13.53	13.36	13.36	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.55	12.55	<0.01
R13	Windsor Road	13.08	13.02	13.02	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.92	11.93	<0.01
R15	16 John Taylor Court	12.87	12.81	12.81	<0.01
R16	19 Farnham Road	12.18	12.16	12.16	<0.01
R17	49 Stoke Road	12.37	12.34	12.34	<0.01
R18	50 Stoke Road	12.25	12.23	12.23	<0.01
R19	100 Wexham Road	12.93	12.92	12.93	0.02
R20	98 Broadmark Road	12.12	12.09	12.10	0.01
R21	25 Cannon Gate	11.81	11.80	11.81	<0.01
R22	27 Clifton Road	12.47	12.44	12.45	0.01
PR1	Proposed Receptor	-	-	13.34	-
PR2	Proposed Receptor	-	-	12.86	-
PR3	Proposed Receptor	-	-	12.63	-
PR4	Proposed Receptor	-	-	12.59	-
PR5	Proposed Receptor	-	-	12.70	-
PR6	Proposed Receptor	-	-	12.59	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table 6.12, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is 0.02 µg/m³ at Wexham Road (R4) and 100 Wexham Road (R19).

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.13.

Table 6.13 Impact Description of Effects at Key Receptors – Development Scenario 1b

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	0.02	0%	≤75% of AQO	Negligible
R2	<0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.02	0.08	0%	≤75% of AQO	Negligible
R5	<0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.02	0.06	0%	≤75% of AQO	Negligible
R20	0.01	0.05	0%	≤75% of AQO	Negligible
R21	<0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.01	0.02	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Nitrogen Dioxide

Table 6.14 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.14 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 2b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	33.14	33.17	0.03
R2	Hazelmere Road	26.62	25.17	25.19	0.02
R3	Yew Tree Road	36.63	31.88	31.89	0.01
R4	Wexham Road	35.56	31.23	31.37	0.14
R5	Apsley House	32.82	29.37	29.39	0.02
R6	Cornwall House	34.41	31.42	31.43	0.01
R7	Claycoats School	30.64	28.77	28.77	<0.01
R8	Windmill Care Centre	34.14	31.06	31.06	<0.01
R9	Tuns Lane	33.76	30.61	30.61	<0.01
R10	Paxton Avenue	42.80	36.49	36.49	<0.01
R11	Spackmans Way	41.90	35.88	35.88	<0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	30.03	30.03	<0.01
R13	Windsor Road	34.72	31.56	31.56	<0.01
R14	Saint Mary's Church of England Primary School	27.57	25.95	25.95	<0.01
R15	16 John Taylor Court	36.91	32.85	32.85	<0.01
R16	19 Farnham Road	29.77	28.21	28.21	<0.01
R17	49 Stoke Road	31.07	29.08	29.08	<0.01
R18	50 Stoke Road	29.79	28.24	28.25	0.01
R19	100 Wexham Road	34.51	32.74	32.83	0.09
R20	98 Broadmark Road	29.20	26.83	26.91	0.08
R21	25 Cannon Gate	25.74	24.65	24.68	0.03
R22	27 Clifton Road	32.11	28.94	28.97	0.03
PR1	Proposed Receptor	-	-	34.47	-
PR2	Proposed Receptor	-	-	32.15	-
PR3	Proposed Receptor	-	-	31.07	-
PR4	Proposed Receptor	-	-	30.85	-
PR5	Proposed Receptor	-	-	25.69	-
PR6	Proposed Receptor	-	-	31.32	-
PR7	Proposed Receptor	-	-	31.58	-
PR8	Proposed Receptor	-	-	31.68	-
Annual Mean AQO: 40 µg/m³					

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table 6.14, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.14 µg/m³ at Wexham Road (R4).

All proposed receptors predict NO_2 concentrations of below 60 µg/m^3 in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.15.

Table 6.15 Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 2b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	0.03	0.07	0%	76-94% of AQO	Negligible
R2	0.02	0.05	0%	≤75% of AQO	Negligible
R3	0.01	0.02	0%	76-94% of AQO	Negligible
R4	0.14	0.35	0%	76-94% of AQO	Negligible
R5	0.02	0.05	0%	≤75% of AQO	Negligible
R6	0.01	0.02	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	76-94% of AQO	Negligible
R11	<0.01	<0.01	0%	76-94% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	0.01	0.02	0%	≤75% of AQO	Negligible
R19	0.09	0.22	0%	76-94% of AQO	Negligible
R20	0.08	0.20	0%	≤75% of AQO	Negligible
R21	0.03	0.07	0%	≤75% of AQO	Negligible
R22	0.03	0.07	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table 6.16 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.16 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations – Development Scenario 2b

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	19.01	19.02	0.01
R2	Hazelmere Road	26.62	16.97	16.98	0.01
R3	Yew Tree Road	36.63	18.66	18.67	0.01
R4	Wexham Road	35.56	18.68	18.72	0.04
R5	Apsley House	32.82	17.99	18.00	0.01
R6	Cornwall House	34.41	19.32	19.33	<0.01
R7	Claycoats School	30.64	17.81	17.81	<0.01
R8	Windmill Care Centre	34.14	18.54	18.54	<0.01
R9	Tuns Lane	33.76	19.01	19.01	<0.01
R10	Paxton Avenue	42.80	19.98	19.98	<0.01
R11	Spackmans Way	41.90	19.72	19.72	<0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	18.31	18.31	<0.01
R13	Windsor Road	34.72	19.11	19.11	<0.01
R14	Saint Mary's Church of England Primary School	27.57	17.10	17.10	<0.01
R15	16 John Taylor Court	36.91	18.80	18.80	<0.01
R16	19 Farnham Road	29.77	17.66	17.66	<0.01
R17	49 Stoke Road	31.07	17.76	17.77	<0.01
R18	50 Stoke Road	29.79	17.56	17.56	<0.01
R19	100 Wexham Road	34.51	19.12	19.15	0.03
R20	98 Broadmark Road	29.20	17.39	17.41	0.02
R21	25 Cannon Gate	25.74	16.90	16.91	0.01
R22	27 Clifton Road	32.11	18.02	18.03	0.01
PR1	Proposed Receptor	-	-	19.69	-
PR2	Proposed Receptor	-	-	18.91	-
PR3	Proposed Receptor	-	-	18.54	-
PR4	Proposed Receptor	-	-	18.48	-
PR5	Proposed Receptor	-	-	17.17	-
PR6	Proposed Receptor	-	-	18.65	-
PR7	Proposed Receptor	-	-	18.48	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table 6.16, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is 0.04 µg/m³ at Wexham Road (R4).

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.17.

Table 6.17 Impact Description of Effects at Key Receptors – Development Scenario 2b

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	0.01	0.02	0%	≤75% of AQO	Negligible
R2	0.01	0.01	0%	≤75% of AQO	Negligible
R3	0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.04	0.09	0%	≤75% of AQO	Negligible
R5	0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.03	0.07	0%	≤75% of AQO	Negligible
R20	0.02	0.05	0%	≤75% of AQO	Negligible
R21	0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.01	0.03	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table 6.18 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.18 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations - Development Scenario 2b

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	13.08	13.01	13.01	0.01
R2	Hazelmere Road	11.87	11.85	11.85	<0.01
R3	Yew Tree Road	12.88	12.81	12.81	<0.01
R4	Wexham Road	12.86	12.81	12.83	0.02
R5	Apsley House	12.48	12.43	12.43	<0.01
R6	Cornwall House	13.16	13.13	13.13	<0.01
R7	Claycoats School	12.27	12.25	12.25	<0.01
R8	Windmill Care Centre	12.69	12.65	12.65	<0.01
R9	Tuns Lane	12.97	12.92	12.92	<0.01
R10	Paxton Avenue	13.67	13.50	13.50	<0.01
R11	Spackmans Way	13.53	13.36	13.36	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.55	12.55	<0.01
R13	Windsor Road	13.08	13.02	13.02	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.92	11.93	<0.01
R15	16 John Taylor Court	12.87	12.81	12.81	<0.01
R16	19 Farnham Road	12.18	12.16	12.16	<0.01
R17	49 Stoke Road	12.37	12.34	12.34	<0.01
R18	50 Stoke Road	12.25	12.23	12.23	<0.01
R19	100 Wexham Road	12.93	12.92	12.93	0.02
R20	98 Broadmark Road	12.12	12.09	12.10	0.01
R21	25 Cannon Gate	11.81	11.80	11.81	<0.01
R22	27 Clifton Road	12.47	12.44	12.45	0.01
PR1	Proposed Receptor	-	-	13.23	-
PR2	Proposed Receptor	-	-	12.80	-
PR3	Proposed Receptor	-	-	12.59	-
PR4	Proposed Receptor	-	-	12.56	-
PR5	Proposed Receptor	-	-	11.96	-
PR6	Proposed Receptor	-	-	12.65	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table 6.18, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is 0.02 µg/m³ at Wexham Road (R4) and 100 Wexham Road (R19).

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.19.

Table 6.19 Impact Description of Effects at Key Receptors - Development Scenario 2b

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	0.01	0.02	0%	≤75% of AQO	Negligible
R2	<0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.02	0.09	0%	≤75% of AQO	Negligible
R5	<0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.02	0.06	0%	≤75% of AQO	Negligible
R20	0.01	0.04	0%	≤75% of AQO	Negligible
R21	<0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.01	0.02	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Scenario Two Assessment Results

Nitrogen Dioxide

Table 6.20 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.20 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 1b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	33.16	33.17	0.01
R2	Hazelmere Road	26.62	25.18	25.19	0.01
R3	Yew Tree Road	36.63	31.89	31.89	<0.01
R4	Wexham Road	35.56	31.33	31.37	0.04
R5	Apsley House	32.82	29.38	29.39	0.01
R6	Cornwall House	34.41	31.42	31.43	0.01
R7	Claycoats School	30.64	28.77	28.77	<0.01
R8	Windmill Care Centre	34.14	31.06	31.06	<0.01
R9	Tuns Lane	33.76	30.61	30.62	0.01
R10	Paxton Avenue	42.80	36.49	36.49	<0.01
R11	Spackmans Way	41.90	35.88	35.89	0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	30.03	30.03	<0.01
R13	Windsor Road	34.72	31.56	31.56	<0.01
R14	Saint Mary's Church of England Primary School	27.57	25.95	25.95	<0.01
R15	16 John Taylor Court	36.91	32.85	32.86	0.01
R16	19 Farnham Road	29.77	28.21	28.21	<0.01
R17	49 Stoke Road	31.07	29.08	29.08	<0.01
R18	50 Stoke Road	29.79	28.25	28.25	<0.01
R19	100 Wexham Road	34.51	32.81	32.83	0.02
R20	98 Broadmark Road	29.20	26.88	26.91	0.03
R21	25 Cannon Gate	25.74	24.67	24.68	0.01
R22	27 Clifton Road	32.11	28.96	28.97	0.01
PR1	Proposed Receptor	-	-	34.47	-
PR2	Proposed Receptor	-	-	32.15	-
PR3	Proposed Receptor	-	-	31.07	-
PR4	Proposed Receptor	-	-	30.85	-
PR5	Proposed Receptor	-	-	25.69	-
PR6	Proposed Receptor	-	-	31.32	-
PR7	Proposed Receptor	-	-	31.58	-
PR8	Proposed Receptor	-	-	31.68	-
Annual Mean AQO: 40 µg/m³					

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table 6.20, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.04 µg/m³ at Wexham Road (R4).

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.21.

Table 6.21 Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 1b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	0.01	0.02	0%	76-94% of AQO	Negligible
R2	0.01	0.02	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	76-94% of AQO	Negligible
R4	0.04	0.10	0%	76-94% of AQO	Negligible
R5	0.01	0.02	0%	≤75% of AQO	Negligible
R6	0.01	0.02	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	0.01	0.02	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	76-94% of AQO	Negligible
R11	0.01	0.02	0%	76-94% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	0.01	0.02	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.02	0.05	0%	76-94% of AQO	Negligible
R20	0.03	0.07	0%	≤75% of AQO	Negligible
R21	0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.01	0.02	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table 6.22 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.22 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations – Development Scenario 1b

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	18.98	19.02	19.02	<0.01
R2	Hazelmere Road	16.97	16.98	16.98	<0.01
R3	Yew Tree Road	18.64	18.67	18.67	<0.01
R4	Wexham Road	18.63	18.71	18.72	0.01
R5	Apsley House	17.98	18.00	18.00	<0.01
R6	Cornwall House	19.29	19.33	19.33	<0.01
R7	Claycoats School	17.80	17.81	17.81	<0.01
R8	Windmill Care Centre	18.51	18.54	18.54	<0.01
R9	Tuns Lane	19.01	19.01	19.01	<0.01
R10	Paxton Avenue	20.07	19.98	19.98	<0.01
R11	Spackmans Way	19.82	19.72	19.72	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.31	18.31	<0.01
R13	Windsor Road	19.11	19.11	19.11	<0.01
R14	Saint Mary's Church of England Primary School	17.10	17.10	17.10	<0.01
R15	16 John Taylor Court	18.79	18.80	18.80	<0.01
R16	19 Farnham Road	17.65	17.66	17.66	<0.01
R17	49 Stoke Road	17.75	17.77	17.77	<0.01
R18	50 Stoke Road	17.55	17.56	17.56	<0.01
R19	100 Wexham Road	19.10	19.14	19.15	0.01
R20	98 Broadmark Road	17.39	17.41	17.41	0.01
R21	25 Cannon Gate	16.89	16.90	16.91	<0.01
R22	27 Clifton Road	17.99	18.03	18.03	<0.01
PR1	Proposed Receptor	-	-	19.69	-
PR2	Proposed Receptor	-	-	18.91	-
PR3	Proposed Receptor	-	-	18.54	-
PR4	Proposed Receptor	-	-	18.48	-
PR5	Proposed Receptor	-	-	17.17	-
PR6	Proposed Receptor	-	-	18.65	-
PR7	Proposed Receptor	-	-	18.48	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table 6.22, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is 0.01 µg/m³ at Wexham Road (R4), 100 Wexham Road (R19) and 98 Broadmark Road (R20).

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.23.

Table 6.23 Impact Description of Effects at Key Receptors – Development Scenario 1b

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.01	0.02	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.01	0.02	0%	≤75% of AQO	Negligible
R20	0.01	0.02	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table 6.24 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.24 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations – Development Scenario 1b

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	13.08	13.01	13.01	<0.01
R2	Hazelmere Road	11.87	11.85	11.85	<0.01
R3	Yew Tree Road	12.88	12.81	12.81	<0.01
R4	Wexham Road	12.86	12.83	12.83	0.01
R5	Apsley House	12.48	12.43	12.43	<0.01
R6	Cornwall House	13.16	13.13	13.13	<0.01
R7	Claycoats School	12.27	12.25	12.25	<0.01
R8	Windmill Care Centre	12.69	12.65	12.65	<0.01
R9	Tuns Lane	12.97	12.92	12.92	<0.01
R10	Paxton Avenue	13.67	13.50	13.50	<0.01
R11	Spackmans Way	13.53	13.36	13.36	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.55	12.55	<0.01
R13	Windsor Road	13.08	13.02	13.02	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.92	11.93	<0.01
R15	16 John Taylor Court	12.87	12.81	12.81	<0.01
R16	19 Farnham Road	12.18	12.16	12.16	<0.01
R17	49 Stoke Road	12.37	12.34	12.34	<0.01
R18	50 Stoke Road	12.25	12.23	12.23	<0.01
R19	100 Wexham Road	12.93	12.93	12.93	<0.01
R20	98 Broadmark Road	12.12	12.09	12.10	<0.01
R21	25 Cannon Gate	11.81	11.81	11.81	<0.01
R22	27 Clifton Road	12.47	12.44	12.45	<0.01
PR1	Proposed Receptor	-	-	13.23	-
PR2	Proposed Receptor	-	-	12.80	-
PR3	Proposed Receptor	-	-	12.59	-
PR4	Proposed Receptor	-	-	12.56	-
PR5	Proposed Receptor	-	-	11.96	-
PR6	Proposed Receptor	-	-	12.65	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table 6.24, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is 0.01 µg/m³ at Wexham Road (R4).

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.25.

Table 6.25 Impact Description of Effects at Key Receptors – Development Scenario 1b

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	<0.01	<0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	0.01	0.02	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	<0.01	0.02	0%	≤75% of AQO	Negligible
R20	<0.01	0.02	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Nitrogen Dioxide

Table 6.26 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.26 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 2b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	33.16	33.17	0.01
R2	Hazelmere Road	26.62	25.18	25.19	0.01

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R3	Yew Tree Road	36.63	31.89	31.89	<0.01
R4	Wexham Road	35.56	31.33	31.37	0.04
R5	Apsley House	32.82	29.38	29.39	0.01
R6	Cornwall House	34.41	31.42	31.43	0.01
R7	Claycoats School	30.64	28.77	28.77	<0.01
R8	Windmill Care Centre	34.14	31.06	31.06	<0.01
R9	Tuns Lane	33.76	30.61	30.61	<0.01
R10	Paxton Avenue	42.80	36.49	36.49	<0.01
R11	Spackmans Way	41.90	35.88	35.88	<0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	30.03	30.03	<0.01
R13	Windsor Road	34.72	31.56	31.56	<0.01
R14	Saint Mary's Church of England Primary School	27.57	25.95	25.95	<0.01
R15	16 John Taylor Court	36.91	32.85	32.85	<0.01
R16	19 Farnham Road	29.77	28.21	28.21	<0.01
R17	49 Stoke Road	31.07	29.08	29.08	<0.01
R18	50 Stoke Road	29.79	28.25	28.25	<0.01
R19	100 Wexham Road	34.51	32.81	32.83	0.02
R20	98 Broadmark Road	29.20	26.88	26.91	0.03
R21	25 Cannon Gate	25.74	24.67	24.68	0.01
R22	27 Clifton Road	32.11	28.96	28.97	0.01
PR1	Proposed Receptor	-	-	34.47	-
PR2	Proposed Receptor	-	-	32.15	-
PR3	Proposed Receptor	-	-	31.07	-
PR4	Proposed Receptor	-	-	30.85	-
PR5	Proposed Receptor	-	-	25.69	-
PR6	Proposed Receptor	-	-	31.32	-
PR7	Proposed Receptor	-	-	31.58	-
PR8	Proposed Receptor	-	-	31.68	-
Annual Mean AQO: 40 µg/m³					

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table 6.26, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.04 µg/m³ at Wexham Road (R4).

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.27.

Table 6.27 Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 2b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.01	0.02	0%	76-94% of AQO	Negligible
R2	0.01	0.02	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	76-94% of AQO	Negligible
R4	0.04	0.10	0%	76-94% of AQO	Negligible
R5	0.01	0.02	0%	≤75% of AQO	Negligible
R6	0.01	0.02	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	76-94% of AQO	Negligible
R11	<0.01	<0.01	0%	76-94% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.02	0.05	0%	76-94% of AQO	Negligible
R20	0.03	0.07	0%	≤75% of AQO	Negligible
R21	0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.01	0.02	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table 6.28 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.28 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations – Development Scenario 2b

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	18.98	19.02	19.02	<0.01
R2	Hazelmere Road	16.97	16.98	16.98	<0.01

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R3	Yew Tree Road	18.64	18.67	18.67	<0.01
R4	Wexham Road	18.63	18.71	18.72	0.01
R5	Apsley House	17.98	18.00	18.00	<0.01
R6	Cornwall House	19.29	19.33	19.33	<0.01
R7	Claycoats School	17.80	17.81	17.81	<0.01
R8	Windmill Care Centre	18.51	18.54	18.54	<0.01
R9	Tuns Lane	19.01	19.01	19.01	<0.01
R10	Paxton Avenue	20.07	19.98	19.98	<0.01
R11	Spackmans Way	19.82	19.72	19.72	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.31	18.31	<0.01
R13	Windsor Road	19.11	19.11	19.11	<0.01
R14	Saint Mary's Church of England Primary School	17.10	17.10	17.10	<0.01
R15	16 John Taylor Court	18.79	18.80	18.80	<0.01
R16	19 Farnham Road	17.65	17.66	17.66	<0.01
R17	49 Stoke Road	17.75	17.77	17.77	<0.01
R18	50 Stoke Road	17.55	17.56	17.56	<0.01
R19	100 Wexham Road	19.10	19.14	19.15	0.01
R20	98 Broadmark Road	17.39	17.41	17.41	0.01
R21	25 Cannon Gate	16.89	16.90	16.91	<0.01
R22	27 Clifton Road	17.99	18.03	18.03	<0.01
PR1	Proposed Receptor	-	-	19.69	-
PR2	Proposed Receptor	-	-	18.91	-
PR3	Proposed Receptor	-	-	18.54	-
PR4	Proposed Receptor	-	-	18.48	-
PR5	Proposed Receptor	-	-	17.17	-
PR6	Proposed Receptor	-	-	18.65	-
PR7	Proposed Receptor	-	-	18.48	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table 6.28, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is 0.01 µg/m³ at Wexham Road (R4), 100 Wexham Road (R19) and 98 Broadmark Road (R20).

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.29.

Table 6.29 Impact Description of Effects at Key Receptors – Development Scenario 2b

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.01	0.03	0%	≤75% of AQO	Negligible
R5	<0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.01	0.02	0%	≤75% of AQO	Negligible
R20	0.01	0.02	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table 6.30 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.30 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations - Development Scenario 2b

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	13.08	13.01	13.01	<0.01
R2	Hazelmere Road	11.87	11.85	11.85	<0.01
R3	Yew Tree Road	12.88	12.81	12.81	<0.01
R4	Wexham Road	12.86	12.83	12.83	0.01
R5	Apsley House	12.48	12.43	12.43	<0.01
R6	Cornwall House	13.16	13.13	13.13	<0.01
R7	Claycoats School	12.27	12.25	12.25	<0.01
R8	Windmill Care Centre	12.69	12.65	12.65	<0.01
R9	Tuns Lane	12.97	12.92	12.92	<0.01
R10	Paxton Avenue	13.67	13.50	13.50	<0.01
R11	Spackmans Way	13.53	13.36	13.36	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.55	12.55	<0.01
R13	Windsor Road	13.08	13.02	13.02	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.92	11.93	<0.01
R15	16 John Taylor Court	12.87	12.81	12.81	<0.01
R16	19 Farnham Road	12.18	12.16	12.16	<0.01
R17	49 Stoke Road	12.37	12.34	12.34	<0.01
R18	50 Stoke Road	12.25	12.23	12.23	<0.01
R19	100 Wexham Road	12.93	12.93	12.93	<0.01
R20	98 Broadmark Road	12.12	12.09	12.10	<0.01
R21	25 Cannon Gate	11.81	11.81	11.81	<0.01
R22	27 Clifton Road	12.47	12.44	12.45	<0.01
PR1	Proposed Receptor	-	-	13.23	-
PR2	Proposed Receptor	-	-	12.80	-
PR3	Proposed Receptor	-	-	12.59	-
PR4	Proposed Receptor	-	-	12.56	-
PR5	Proposed Receptor	-	-	11.96	-
PR6	Proposed Receptor	-	-	12.65	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table 6.30, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is 0.01 µg/m³ at Wexham Road (R4).

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 6.31.

Table 6.31 Impact Description of Effects at Key Receptors - Development Scenario 2b

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	0.01	0.02	0%	≤75% of AQO	Negligible
R5	<0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	<0.01	0.02	0%	≤75% of AQO	Negligible
R20	<0.01	0.01	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

6.6 ADMS Modelling Ecologically Sensitive Receptors Results

Background concentrations at each of the ecologically sensitive sites are determined through a review of the NO_X pollutants published on the APIS website.

The below assessment has been undertaken, for each scenario and traffic flow mix, in accordance with *A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites* (IAQM, 2019).

Scenario 1 – Development Scenario 1b Nitrogen Oxide at Ecological Receptors

Table 6.32 presents a summary of the predicted change in NO_X concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.32 Predicted Annual Average Concentrations of NO_X at Ecological Receptor Locations

Receptor		NO_X (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
E1	Railway Triangle	45.55	43.87	43.87	<0.01
E2	Eton Meadows	35.46	34.58	34.58	<0.01
E3	St Marys Churchyard	46.88	44.55	44.55	<0.01
E4	Upton Court Park	45.20	41.63	41.63	0.01
E5	Langley Park	39.77	38.12	38.16	0.04
E6	Stoke Park	31.35	31.04	31.04	<0.01
E7	Herschel Park	71.46	60.17	60.18	0.01
E8	Burnham Beeches	22.50	22.27	22.27	<0.01
Annual Mean Critical Level for the Protection of Vegetation and Habitats		**30 µg/m³**			
*Located in the AQMA					

As indicated in Table 6.32, the maximum predicted increase in the annual average exposure to NO_X at any ecological receptor, due to changes in traffic movements associated with the development, is 0.04 µg/m³ at Langley Park (E5).

Section 5.5.4.1 of *A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites*', IAQM 2019 states:

Where the assessment indicates that changes in annual mean NOx concentrations within a designated site cannot be dismissed as imperceptible (i.e. an increase of over 0.4 µg/m³) and the NOx critical level is exceeded, then changes in nutrient nitrogen deposition should be calculated as supporting information to further assist in the evaluation of significance.

The maximum predicted increase in the annual average exposure to NO_X is 0.04 µg/m³ at Langley Park, which is less than the 0.40 µg/m³ development contribution stated within the guidance of '*A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites* ', IAQM 2019. It is considered that the effect can therefore be dismissed as imperceptible.

Scenario 1 – Development Scenario 2b Nitrogen Oxide at Ecological Receptors

Table 6.33 presents a summary of the predicted change in NO_X concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.33 Predicted Annual Average Concentrations of NO_X at Ecological Receptor Locations

Receptor		NO_X (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
E1	Railway Triangle	45.55	43.87	43.87	<0.01
E2	Eton Meadows	35.46	34.58	34.58	<0.01
E3	St Marys Churchyard	46.88	44.55	44.55	<0.01
E4	Upton Court Park	45.20	41.63	41.63	<0.01
E5	Langley Park	39.77	38.12	38.16	0.04
E6	Stoke Park	31.35	31.04	31.04	<0.01
E7	Herschel Park	71.46	60.17	60.17	<0.01
E8	Burnham Beeches	22.50	22.27	22.27	<0.01
Annual Mean Critical Level for the Protection of Vegetation and Habitats		**30 µg/m³**			
*Located in the AQMA					

As indicated in Table 6.33, the maximum predicted increase in the annual average exposure to NO_X at any ecological receptor, due to changes in traffic movements associated with the development, is 0.04 µg/m³ at Langley Park (E5).

Section 5.5.4.1 of *A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites*', IAQM 2019 states:

Where the assessment indicates that changes in annual mean NOx concentrations within a designated site cannot be dismissed as imperceptible (i.e. an increase of over 0.4 µg/m³) and the NOx critical level is exceeded, then changes in nutrient nitrogen deposition should be calculated as supporting information to further assist in the evaluation of significance.

The maximum predicted increase in the annual average exposure to NO_X is 0.04 µg/m³ at Langley Park, which is less than the 0.40 µg/m³ development contribution stated within the guidance of '*A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites* ', IAQM 2019. It is considered that the effect can therefore be dismissed as imperceptible.

the effect can therefore be dismissed as imperceptible.

Scenario 2 – Development Scenario 1b Nitrogen Oxide at Ecological Receptors

Table 6.34 presents a summary of the predicted change in NO_X concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.34 Predicted Annual Average Concentrations of NO_X at Ecological Receptor Locations

Receptor		NO_X (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
E1	Railway Triangle	45.55	43.87	43.87	<0.01
E2	Eton Meadows	35.46	34.58	34.58	<0.01
E3	St Marys Churchyard	46.88	44.55	44.55	<0.01
E4	Upton Court Park	45.20	41.63	41.63	0.01
E5	Langley Park	39.77	38.12	38.16	0.04
E6	Stoke Park	31.35	31.04	31.04	<0.01
E7	Herschel Park	71.46	60.17	60.18	0.01
E8	Burnham Beeches	22.50	22.27	22.27	<0.01
Annual Mean Critical Level for the Protection of Vegetation and Habitats		**30 µg/m³**			
*Located in the AQMA					

As indicated in Table 6.34, the maximum predicted increase in the annual average exposure to NO_X at any ecological receptor, due to changes in traffic movements associated with the development, is 0.04 µg/m³ at Langley Park (E5).

Section 5.5.4.1 of *A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites*', IAQM 2019 states:

Where the assessment indicates that changes in annual mean NOx concentrations within a designated site cannot be dismissed as imperceptible (i.e. an increase of over 0.4 µg/m³) and the NOx critical level is exceeded, then changes in nutrient nitrogen deposition should be calculated as supporting information to further assist in the evaluation of significance.

The maximum predicted increase in the annual average exposure to NO_X is 0.09 µg/m³ at Herschel Park, which is less than the 0.40 µg/m³ development contribution stated within the guidance of '*A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites* ', IAQM 2019. It is considered that the effect can therefore be dismissed as imperceptible.

Scenario 2 – Development Scenario 2b Nitrogen Oxide at Ecological Receptors

Table 6.35 presents a summary of the predicted change in NO_X concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 6.35 Predicted Annual Average Concentrations of NO_X at Ecological Receptor Locations

Receptor		NO_X (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
E1	Railway Triangle	45.55	43.87	43.87	<0.01
E2	Eton Meadows	35.46	34.58	34.58	<0.01
E3	St Marys Churchyard	46.88	44.55	44.55	<0.01
E4	Upton Court Park	45.20	41.63	41.63	<0.01
E5	Langley Park	39.77	38.12	38.16	0.04
E6	Stoke Park	31.35	31.04	31.04	<0.01
E7	Herschel Park	71.46	60.17	60.17	<0.01
E8	Burnham Beeches	25.82	24.41	22.27	<0.01
Annual Mean Critical Level for the Protection of Vegetation and Habitats		**30 µg/m³**			
*Located in the AQMA					

As indicated in Table 6.35, the maximum predicted increase in the annual average exposure to NO_X at any ecological receptor, due to changes in traffic movements associated with the development, is 0.04 µg/m³ at Langley Park (E5).

Section 5.5.4.1 of *A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites*', IAQM 2019 states:

Where the assessment indicates that changes in annual mean NOx concentrations within a designated site cannot be dismissed as imperceptible (i.e. an increase of over 0.4 µg/m³) and the NOx critical level is exceeded, then changes in nutrient nitrogen deposition should be calculated as supporting information to further assist in the evaluation of significance.

The maximum predicted increase in the annual average exposure to NO_X is 0.09 µg/m³ at Herschel Park, which is less than the 0.40 µg/m³ development contribution stated within the guidance of '*A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites* ', IAQM 2019. It is considered that the effect can therefore be dismissed as imperceptible.

7. Assessment of Air Quality Impacts - Operational Phase – Data Centre

In the context of the proposed development, transportation is identified as the dominant emission source that is likely to cause potential risk of exposure of air pollutants at receptors.

The operational phase assessment therefore consists of the quantified predictions of the change in NO_2, PM_{10} and $PM_{2.5}$ for the operational phase of the development due to changes in traffic movement. Predictions of air quality at the site have been undertaken for the operational phase of the development using ADMS Roads.

The traffic does not account for the proposed lawful use of the site so can be seen as a worse-case comparison of the change from the future baseline without any development and the proposed development flows.

The model has included the provided traffic data, as contained within the supporting Transport Statement (TS). The operational phase assessment has been undertaken with an assumed opening year of 2026. The assessment scenarios are therefore:

Scenario 1

- 2018 Baseline = Existing baseline conditions;
- 2026 "Do Minimum" = Baseline conditions with Committed Development (2026 Baseline 1b); and,
- 2026 "Do Something" = – this scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings and 71,535sq.m Data Centre use.

'Do Minimum' figures were provided as 2026 Baseline 1b. While the 'Do something' scenario was provided as 2026 + Committed + Development Scenario 3b.

Scenario 2

- 2018 Baseline = Existing baseline conditions;
- 2026 "Do Minimum" = Baseline conditions with Committed Development including Lawful Use of the Development Site (2026 Baseline 2b); and,
- 2026 "Do Something" = This scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings and 71,535sq.m Data Centre use.

'Do Minimum' figures were provided as 2026 Baseline 2b. While the 'Do something' scenario was provided as 2026 + Committed + Development Scenario 3b.

7.1 Existing and Predicted Traffic Flows

Baseline 2018 traffic data and projected 2026 'do minimum' and 'do something' traffic data have been obtained for the operational phase assessment in the form of Annual Average Daily Traffic figures (AADT).

i-Transport LLP Transport Consultants have provided traffic data, for all links in Table 6.1 for the 2026 'do minimum' and 'do something' scenarios. I-Transport LLP Transport Consultants provided a 2019 Baseline traffic data, to calculate the 2018 Baseline year traffic flows, a TEMPRO factor of 1.0271 was applied.

Emission factors for the 2018 baseline and 2026 projected 'do minimum' and 'do something' scenarios have been calculated using the Emission Factor Toolkit (EFT) Version 9.0 (May 2019).

To provide a worst-case assessment, traffic from Scenario 4 as provided by i-Transport LLP has been used for the air quality assessment. This scenario assumes the worst-case traffic flows from the proposed development in 2026.

Where unavailable, traffic speeds have been estimated based on site observations and national speed limits. A 50m 20km/hr slow down phase is included on each link at every junction and roundabout within the assessment. All of the roads within the dispersion model are illustrated in Figure 1. Detailed traffic figures are provided in Table 7.1 and Table 7.2.

Table 7.1 Traffic Data – Scenario 1

Link	Speed (km/h)	2018 Baseline		2026			
		AADT	HGV %	Do Minimum		Do Something Development Scenario 1b	
				AADT	%HGV	AADT	%HGV
Wexham Road	48	15357	1.04%	16821	1.04%	17178	1.02%
Wellington Street (West of HTC Roundabout) Eastbound	48	21583	2.53%	23519	2.51%	23527	2.54%
Wellington Street (West of HTC Roundabout) Westbound	48	11829	3.46%	12993	3.41%	13001	3.46%
Wellington Street (East of HTC Roundabout) Eastbound	48	15319	3.92%	16983	3.87%	16992	3.91%
Wellington Street (East of HTC Roundabout) Westbound	48	10810	4.11%	12081	4.03%	12085	4.08%
Sussex Place	48	36409	2.28%	40324	2.25%	40601	2.24%
Wellington Street (East of Uxbridge Road) Eastbound	48	19925	2.03%	22028	2.01%	22183	2.00%
Wellington Street (East of Uxbridge Road) Westbound	48	16484	2.53%	18296	2.50%	18419	2.48%
London Road	48	36409	2.28%	40324	2.25%	40601	2.24%
Uxbridge Road (North of Wellington Street) Southbound	48	13961	1.72%	15077	1.72%	15084	1.76%
Uxbridge Road (North of Wellington Street) Northbound	48	14662	1.68%	15832	1.68%	15840	1.72%
Uxbridge Road (North of Victoria Road) Southbound	48	13961	1.72%	15077	1.72%	15084	1.76%
Uxbridge Road (North of Victoria Road) Northbound	48	14662	1.68%	15832	1.68%	15840	1.72%
Uxbridge Road (North of Broadmark Road) Southbound	48	13601	1.51%	14898	1.51%	15039	1.54%
Uxbridge Road (North of Broadmark Road) Northbound	48	13478	1.66%	14762	1.66%	14932	1.69%
Stoke Road	48	18418	7.53%	20495	7.40%	20495	7.40%
William Street	48	18418	7.53%	20495	7.40%	20495	7.40%
Windsor Road (North of Herschel Street)	48	12351	1.54%	13565	1.54%	13565	1.54%
Windsor Road (North of Chalvey Road)	48	12351	1.54%	13565	1.54%	13565	1.54%
Windsor Road (North of Ragstone Road))	48	20241	0.89%	22231	0.89%	22231	0.89%
Slough Road	64	10728	0.89%	11782	0.89%	11782	0.89%
Yew Tree Road	48	15638	0.81%	17175	0.81%	17175	0.81%
Datchet Road	48	15638	0.81%	17175	0.81%	17175	0.81%
Tuns Lane	48	36250	3.93%	39813	3.93%	39817	3.93%
Farnham Road	48	14610	2.77%	16046	2.77%	16050	2.77%

Link	Speed (km/h)	2018 Baseline		2026			
		AADT	HGV %	Do Minimum		Do Something Development Scenario 1b	
				AADT	%HGV	AADT	%HGV
Bath Road (West of Tuns Lane)	48	15729	2.15%	17275	2.15%	17279	2.15%
Bath Road (West of Stoke Poges Lane)	48	35526	2.15%	39018	2.15%	39022	2.15%
Bath Road (East of Stoke Poges Lane)	48	28000	1.23%	30752	1.23%	30756	1.23%
Wellington Street (West of Stoke Road) Eastbound	48	21279	2.53%	23519	2.51%	23527	2.54%
Wellington Street (West of Stoke Road) Westbound	48	11662	3.46%	12993	3.41%	13001	3.46%
M4	112	144249	6.99%	158429	6.99%	158429	6.99%
Broadmark Road	32	5858	1.93%	6416	1.93%	6691	1.86%
Petersfield Avenue	48	5667	1.71%	6208	1.71%	6208	1.71%

Table 7.2 Traffic Data – Scenario 2

Link	Speed (km/h)	2018 Baseline		2026			
		AADT	HGV %	Do Minimum		Do Something - Development Scenario 3b	
				AADT	%HGV	AADT	%HGV
Wexham Road	48	15357	1.04%	17392	1.11%	17178	1.02%
Wellington Street (West of HTC Roundabout) Eastbound	48	21583	2.53%	23551	2.64%	23527	2.54%
Wellington Street (West of HTC Roundabout) Westbound	48	11829	3.46%	13020	3.62%	13001	3.46%
Wellington Street (East of HTC Roundabout) Eastbound	48	15319	3.92%	16983	3.87%	16992	3.91%
Wellington Street (East of HTC Roundabout) Westbound	48	10810	4.11%	12081	4.03%	12085	4.08%
Sussex Place	48	36409	2.28%	40724	2.30%	40601	2.24%
Wellington Street (East of Uxbridge Road) Eastbound	48	19925	2.03%	22203	2.05%	22183	2.00%
Wellington Street (East of Uxbridge Road) Westbound	48	16484	2.53%	18521	2.55%	18419	2.48%
London Road	48	36409	2.28%	40724	2.30%	40601	2.24%
Uxbridge Road (North of Wellington Street) Southbound	48	13961	1.72%	15093	1.82%	15084	1.76%
Uxbridge Road (North of Wellington Street) Northbound	48	14662	1.68%	15847	1.77%	15840	1.72%
Uxbridge Road (North of Victoria Road) Southbound	48	13961	1.72%	15093	1.82%	15084	1.76%
Uxbridge Road (North of Victoria Road) Northbound	48	14662	1.68%	15847	1.77%	15840	1.72%
Uxbridge Road (North of Broadmark Road) Southbound	48	13601	1.51%	15137	1.59%	15039	1.54%
Uxbridge Road (North of Broadmark Road) Northbound	48	13478	1.66%	14948	1.74%	14932	1.69%
Stoke Road	48	18418	7.53%	20495	7.40%	20495	7.40%
William Street	48	18418	7.53%	20495	7.40%	20495	7.40%
Windsor Road (North of Herschel Street)	48	12351	1.54%	13565	1.54%	13565	1.54%
Windsor Road (North of Chalvey Road)	48	12351	1.54%	13565	1.54%	13565	1.54%
Windsor Road (North of Ragstone Road))	48	20241	0.89%	22231	0.89%	22231	0.89%
Slough Road	64	10728	0.89%	11782	0.89%	11782	0.89%
Yew Tree Road	48	15638	0.81%	17175	0.81%	17175	0.81%
Datchet Road	48	15638	0.81%	17175	0.81%	17175	0.81%
Tuns Lane	48	36250	3.93%	39813	3.93%	39817	3.93%

Link	Speed (km/h)	2018 Baseline		2026			
		AADT	HGV %	Do Minimum		Do Something - Development Scenario 3b	
				AADT	%HGV	AADT	%HGV
Farnham Road	48	14610	2.77%	16046	2.77%	16050	2.77%
Bath Road (West of Tuns Lane)	48	15729	2.15%	17275	2.15%	17279	2.15%
Bath Road (West of Stoke Poges Lane)	48	35526	2.15%	39018	2.15%	39022	2.15%
Bath Road (East of Stoke Poges Lane)	48	28000	1.23%	30752	1.23%	30756	1.23%
Wellington Street (West of Stoke Road) Eastbound	48	21279	2.53%	23551	2.64%	23527	2.54%
Wellington Street (West of Stoke Road) Westbound	48	11662	3.46%	13020	3.62%	13001	3.46%
M4	112	144249	6.99%	158429	6.99%	158429	6.99%
Broadmark Road	32	5858	1.93%	6775	1.83%	6691	1.86%
Petersfield Avenue	48	5667	1.71%	6208	1.71%	6208	1.71%

7.2 Background Concentrations

Defra Published Background Concentrations for 2018

Background concentrations below were obtained from the UK National Air Quality Information Archive database based on the National Grid Co-ordinates of 1 x 1 km grid squares nearest to the development site. In May 2019, Defra issued revised 2018 based background maps for nitrogen oxide (NO_X), NO_2, PM_{10} and $PM_{2.5}$. The mapped background concentrations are summarised in Table 7.3.

Table 7.3 Published Background Air Quality Levels (µg/m³)

Receptor Location	2018			
	NO_2	NO_x	PM_{10}	$PM_{2.5}$
Diffusion Tube Monitoring Locations				
SLO 5	23.10	35.52	16.45	11.55
SLO 6	23.10	35.52	16.45	11.55
SLO 23*	25.43	40.51	16.95	11.76
SLO 24*	24.97	38.63	17.69	12.17
SLO 25*	24.97	38.63	17.69	12.17
SLO 26	23.10	35.52	16.45	11.55
SLO 29	23.10	35.52	16.45	11.55
SLO 33	23.10	35.52	16.45	11.55
SLO 37	25.49	40.91	16.91	11.86
SLO 38	23.10	35.52	16.45	11.55
SLO 40	23.10	35.52	16.45	11.55
SLO 43	25.43	40.51	16.95	11.76
SLO 44	29.55	51.04	18.16	12.38
SLO 46	25.89	40.53	17.83	12.29
SLO 47	25.49	40.91	16.91	11.86
SLO 48*	25.89	40.53	17.83	12.29
SLO 49	25.89	40.53	17.83	12.29
SLO 50	24.97	38.63	17.69	12.17
SLH10	23.10	35.52	16.45	11.55
SLH12	25.43	40.51	16.95	11.76
Modelled Receptor Locations				
R1	23.10	35.52	16.45	11.55
R2	22.70	35.16	16.32	11.48
R3	23.10	35.52	16.45	11.55
R4	23.10	35.52	16.45	11.55
R5	23.10	35.52	16.45	11.55
R6	25.89	40.53	17.83	12.29
R7	25.43	40.51	16.95	11.76
R8	25.43	40.51	16.95	11.76
R9	24.97	38.63	17.69	12.17

Receptor Location	2018			
	NO_2	NO_x	PM_{10}	$PM_{2.5}$
R10	24.97	38.63	17.69	12.17
R11	24.97	38.63	17.69	12.17
R12	24.97	38.63	17.69	12.17
R13	25.89	40.53	17.83	12.29
R14	23.10	35.52	16.45	11.55
R15	25.43	40.51	16.95	11.76
R16	25.43	40.51	16.95	11.76
R17	25.49	40.91	16.91	11.86
R18	25.49	40.91	16.91	11.86
R19	29.55	51.04	18.16	12.38
R20	22.70	35.16	16.32	11.48
R21	22.70	35.16	16.32	11.48
R22	23.10	35.52	16.45	11.55
PR1	29.55	51.04	18.16	12.38
PR2	29.55	51.04	18.16	12.38
PR3	29.55	51.04	18.16	12.38
PR4	29.55	51.04	18.16	12.38
PR5	22.70	35.16	16.32	11.48
PR6	29.55	51.04	18.16	12.38

Table 7.5 Background Concentrations Used

Receptor location	Background Source	Background Concentration Utilised	
		NO_2	NO_x
Diffusion Tube Monitoring Locations			
SLO 5	Defra	23.10	35.52
SLO 23*	Defra	25.43	40.51
SLO 24*	Defra	24.97	38.63
SLO 25*	Defra	24.97	38.63
SLO 26	Defra	23.10	35.52
SLO 29	Defra	23.10	35.52
SLO 33	Defra	23.10	35.52
SLO 37	Defra	25.49	40.91
SLO 38	Defra	23.10	35.52
SLO 40	Defra	23.10	35.52
SLO 43	Defra	25.43	40.51
SLO 44	Defra	23.10	35.52
SLO 46	Defra	25.89	40.53
SLO 47	Defra	25.49	40.91
SLO 48*	Defra	25.89	40.53
SLO 49	Defra	25.89	40.53

Receptor location	Background Source	Background Concentration Utilised	
		NO_2	NO_x
SLO 50	Defra	25.89	40.53
SLH10	Defra	23.10	35.52
SLH12	Defra	25.43	40.51
Receptor Locations			
R1	Defra	23.10	35.52
R2	Defra	25.43	40.51
R3	Defra	23.10	35.52
R4	Defra	23.10	35.52
R5	Defra	23.10	35.52
R6	Defra	25.89	40.53
R7	Defra	25.43	40.51
R8	Defra	25.43	40.51
R9	Defra	24.97	38.63
R10	Defra	24.97	38.63
R11	Defra	24.97	38.63
R12	Defra	24.97	38.63
R13	Defra	25.89	40.53
R14	Defra	23.10	35.52
R15	Defra	25.43	40.51
R16	Defra	25.43	40.51
R17	Defra	25.49	40.91
R18	Defra	25.49	40.91
R19	Defra	29.55	51.04
R20	Defra	22.70	35.16
R21	Defra	22.70	35.16
R22	Defra	23.10	35.52
Proposed Receptor Locations			
PR1	Defra	29.55	51.04
PR2	Defra	29.55	51.04
PR3	Defra	29.55	51.04
PR4	Defra	29.55	51.04
PR5	Defra	22.70	35.16
PR6	Defra	29.55	51.04
Ecological Receptor Locations			
E1	APIS	-	45.5
E2	APIS	-	27.03
E3	APIS	-	44.70
E4	APIS	-	42.72
E5	APIS	-	36.06
E6	APIS	-	32.61
E7	APIS	-	33.66
E8	APIS	-	21.85

7.3 Model Verification

Model verification involves the comparison of modelled data to monitored data in order to gain the best possible representation of current pollutant concentrations for the assessment years. The verification process is in general accordance with that contained in Section 7 of the TG16 guidance note and uses the most recently available diffusion tube monitoring data to best represent this.

The verification process consists of using the monitoring data and the published background air quality data in the UK National Air Quality Information Archive to calculate the road traffic contribution of NO_X at the monitoring locations. Outputs from the ADMS Roads model are provided as predicted road traffic contribution NO_X emissions. These are converted into predicted roadside contribution NO_2 exposure at the relevant receptor locations based on the updated approach to deriving NO_2 from NO_X for road traffic sources published in Local Air Quality Management TG16. The calculation was derived using the NO_X to NO_2 worksheet in the online LAQM tools website hosted by Defra. Table 7.6 summarises the final model/monitored data correlation following the application of the model correction factor.

Table 7.6 Comparison of Roadside Modelling & Monitoring Results for NO_2

Tube location	NO_2 µg/m^3		
	Monitored NO_2	Modelled NO_2	Difference (%)
SLO 5	34.40	37.62	9.35
SLO 23*	29.50	33.89	14.88
SLO 24*	32.70	37.21	13.80
SLO 25*	33.20	36.15	8.87
SLO 26	31.50	34.71	10.19
SLO 29	52.70	49.08	-6.87
SLO 33	28.70	31.72	10.53
SLO 37	39.90	35.54	-10.94
SLO 38	32.30	32.10	-0.63
SLO 40	38.60	36.65	-5.06
SLO 43	34.00	33.80	-0.59
SLO 44	31.90	32.47	1.80
SLO 46	40.10	35.61	-11.20
SLO 47	35.20	37.85	7.53
SLO 48*	28.10	30.41	8.20
SLO 49	4<0.01	4<0.01	<0.01
SLO 50	45.80	44.43	-2.99
SLH10	36.00	34.50	-4.16
SLH12	42.00	39.94	-4.90

The final model produced data at the monitoring locations to within 10% of the monitoring results, as the requirement by TG16 guidance.

The final verification model correlation coefficient (representing the model uncertainty) is 0.99[2]. This figure demonstrates that the model predictions were in line with the road traffic emissions at the monitoring locations.

7.4 Summary of Model Inputs

Table 7.7 Summary of ADMS Roads Model Inputs

Parameter	Description	Input Value
Chemistry	A facility within ADMS-Roads to calculate the chemical reactions in the atmosphere between Nitric Oxide (NO), NO_2, Ozone (O_3) and Volatile organic compounds (VOCs).	No atmospheric chemistry parameters included
Meteorology	Representative meteorological data from a local source	**Heathrow Airport Meteorological Station**, hourly sequential data
Surface Roughness	A setting to define the surface roughness of the model area based upon its location.	**1m** representing a typical surface roughness for **Cities, Woodlands**.
Latitude	Allows the location of the model area to be set	United Kingdom = **51.6**
Monin-Obukhov Length	This allows a measure of the stability of the atmosphere within the model area to be specified depending upon its character.	Cities and Large Towns = **30m.**
Elevation of Road	Allows the height of the road link above ground level to be specified.	All road links were set at ground level = **0m**.
Road Width	Allows the width of the road link to be specified.	Road width used depended on data obtained from OS map data for the specific road link
Topography	This enables complex terrain data to be included within the model in order to account for turbulence and plume spread effects of topography	No topographical information used
Time Varied Emissions	This enables daily, weekly or monthly variations in emissions to be applied to road sources	No time varied emissions used
Road Type	Allows the effect of different types of roads to be assessed.	**Urban (Not London)** settings were used for the relevant links
Road Speeds	Enables individual road speeds to be added for each road link	Based on national speed limits
Canyon Height	Allows the model to take account turbulent flow patterns occurring inside a street with relatively tall buildings on both sides, known as a "street canyon".	No canyons were utilised.
Road Source Emissions	Road source emission rates are calculated from traffic flow data using the in-built EFT database of traffic emission factors.	The **EFT** Version **9.0 (May 2019)** dataset was used.
Year	Predicted EFT emissions rates depend on the year of emission.	**2018** data for verification and baseline operational phase assessment **2026** data for the operational phase assessment.

7.5 ADMS Modelling Results

Traffic Assessment

[2] This was achieved by applying a model correction factor of 1.44 to roadside predicted NO_X concentrations before converting to NO_2

The ADMS Model has predicted concentrations of NO_2, PM_{10} and $PM_{2.5}$ at relevant receptor locations adjacent to roads likely to be affected by the development, as summarised in the following tables. Only receptors close to roads where there is predicted to be a change in emissions have been assessed.

For the operational year of 2026, assessment of the effects of emissions from the proposed traffic associated with the scheme, has been undertaken using the EFT 2026 emissions rates which take into account of the rate of reduction in emission from road vehicles into the future with the following factors

- 2018 Baseline = Existing baseline conditions;
- 2026 "Do Minimum" = Baseline conditions with Committed Development (2026 Baseline 1b);
- 2026 "Do Minimum" = Baseline conditions with Committed Development (2026 Baseline 2b); and,
- 2026 "Do Something" = Baseline conditions + Committed Development + Proposed Development Scenario 1b.

Scenario One Assessment Results

Nitrogen Dioxide

Table 7.8 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 7.8 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 3b

Receptor		NO_2 (µg/m^3)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	33.14	33.15	0.01
R2	Hazelmere Road	26.62	25.17	25.18	0.01
R3	Yew Tree Road	36.63	31.88	31.88	<0.01
R4	Wexham Road	35.56	31.23	31.31	0.08
R5	Apsley House	32.82	29.37	29.38	0.01
R6	Cornwall House	34.41	31.42	31.42	<0.01
R7	Claycoats School	30.64	28.77	28.77	<0.01
R8	Windmill Care Centre	34.14	31.06	31.06	<0.01
R9	Tuns Lane	33.76	30.61	30.61	<0.01
R10	Paxton Avenue	42.80	36.49	36.49	<0.01
R11	Spackmans Way	41.90	35.88	35.88	<0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	30.03	30.03	<0.01
R13	16 John Taylor Court	34.72	31.56	31.56	<0.01
R14	19 Farnham Road	27.57	25.95	25.95	<0.01
R15	49 Stoke Road	36.91	32.85	32.85	<0.01
R16	50 Stoke Road	29.77	28.21	28.21	<0.01
R17	100 Wexham Road	31.07	29.08	29.08	<0.01
R18	98 Broadmark Road	29.79	28.24	28.25	0.01
R19	25 Cannon Gate	34.51	32.74	32.80	0.06
R20	27 Clifton Road	29.20	26.83	26.88	0.05
R21	Windsor Road	25.74	24.65	24.67	0.02
R22	Saint Mary's Church of England Primary School	32.11	28.94	28.95	0.01
PR1	Proposed Receptor	-	-	34.42	-
PR2	Proposed Receptor	-	-	32.13	-
PR3	Proposed Receptor	-	-	31.06	-
PR4	Proposed Receptor	-	-	30.84	-
PR5	Proposed Receptor	-	-	25.68	-
PR6	Proposed Receptor	-	-	31.31	-
PR7	Proposed Receptor	-	-	31.57	-
PR8	Proposed Receptor	-	-	31.68	-

Receptor	NO_2 (µg/m³)			
	Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
Annual Mean AQO: 40 µg/m³				

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table 7.8, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.08 µg/m³ at Wexham Road (R4).

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 7.9.

Table 7.9 Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 1b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	<0.01	<0.01	0%	≤75% of AQO	Negligible
R2	<0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	0.02	0.05	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.02	0.04	0%	≤75% of AQO	Negligible
R20	0.01	0.03	0%	≤75% of AQO	Negligible

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R21	0.01	0.01	0%	≤75% of AQO	Negligible
R22	0.01	0.01	0%	≤75% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table 7.10 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 7.10 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations – Development Scenario 1b

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	18.98	19.01	19.01	<0.01
R2	Hazelmere Road	16.97	16.97	16.98	<0.01
R3	Yew Tree Road	18.64	18.66	18.66	<0.01
R4	Wexham Road	18.63	18.68	18.70	0.02
R5	Apsley House	17.98	17.99	17.99	<0.01
R6	Cornwall House	19.29	19.32	19.32	<0.01
R7	Claycoats School	17.80	17.81	17.81	<0.01
R8	Windmill Care Centre	18.51	18.54	18.54	<0.01
R9	Tuns Lane	19.01	19.01	19.01	<0.01
R10	Paxton Avenue	20.07	19.98	19.98	<0.01
R11	Spackmans Way	19.82	19.72	19.72	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.31	18.31	<0.01
R13	Windsor Road	19.11	19.11	19.10	<0.01
R14	Saint Mary's Church of England Primary School	17.10	17.10	17.10	<0.01
R15	16 John Taylor Court	18.79	18.80	18.80	<0.01
R16	19 Farnham Road	17.65	17.66	17.66	<0.01
R17	49 Stoke Road	17.75	17.76	17.77	<0.01
R18	50 Stoke Road	17.55	17.56	17.56	<0.01
R19	100 Wexham Road	19.10	19.12	19.14	0.02
R20	98 Broadmark Road	17.39	17.39	17.41	0.01
R21	25 Cannon Gate	16.89	16.90	16.90	0.01

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R22	27 Clifton Road	17.99	18.02	18.03	0.01
PR1	Proposed Receptor	-	-	19.67	-
PR2	Proposed Receptor	-	-	18.90	-
PR3	Proposed Receptor	-	-	18.54	-
PR4	Proposed Receptor	-	-	18.48	-
PR5	Proposed Receptor	-	-	17.17	-
PR6	Proposed Receptor	-	-	18.64	-
PR7	Proposed Receptor	-	-	18.47	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table 7.10, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is 0.02 µg/m³ at Wexham Road (R4) and 100 Wexham Road (R19).

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 7.11.

Table 7.11 Impact Description of Effects at Key Receptors – Development Scenario 1b

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	0.01	0.05	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.01	0.04	0%	≤75% of AQO	Negligible
R20	0.01	0.03	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table 7.12 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 7.12 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations – Development Scenario 1b

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	13.08	13.01	13.01	<0.01
R2	Hazelmere Road	11.87	11.85	11.85	<0.01
R3	Yew Tree Road	12.88	12.81	12.81	<0.01
R4	Wexham Road	12.86	12.81	12.82	0.02
R5	Apsley House	12.48	12.43	12.43	<0.01
R6	Cornwall House	13.16	13.13	13.13	<0.01
R7	Claycoats School	12.27	12.25	12.25	<0.01
R8	Windmill Care Centre	12.69	12.65	12.65	<0.01
R9	Tuns Lane	12.97	12.92	12.92	<0.01
R10	Paxton Avenue	13.67	13.50	13.50	<0.01
R11	Spackmans Way	13.53	13.36	13.36	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.55	12.55	<0.01
R13	Windsor Road	13.08	13.02	13.02	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.92	11.93	<0.01

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R15	16 John Taylor Court	12.87	12.81	12.81	<0.01
R16	19 Farnham Road	12.18	12.16	12.16	<0.01
R17	49 Stoke Road	12.37	12.34	12.34	<0.01
R18	50 Stoke Road	12.25	12.23	12.23	<0.01
R19	100 Wexham Road	12.93	12.92	12.93	0.01
R20	98 Broadmark Road	12.12	12.09	12.09	0.01
R21	25 Cannon Gate	11.81	11.80	11.81	<0.01
R22	27 Clifton Road	12.47	12.44	12.44	<0.01
PR1	Proposed Receptor	-	-	13.22	-
PR2	Proposed Receptor	-	-	12.79	-
PR3	Proposed Receptor	-	-	12.59	-
PR4	Proposed Receptor	-	-	12.56	-
PR5	Proposed Receptor	-	-	11.95	-
PR6	Proposed Receptor	-	-	12.65	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table 7.12, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is 0.02 µg/m³ at Wexham Road (R4).

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 7.13.

Table 7.13 Impact Description of Effects at Key Receptors – Development Scenario 1b

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	0.02	0.05	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.01	0.04	0%	≤75% of AQO	Negligible
R20	0.01	0.03	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Scenario Two Assessment Results

Nitrogen Dioxide

Table 7.14 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 7.14 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 3b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	33.16	33.15	-0.01
R2	Hazelmere Road	26.62	25.18	25.18	<0.01
R3	Yew Tree Road	36.63	31.89	31.88	-0.01
R4	Wexham Road	35.56	31.33	31.31	-0.02
R5	Apsley House	32.82	29.38	29.38	<0.01

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R6	Cornwall House	34.41	31.42	31.42	<0.01
R7	Claycoats School	30.64	28.77	28.77	<0.01
R8	Windmill Care Centre	34.14	31.06	31.06	<0.01
R9	Tuns Lane	33.76	30.61	30.61	<0.01
R10	Paxton Avenue	42.80	36.49	36.49	<0.01
R11	Spackmans Way	41.90	35.88	35.88	<0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	30.03	30.03	<0.01
R13	16 John Taylor Court	34.72	31.56	31.56	<0.01
R14	19 Farnham Road	27.57	25.95	25.95	<0.01
R15	49 Stoke Road	36.91	32.85	32.85	<0.01
R16	50 Stoke Road	29.77	28.21	28.21	<0.01
R17	100 Wexham Road	31.07	29.08	29.08	<0.01
R18	98 Broadmark Road	29.79	28.25	28.25	<0.01
R19	25 Cannon Gate	34.51	32.81	32.80	-0.01
R20	27 Clifton Road	29.20	26.88	26.88	<0.01
R21	Windsor Road	25.74	24.67	24.67	<0.01
R22	Saint Mary's Church of England Primary School	32.11	28.96	28.95	-0.01
PR1	Proposed Receptor	-	-	34.42	-
PR2	Proposed Receptor	-	-	32.13	-
PR3	Proposed Receptor	-	-	31.06	-
PR4	Proposed Receptor	-	-	30.84	-
PR5	Proposed Receptor	-	-	25.68	-
PR6	Proposed Receptor	-	-	31.31	-
PR7	Proposed Receptor	-	-	31.57	-
PR8	Proposed Receptor	-	-	31.68	-
Annual Mean AQO: 40 µg/m³					

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table 7.14, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is <0.01 µg/m³**.**

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 7.15.

Table 7.15 Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 3b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	-0.01	-0.02	0%	76-94% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	-0.01	-0.02	0%	76-94% of AQO	Negligible
R4	-0.02	-0.05	0%	76-94% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	76-94% of AQO	Negligible
R11	<0.01	<0.01	0%	76-94% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	-0.01	-0.02	0%	76-94% of AQO	Negligible
R20	<0.01	<0.01	0%	≤75% of AQO	Negligible
R21	<0.01	<0.01	0%	≤75% of AQO	Negligible
R22	-0.01	-0.02	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table 7.16 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 7.16 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations – Development Scenario 3b

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	18.98	19.02	19.01	<0.01
R2	Hazelmere Road	16.97	16.98	16.98	<0.01
R3	Yew Tree Road	18.64	18.67	18.66	<0.01
R4	Wexham Road	18.63	18.71	18.70	-0.01
R5	Apsley House	17.98	18.00	17.99	<0.01
R6	Cornwall House	19.29	19.33	19.32	<0.01
R7	Claycoats School	17.80	17.81	17.81	<0.01
R8	Windmill Care Centre	18.51	18.54	18.54	<0.01
R9	Tuns Lane	19.01	19.01	19.01	<0.01
R10	Paxton Avenue	20.07	19.98	19.98	<0.01
R11	Spackmans Way	19.82	19.72	19.72	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.31	18.31	<0.01
R13	Windsor Road	19.11	19.11	19.10	<0.01
R14	Saint Mary's Church of England Primary School	17.10	17.10	17.10	<0.01
R15	16 John Taylor Court	18.79	18.80	18.80	<0.01
R16	19 Farnham Road	17.65	17.66	17.66	<0.01
R17	49 Stoke Road	17.75	17.77	17.77	<0.01
R18	50 Stoke Road	17.55	17.56	17.56	<0.01
R19	100 Wexham Road	19.10	19.14	19.14	<0.01
R20	98 Broadmark Road	17.39	17.41	17.41	<0.01
R21	25 Cannon Gate	16.89	16.90	16.90	<0.01
R22	27 Clifton Road	17.99	18.03	18.03	<0.01
PR1	Proposed Receptor	-	-	19.67	-
PR2	Proposed Receptor	-	-	18.90	-
PR3	Proposed Receptor	-	-	18.54	-
PR4	Proposed Receptor	-	-	18.48	-
PR5	Proposed Receptor	-	-	17.17	-
PR6	Proposed Receptor	-	-	18.64	-
PR7	Proposed Receptor	-	-	18.47	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table 7.16, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is <0.01 µg/m^3**.**

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios**.**

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 7.17.

Table 7.17 Impact Description of Effects at Key Receptors – Development Scenario 3b

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	-0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	-0.01	-0.01	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	<0.01	-0.01	0%	≤75% of AQO	Negligible
R20	<0.01	<0.01	0%	≤75% of AQO	Negligible
R21	<0.01	<0.01	0%	≤75% of AQO	Negligible
R22	<0.01	<0.01	0%	≤75% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table 7.18 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 7.18 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations – Development Scenario 3b

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	13.08	13.01	13.01	<0.01
R2	Hazelmere Road	11.87	11.85	11.85	<0.01
R3	Yew Tree Road	12.88	12.81	12.81	<0.01
R4	Wexham Road	12.86	12.83	12.82	<0.01
R5	Apsley House	12.48	12.43	12.43	<0.01
R6	Cornwall House	13.16	13.13	13.13	<0.01
R7	Claycoats School	12.27	12.25	12.25	<0.01
R8	Windmill Care Centre	12.69	12.65	12.65	<0.01
R9	Tuns Lane	12.97	12.92	12.92	<0.01
R10	Paxton Avenue	13.67	13.50	13.50	<0.01
R11	Spackmans Way	13.53	13.36	13.36	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.55	12.55	<0.01
R13	Windsor Road	13.08	13.02	13.02	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.92	11.93	<0.01
R15	16 John Taylor Court	12.87	12.81	12.81	<0.01
R16	19 Farnham Road	12.18	12.16	12.16	<0.01
R17	49 Stoke Road	12.37	12.34	12.34	<0.01
R18	50 Stoke Road	12.25	12.23	12.23	<0.01
R19	100 Wexham Road	12.93	12.93	12.93	<0.01
R20	98 Broadmark Road	12.12	12.09	12.09	<0.01
R21	25 Cannon Gate	11.81	11.81	11.81	<0.01
R22	27 Clifton Road	12.47	12.44	12.44	<0.01
PR1	Proposed Receptor	-	-	13.22	-
PR2	Proposed Receptor	-	-	12.79	-
PR3	Proposed Receptor	-	-	12.59	-
PR4	Proposed Receptor	-	-	12.56	-
PR5	Proposed Receptor	-	-	11.95	-
PR6	Proposed Receptor	-	-	12.65	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table 7.18, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is 0.01 µg/m^3 at Wexham Road (R4), 100 Wexham Road (R19) and 98 Broadmark Road (R20).

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 7.19.

Table 7.19 Impact Description of Effects at Key Receptors – Development Scenario 3b

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	<0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	<0.01	-0.01	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	<0.01	-0.01	0%	≤75% of AQO	Negligible
R20	<0.01	<0.01	0%	≤75% of AQO	Negligible
R21	<0.01	<0.01	0%	≤75% of AQO	Negligible
R22	<0.01	<0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Scenario 1 – Development Scenario 3b Nitrogen Oxide at Ecological Receptors

Table 7.20 presents a summary of the predicted change in NO_X concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 7.20 Predicted Annual Average Concentrations of NO_X at Ecological Receptor Locations

Receptor		NO_X (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
E1	Railway Triangle	45.55	43.87	43.87	<0.01
E2	Eton Meadows	35.46	34.58	34.58	<0.01
E3	St Marys Churchyard	46.88	44.55	44.55	<0.01
E4	Upton Court Park	45.20	41.63	41.63	<0.01
E5	Langley Park	39.77	38.12	38.14	0.03
E6	Stoke Park	31.35	31.04	31.04	<0.01
E7	Herschel Park	71.46	60.17	60.17	<0.01
E8	Burnham Beeches	22.50	22.27	22.27	<0.01
Annual Mean Critical Level for the Protection of Vegetation and Habitats		**30 µg/m³**			
*Located in the AQMA					

As indicated in Table 7.20, the maximum predicted increase in the annual average exposure to NO_X at any ecological receptor, due to changes in traffic movements associated with the development, is 0.03 µg/m³ at Langley Park (E5).

Section 5.5.4.1 of *A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites*', IAQM 2019 states:

Where the assessment indicates that changes in annual mean NOx concentrations within a designated site cannot be dismissed as imperceptible (i.e. an increase of over 0.4 µg/m³) and the NOx critical level is exceeded, then changes in nutrient nitrogen deposition should be calculated as supporting information to further assist in the evaluation of significance.

The maximum predicted increase in the annual average exposure to NO_X is 0.04 µg/m³ at all Langley Park, which is less than the 0.40 µg/m³ development contribution stated within the guidance of '*A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites* ', IAQM 2019. It is considered that

Scenario 2 – Development Scenario 3b Nitrogen Oxide at Ecological Receptors

Table 7.21 presents a summary of the predicted change in NO_X concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table 7.21 Predicted Annual Average Concentrations of NO_X at Ecological Receptor Locations

Receptor		NO_X (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
E1	Railway Triangle	45.55	43.87	43.87	<0.01
E2	Eton Meadows	35.46	34.58	34.58	<0.01
E3	St Marys Churchyard	46.88	44.55	44.55	<0.01
E4	Upton Court Park	45.20	41.63	41.63	<0.01
E5	Langley Park	39.77	38.12	38.14	0.03
E6	Stoke Park	31.35	31.04	31.04	<0.01
E7	Herschel Park	71.46	60.17	60.17	<0.01
E8	Burnham Beeches	25.82	22.27	22.27	<0.01
Annual Mean Critical Level for the Protection of Vegetation and Habitats		**30 µg/m³**			
*Located in the AQMA					

As indicated in Table 7.21, the maximum predicted increase in the annual average exposure to NO_X at any ecological receptor, due to changes in traffic movements associated with the development, is 0.03 µg/m³ at Langley Park (E5).

Section 5.5.4.1 of *A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites*', IAQM 2019 states:

Where the assessment indicates that changes in annual mean NOx concentrations within a designated site cannot be dismissed as imperceptible (i.e. an increase of over 0.4 µg/m³) and the NOx critical level is exceeded, then changes in nutrient nitrogen deposition should be calculated as supporting information to further assist in the evaluation of significance.

The maximum predicted increase in the annual average exposure to NO_X is 0.09 µg/m³ at all Herschel Park, which is less than the 0.40 µg/m³ development contribution stated within the guidance of '*A Guide to the Assessment of Air Quality Impacts in Designated Nature Conservation Sites* ', IAQM 2019. It is considered that the effect can therefore be dismissed as imperceptible.

8. Damage Cost Calculation

A 'damage costs' assessment has been completed following consultation with the local authority. Damage costs are a simple way to value changes in air pollution. They estimate the cost of a change in emissions of different pollutants. While Slough does not have a policy for completing this assessment, a cost has been completed in line with IAQM and EPUK guidance. (para 5.12)

Max Additional 2- way trips	1,636 AADT
HGV %	64%
Average distance travelled	10 km
Assumed average speed of	50kph

Table 8.1 Damage Cost Calculation

Pollutant	Annual Link Emissions (kg/annum)	Over 5 Years (kg/annum)	2018 National Damage Costs Central (£/tonne)	Valuation (£)
NO_x	2,040	10.20	6,199	£63,231
PM_{10}	285	1.43	105,836	£150,916
Total				**£214,147**

This sum is to be put towards the mitigation in Section 12.

9. Detailed Dispersion Modelling of Emissions from Emergency Generators at Development Scenario 3b (Sui Generis)

In order to consider the air quality impacts of the emergency generators in the Development Scenario 3b on the local air quality, a quantitative assessment using the third generation Breeze AERMOD dispersion model has been undertaken. AERMOD is a development from the ISC3 dispersion model and incorporates improved dispersion algorithms and pre-processors to integrate the impact of meteorology and topography within the modelling output.

The model uses hourly meteorological data to define conditions for plume rise, transport, diffusion and deposition. It estimates the concentration for each source and receptor combination for each hour of input meteorology and calculates user-selected short-term averages.

9.1 Modelling Parameter and Averaging Period

The dispersion modelling has assessed impact of emissions from the generators taking into consideration of the operation of the proposed installation.

The same averaging period should be used for comparison of emissions against environmental standards. For example, most long-term standards are expressed as an annual mean and many short-term standards as an hourly mean. Note that there are certain exceptions to this which are important when considering compliance with statutory EQS. The averaging period associated with the relevant modelled pollution are detailed in Table 9.1.

Table 9.1 Modelling Parameter and Averaging Period

Parameter	Modelled As	
	Short Term	Long Term
NO_2	99.79th percentile (%ile) 1-hour mean	Annual Mean

NO_2 background concentrations are taken from ADMS Road modelling results, which includes the contribution from the traffic emissions.

For short term averaging periods, the following UK Defra methodology, for example, has been followed:

For 1-hour NO_2 concentrations:

- 99.79th percentile(%ile) 1-hour Process Contribution NO_2 + 2 x (annual mean background contribution NO_2).

9.2 Emissions Sources

There is no fixed layout, however, for the purposes of this assessment for the outline application it is assumed that the proposed development could involve the installation of 26 no. CAT 3516C IMI Standby 2200kWe diesel generators (including 2 additional generators) for each of the 2-storey data centre buildings to provide power to the Development Scenario 3b, in the event that there is a loss of mains power to the site. In addition, there will be 1 generator for offices per building. There are two buildings. Therefore, there could be a total of 54 generators (26 x 2 + 1 x 2 = 54).

Generator Operation Scenarios

Four generator operation scenarios have been assessed as below:

- Scenario i – this is a generator testing scenario. The generators will be tested fortnightly, with a testing period of 30 minutes at 25% load for each engine. One generator will be tested at a time and the testing will be taking place only at day-time.

  The total net generator running time will be 28 hours fortnightly and approximately 728 hours per year.

  For the short-term impact assessment, it is assumed that (1) the testing starts at 8 am and finishes at 5pm; (2) 12 generators will be tested per day and (2) it will take 5 days (Monday to Friday) to compete the testing of 54 generators.

- Scenario ii – this is also a generator testing scenario. The generators will be tested twice a year with a testing period of 1.5 hour at 100% load for each engine/generator. One generator will be tested at a time and the testing will be taking place only at day-time.

  The total net generator running time will be 81 hours for one round test and approximately 162 hours per year in total.

  For the short-term impact assessment, it is assumed that (1) the testing starts at 8 am and finishes at 5pm; (2) 4 generators will be tested per day and (2) it will take approximately 14 days to compete one round of the testing of 54 generators. Testing will only take place on weekdays, for example, Monday to Friday.

- Scenario iii– this is emergency scenario. The all 54 generators will be in operation, among them 50 generators (including 2 generators for office building) at 100% load and all 4 Catchers generators at 25% load.

All generators will be operating continuously for 6 hours for the emergency scenario.

- Scenario iv – Combined Scenario

  The scenario considers the combined operations of scenario i fortnight testing, scenario ii twice-a-year testing and the emergency scenario iii operations. This is a theoretical worst-case scenario as the scenario i and scenario ii could not take place simultaneously.

This air quality assessment for the Development Scenario 3b has been based on the installation of 54 Cat 3516 diesel generators.

The emissions from the generators have been calculated based on its specifications or provided by the clients. The pollutant mass emission rates used within AERMOD and stack gas parameters are presented in Table 9.2.

Table 9.2 Stack Emissions and Parameters for the CHP

Parameter	Cat 3516 Generator @ 25% Load (Each engines) [1]	Cat 3516 Generator @ 100% Load (Each engines) [2]	Unit
Power	2,400	2,400	kW
Fuel	diesel	diesel	-
NO_x	2.261	5.634	g/s
Stack Gas Temperature	484.9	484.9	°C
Stack/Chimney diameter	0.508	0.508	m
Efflux velocity at chimney outlet [2]	42.2	42.2	m/s
Stack/chimney Height	24	24	m (AGL)

Note:
1. *Client provided data; and*
2. *Derived from the engine specifications and the client provided data;*

The impact from the NO_x emissions has been assessed in this assessment.

Figure 6 illustrates the location of the modelled emission points for the generator stacks.

9.3 Sensitive Receptors

9.3.1 Discrete (Individual) Receptors

The discrete sensitive receptors identified for the purposes of this air quality assessment are contained in Table 9.3 and shown further in Figure 1. The assessment has also been undertaken to determine the potential impacts at those selected receptors.

It should be noted that these do not represent an exhaustive list of all receptors within the vicinity of the Site, rather worst-case representative locations within and adjacent to the site.

Table 9.3 Modelled Sensitive Receptor Locations

Discrete Sensitive Receptors		UK NGR (m)	
AERMOD ID/ADMS ID	Name	X	Y
R1	Princes Street	498552	179808
R2	Hazelmere Road	499037	180364
R3	Yew Tree Road	498499	179731
R4	Wexham Road	498394	179849
R5	Apsley House	498138	179920
R6	Cornwall House	497501	179974
R7	Claycoats School	496943	180043
R8	Windmill Care Centre	496506	180184
R9	Tuns Lane	496366	179928
R10	Paxton Avenue	496124	179253
R11	Spackmans Way	496237	179200
R12	Slough and Eton CoE Business and Enterprise College	496869	179191
R13	Windsor Road	497374	179439
R14	Saint Mary's Church of England Primary School	498281	179425
R15	16 John Taylor Court	496426	180162
R16	19 Farnham Road	496351	180331
R17	49 Stoke Road	497718	180412
R18	50 Stoke Road	497772	180431
R19	100 Wexham Road	498547	180361
R20	98 Broadmark Road	499099	180430
R21	25 Cannon Gate	499345	180876
R22	27 Clifton Road	498623	179672
R23	PR 1	498476	180226
R24	PR 2	498450	180118
R25	PR 3	498683	180038
R26	PR 4	498731	180117
R27	PR 5	498521	180220
R28	PR 6	498595	180194
R29	PR 7	498663	180169
R30	PR 8	498734	180140
E1	Railway Triangle	497318	180155
E2	Eton Meadows	495473	178197
E3	St Marys Churchyard	497605	179519
E4	Upton Court Park	498238	178838
E5	Langley Park	499367	180709
E6	Stoke Park	497244	181983
E7	Herschel Park	497830	178995
E8	Burnham Beeches	495487	187069

9.3.2 Cartesian Grid Receptor

A Cartesian receptor grid was used in the model in order to produce the concentration contour lines. The Cartesian receptor grid consists of receptors identified by their x (east-west) and y (north-south) coordinates. The grid was constructed with grid spacing (x, y) of 50m by 50m over an area covering 3000m by 3000m with south-west corner UK NGR (m) of 497000, 178900.

9.3.3 Ecological Receptors

Ecological receptors are presented in section 4.

9.4 Meteorological Data

The 3 year meteorological data (2016, 2017 and 2018) used in the assessment is derived from Heathrow Airport, which is considered representative of conditions within the vicinity of the site, with all the complete parameters necessary for the AERMOD model. Reference should be made to Figure 2 for an illustration of the prevalent wind conditions at the Heathrow Airport weather station.

9.5 Surface Characteristics

The land uses surrounding the Site are mostly described as residential and commercial uses. Surface roughness value of 1.0m for large urban areas has been used in the modelling for a worst-case assessment.

9.6 Buildings in the Modelling Assessment

Buildings nearby or immediately adjacent to the generator stack could potentially cause building downwash effects on emission sources and have therefore been modelled for the proposed development. The locations and dimensions of the buildings used in the model are given in Table 9.4 and illustrated in Figure 6.

Table 9.4 Locations and Heights of Building Used in the Model

Name		UK NGR (m)		Height (m)
		X	Y	
1	Indicative Building North	498885	180350	7
2	Indicative Building South	498786	180250	7

9.7 Treatment of Terrain

The presence of steep terrain can influence the dispersion of emissions and the resulting pollutant concentrations. USEPA guidance indicates that terrain effects should be considered if the gradient exceeds

1:10. A digital terrain file in the UK Ordnance Survey (OS) Landranger format (.NTF) has been used in the assessment.

9.8 NO_X to NO_2 Conversion

Emissions of NO_x from combustion processes are predominantly in the form of NO. Excess oxygen in the combustion gases and further atmospheric reactions cause the oxidation of NO to NO_2. Given the short travel time to the areas of maximum concentration and the rate of reaction to convert NO to NO_2, it is unlikely that more than 30% of the NO_x is present at ground level as NO_2. This conversion factor is based on comparison of ambient NO and NO_2 continuous measurements evaluated over recent years.

Ground level NO_x concentrations have been predicted through dispersion modelling. NO_2 concentrations reported in the results section assume 70% conversion from NO_x to NO_2 for annual means and a 35% conversion for short term (hourly) concentrations, based upon EA methodology[3].

9.9 Modelling Uncertainty

Uncertainty in dispersion modelling predictions can be associated with a variety of factors, including:

- Model uncertainty - due to model limitations;
- Data uncertainty - including emissions estimates, background estimates and meteorology; and,
- Variability - randomness of measurements used.

However, potential uncertainties in model results have been minimised as far as practicable and worst-case inputs considered in order to provide a robust assessment. This included the following:

- Choice of model - AERMOD is a commonly used atmospheric dispersion model and results have been verified through a number of studies to ensure predictions are as accurate as possible.
- Facility operating parameters - Operational parameters were provided for the facility.
- Background concentrations - Background pollutant concentrations were obtained from a number of recognised sources in order to consider baseline levels in the vicinity of the site, as detailed within the main report text.

[3] Conversion Ratios for NO_x and NO_2, Environment Agency, updated.

- Variability - All model inputs are as accurate as possible and worst-case conditions have been considered where necessary in order to ensure a robust assessment of potential pollutant concentrations.

10. Detailed Modelling Assessment Results from Development Scenario 3b

The detailed modelling assessment of process emissions for the proposed generator operations was undertaken using the input parameters detailed in Section 9.

All predicted concentrations have been compared to the relevant environmental assessment criteria, as detailed in Sections 2 and 3.

10.1 Scenario i

Scenario i was assessed by selecting one testing generator which is closest to the selected receptor to produce the worst case assessment.

For long-term impact, one engine is assumed to running continuously for a year and the impacts was scaled down to the maximum testing time.

For short-term impact, it is assumed one generator will be in operation for weekdays through out of the year. The presented short-term impacts were the worst possible ones during a year time.

Long-Term (Annual Mean) NO_2 – Scenario i

The long-term emissions of NO_2 from the source considered were assessed for all 3 years of meteorological data. The maximum process contributions (PCs) within the modelled receptor locations and their associated predicted environmental concentrations (PECs) are compared against the relevant AQO, in Table 10.1.

From the meteorological dataset, the year resulting in maximum long-term NO_2 PC concentration was identified as 2018. The predicted maximum PC occurs at the receptor location of Proposed receptor (PR5).

The maximum NO_2 PC in Table 10.1 is 0.2 µg/m^3 and the associated NO_2 PEC is 32.87 µg/m^3, which is below the relevant long-term AQS of 40 µg/m^3 for the protection of human health.

Table 10.1 The Maximum Long-Term (Annual Mean) Concentrations of NO_2 – Scenario i

Pollutant	Year	Process Contrib'tn (PC)	PC as %age of AQO	Background from the Traffic assessment	PEC[(a)] (PC +Background)	Easting (m)	Northing (m)	Receptor Name
NO_2	2016	0.17	0.42	32.67	32.84	498521	180220	Proposed Receptor PR5
NO_2	2017	0.16	0.40	26.96	27.12	499037	180364	Hazelmere Road D2

Pollutant	Year	Process Contrib'tn (PC)	PC as %age of AQO	Background from the Traffic assessment	PEC[a] (PC +Background)	Easting (m)	Northing (m)	Receptor Name
NO_2	2018	0.20	0.50	32.67	32.87	498521	180220	Proposed Receptor PR5
AQOs	40							

Note:

a. *Inclusive of Background concentration from the traffic assessment.*

Table 10.2 presents a summary of the predicted nitrogen dioxide concentrations, both PCs and PECs, at the modelled receptors locations.

The impact description of changes associated with the operations of the generator with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 10.2.

Table 10.2 The Long-Term (Annual Mean) Concentrations of NO_2 and Impact Description of Effects at Receptors – Scenario i

Receptor		Predicted Annual Mean Concentration (µg/m³) – 2018 Met Data, and NO_2 Impact Description at Receptors						
ID	Name	Process Contribution (PC)	PC as percentage of AQO (%)	Background from the Traffic assessment	PEC[(a)] (PC +Background)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
R1	Princes Street	0.04	0.10	39.95	39.99	99.98	95-102% of AQO	Negligible
R2	Hazelmere Road	0.11	0.28	26.96	27.07	67.68	≤ 75 of AQO	Negligible
R3	Yew Tree Road	0.04	0.09	37.88	37.92	94.80	76-94% of AQO	Negligible
R4	Wexham Road	0.06	0.14	36.86	36.92	92.30	76-94% of AQO	Negligible
R5	Apsley House	0.04	0.11	33.76	33.80	84.50	76-94% of AQO	Negligible
R6	Cornwall House	0.01	0.03	35.26	35.28	88.19	76-94% of AQO	Negligible
R7	Claycoats School	0.01	0.02	31.14	31.15	77.87	76-94% of AQO	Negligible
R8	Windmill Care Centre	0.01	0.01	34.95	34.95	87.38	76-94% of AQO	Negligible
R9	Tuns Lane	0.01	0.01	34.57	34.58	86.44	76-94% of AQO	Negligible
R10	Paxton Avenue	<0.01	0.01	44.32	44.32	110.80	>110 of AQO	Negligible
R11	Spackmans Way	<0.01	0.01	43.30	43.30	108.25	103-109% of AQO	Negligible
R12	Slough and Eton CoE Business and Enterprise College	0.01	0.02	33.72	33.73	84.32	76-94% of AQO	Negligible
R13	Windsor Road	0.01	0.03	35.54	35.55	88.88	76-94% of AQO	Negligible
R14	Saint Mary's Church of England Primary School	0.02	0.06	28.00	28.03	70.07	≤ 75 of AQO	Negligible
R15	16 John Taylor Court	0.01	0.01	37.96	37.97	94.92	76 – 94% of AQO	Negligible
R16	19 Farnham Road	0.01	0.01	30.19	30.19	75.49	≤ 75 of AQO	Negligible
R17	49 Stoke Road	0.02	0.05	31.66	31.68	79.19	76-94% of AQO	Negligible
R18	50 Stoke Road	0.02	0.05	30.22	30.24	75.61	76-94% of AQO	Negligible
R19	100 Wexham Road	0.05	0.14	35.05	35.11	87.77	76 – 94% of AQO	Negligible
R20	98 Broadmark Road	0.09	0.23	29.84	29.93	74.83	≤ 75 of AQO	Negligible
R21	25 Cannon Gate	0.03	0.09	26.05	26.09	65.22	≤ 75 of AQO	Negligible
R22	27 Clifton Road	0.03	0.07	33.03	33.05	82.63	76 – 94% of AQO	Negligible

Receptor		Predicted Annual Mean Concentration (µg/m³) – 2018 Met Data, and NO_2 Impact Description at Receptors						
ID	Name	Process Contribution (PC)	PC as percentage of AQO (%)	Background from the Traffic assessment	PEC[(a)] (PC +Background)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
R23	PR 1	0.18	0.46	37.74	37.93	94.82	76-94% of AQO	Negligible
R24	PR 2	0.12	0.31	33.96	34.09	85.22	76-94% of AQO	Negligible
R25	PR 3	0.05	0.13	32.14	32.20	80.49	76-94% of AQO	Negligible
R26	PR 4	0.05	0.13	31.77	31.82	79.55	76-94% of AQO	Negligible
R27	PR 5	0.20	0.50	32.67	32.87	82.17	76-94% of AQO	Negligible
R28	PR 6	0.08	0.20	31.71	31.79	79.47	76-94% of AQO	Negligible
R29	PR 7	0.05	0.12	31.57	31.62	79.04	76-94% of AQO	Negligible
R30	PR 8	0.05	0.14	31.68	31.73	79.33	76-94% of AQO	Negligible
AQO		**40 µg/m³**						

The percentage changes in process contribution of NO_2 relative to the AQAL as a result of the generator testing and the development traffic emissions at all existing and proposed receptor locations, with respect to NO_2 exposure, are determined to be 0.50% or less. The impact is determined to be 'negligible', based on the methodology outlined in Section 3. The effect of the proposed generator operations on the local area is considered to be insignificant.

The predicted long-term NO_2 concentrations from the proposed development are considered acceptable for the protection of human health.

Short-Term (1-Hour Mean) NO_2 – Scenario i

The short-term emissions of NO_2 from the source considered were assessed for all 3 years of meteorological data. The maximum PCs within the modelled receptor locations and their associated PECs are compared against the relevant AQS, in Table 10.3.

From the meteorological dataset, the year resulting in maximum short-term NO_2 PC concentration was identified during 2016. The predicted maximum short-term PC occurs at the receptor location of Proposed receptor (PR5).

The highest short-term NO_2 PC in Table 10.3 is 17.36µg/m^3 and the associated short-term NO_2 PEC is 82.69 µg/m^3, which is below the relevant short-term AQO of 200 µg/m^3 for the protection of human health.

Table 10.3 The Maximum Short-Term (1-Hour Mean, 99.79th Percentile) Concentrations of NO_2 – Scenario i

Pollutant	Year	Process Contrib'tn (PC)	PC as %age of AQO	Background from the Traffic assessment	PEC[(a)] (PC +Background)	Easting (m)	Northing (m)	Receptor Name
NO_2	2016	17.36	8.68	65.34	82.69	498521	180220	Proposed Receptor PR5
NO_2	2017	17.26	8.63	65.34	82.59	498521	180220	Proposed Receptor PR5
NO_2	2018	16.99	8.49	65.34	82.32	498521	180220	Proposed Receptor PR5
AQOs	200							

Note:

a. *Inclusive of Background concentration from the traffic assessment.*

The short-term NO_2 PEC concentrations have been calculated at each of the discrete receptors listed for the worst meteorological year of 2016 and these results are detailed in Table 10.4 (overleaf).

Table 10.4 Summary of the Predicted Short-Term NO_2 Concentrations at Discrete Receptors – Scenario i

Receptor		Predicted 1-hour Mean (99.79th Percentile) Concentration (µg/m³) – 2016 Met Data				
ID	Name	Process Contribution (PC)	PC as %age of AQO	Background from the Traffic assessment	PEC[(a)] (PC +Background)	PEC as percentage of AQO
R1	Princes Street	2.63	1.32	79.90	82.53	41.27
R2	Hazelmere Road	4.64	2.32	53.92	58.56	29.28
R3	Yew Tree Road	2.09	1.04	75.77	77.85	38.93
R4	Wexham Road	2.67	1.34	73.73	76.40	38.20
R5	Apsley House	2.03	1.02	67.52	69.55	34.78
R6	Cornwall House	0.78	0.39	70.52	71.30	35.65
R7	Claycoats School	0.39	0.20	62.28	62.67	31.33
R8	Windmill Care Centre	0.25	0.13	69.89	70.14	35.07
R9	Tuns Lane	0.24	0.12	69.15	69.38	34.69
R10	Paxton Avenue	0.23	0.11	88.63	88.86	44.43
R11	Spackmans Way	0.25	0.12	86.59	86.84	43.42
R12	Slough and Eton CoE Business and Enterprise College	0.35	0.17	67.44	67.79	33.89
R13	Windsor Road	0.53	0.26	71.08	71.60	35.80
R14	Saint Mary's Church of England Primary School	1.05	0.52	56.00	57.05	28.53
R15	16 John Taylor Court	0.24	0.12	75.93	76.17	38.08
R16	19 Farnham Road	0.24	0.12	60.38	60.61	30.31
R17	49 Stoke Road	1.06	0.53	63.32	64.37	32.19
R18	50 Stoke Road	1.13	0.56	60.45	61.58	30.79
R19	100 Wexham Road	7.03	3.52	70.10	77.14	38.57
R20	98 Broadmark Road	3.52	1.76	59.68	63.20	31.60
R21	25 Cannon Gate	1.44	0.72	52.10	53.54	26.77
R22	27 Clifton Road	1.93	0.97	66.05	67.99	33.99
R23	PR 1	14.58	7.29	75.48	90.07	45.03
R24	PR 2	7.44	3.72	67.93	75.37	37.68
R25	PR 3	5.21	2.60	64.29	69.50	34.75
R26	PR 4	6.04	3.02	63.54	69.57	34.79
R27	PR 5	17.36	8.68	65.34	82.69	41.35
R28	PR 6	6.89	3.45	63.42	70.31	35.16
R29	PR 7	4.67	2.34	63.14	67.82	33.91
R30	PR 8	6.05	3.03	63.36	69.41	34.70
AQOs	200 µg/m³					

Note:

(a) Inclusive of Background concentrations from the traffic assessment.

As shown in Table 10.4, there are no exceedances of the short-term NO_2 AQO at any of the identified sensitive receptors. The predicted impacts are significantly below the AQO of 200 µg/m³.

Therefore, the predicted short-term NO_2 concentrations from the generator testing operations (Scenario i) and traffic emissions are considered acceptable for the protection of human health.

As the predicted long-term and short-term ground level PCs of NO_2 are below 1% of long-term AQO and 10% of short-term AQO respectively, both long-term and short-term impacts are negligible and insignificant. The contour plots of the predicted long-term and short-term ground level PCs have not presented.

10.2 Scenario ii

Scenario ii was assessed by selecting one testing generator (at 100% load) which is closest to the selected receptor to produce the worst case assessment.

For long-term impact, one engine is assumed to running continuously for a year and the impacts was scaled down to the maximum testing time.

For short-term impact, it is assumed one generator will be in operation for weekdays through out of the year. The presented short-term impacts were the worst possible ones during a year time.

Long-Term (Annual Mean) NO_2 – Scenario ii

The long-term emissions of NO_2 from the source considered were assessed 2018 meteorological dataset, the year resulting in maximum long-term NO_2 PC concentration.

Table 10.5 presents a summary of the predicted nitrogen dioxide concentrations, both PCs and PECs, at the modelled receptors locations for Scenario ii.

The impact description of changes associated with the operations of the generator testing with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 10.5.

Table 10.5 The Long-Term (Annual Mean) Concentrations of NO_2 and Impact Description of Effects at Receptors – Scenario ii

Receptor		Predicted Annual Mean Concentration (µg/m³) – 2018 Met Data, and NO_2 Impact Description at Receptors						
ID	Name	Process Contribution (PC)	PC as percentage of AQO (%)	Background from the Traffic assessment	PEC[(a)] (PC +Background)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
R1	Princes Street	0.02	0.06	39.95	39.97	99.93	95-102% of AQO	Negligible
R2	Hazelmere Road	0.06	0.15	26.96	27.02	67.56	≤ 75 of AQO	Negligible
R3	Yew Tree Road	0.02	0.05	37.88	37.90	94.76	76-94% of AQO	Negligible
R4	Wexham Road	0.03	0.08	36.86	36.90	92.24	76-94% of AQO	Negligible
R5	Apsley House	0.02	0.06	33.76	33.78	84.46	76-94% of AQO	Negligible
R6	Cornwall House	0.01	0.02	35.26	35.27	88.17	76-94% of AQO	Negligible
R7	Claycoats School	<0.01	0.01	31.14	31.14	77.86	76-94% of AQO	Negligible
R8	Windmill Care Centre	<0.01	0.01	34.95	34.95	87.37	76-94% of AQO	Negligible
R9	Tuns Lane	<0.01	0.01	34.57	34.58	86.44	76-94% of AQO	Negligible
R10	Paxton Avenue	<0.01	0.01	44.32	44.32	110.80	>110 of AQO	Negligible
R11	Spackmans Way	<0.01	0.01	43.30	43.30	108.25	103-109% of AQO	Negligible
R12	Slough and Eton CoE Business and Enterprise College	<0.01	0.01	33.72	33.73	84.32	76-94% of AQO	Negligible
R13	Windsor Road	0.01	0.02	35.54	35.55	88.86	76-94% of AQO	Negligible
R14	Saint Mary's Church of England Primary School	0.01	0.03	28.00	28.02	70.04	≤ 75 of AQO	Negligible
R15	16 John Taylor Court	<0.01	0.01	37.96	37.97	94.92	76 – 94% of AQO	Negligible
R16	19 Farnham Road	<0.01	0.01	30.19	30.19	75.48	≤ 75 of AQO	Negligible
R17	49 Stoke Road	0.01	0.03	31.66	31.67	79.17	76-94% of AQO	Negligible
R18	50 Stoke Road	0.01	0.03	30.22	30.23	75.59	76-94% of AQO	Negligible
R19	100 Wexham Road	0.03	0.08	35.05	35.08	87.71	76 – 94% of AQO	Negligible
R20	98 Broadmark Road	0.05	0.13	29.84	29.89	74.73	≤ 75 of AQO	Negligible
R21	25 Cannon Gate	0.02	0.05	26.05	26.07	65.18	≤ 75 of AQO	Negligible
R22	27 Clifton Road	0.01	0.04	33.03	33.04	82.60	76 – 94% of AQO	Negligible

Receptor		Predicted Annual Mean Concentration (µg/m³) – 2018 Met Data, and NO_2 Impact Description at Receptors						
ID	Name	Process Contribution (PC)	PC as percentage of AQO (%)	Background from the Traffic assessment	PEC[(a)] (PC +Background)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
R23	PR 1	0.10	0.26	37.74	37.84	94.61	76-94% of AQO	Negligible
R24	PR 2	0.07	0.17	33.96	34.03	85.08	76-94% of AQO	Negligible
R25	PR 3	0.03	0.07	32.14	32.17	80.43	76-94% of AQO	Negligible
R26	PR 4	0.03	0.07	31.77	31.80	79.49	76-94% of AQO	Negligible
R27	PR 5	0.11	0.28	32.67	32.78	81.95	76-94% of AQO	Negligible
R28	PR 6	0.05	0.11	31.71	31.75	79.38	76-94% of AQO	Negligible
R29	PR 7	0.03	0.06	31.57	31.60	78.99	76-94% of AQO	Negligible
R30	PR 8	0.03	0.08	31.68	31.71	79.27	76-94% of AQO	Negligible
AQO		**40 µg/m³**						

The maximum NO_2 PC in Table 10.5 is 0.11 µg/m^3 and the associated NO_2 PEC is 32.78 µg/m^3, which is below the relevant long-term AQS of 40 µg/m^3 for the protection of human health.

The percentage changes in process contribution of NO_2 relative to the AQAL as a result of the generator testing and the development traffic emissions at all existing and proposed receptor locations, with respect to NO_2 exposure, are determined to be 0.28% or less. The impact is determined to be 'negligible', based on the methodology outlined in Section 3. The effect of the proposed generator operations on the local area is considered to be insignificant.

The predicted long-term NO_2 concentrations from the proposed development are considered acceptable for the protection of human health.

Short-Term (1-Hour Mean) NO_2 – Scenario ii

The short-term emissions of NO_2 from the source considered were assessed 2016 meteorological dataset, the year resulting in maximum short-term NO_2 PC concentration. The predicted maximum short-term PC occurs at the receptor location of Proposed receptor (PR5).

Table 10.6 Summary of the Predicted Short-Term NO_2 Concentrations at Discrete Receptors – Scenario ii

Receptor		Predicted 1-hour Mean (99.79th Percentile) Concentration (µg/m^3) – 2016 Met Data				
ID	Name	Process Contribution (PC)	PC as %age of AQO	Background from the Traffic assessment	PEC[(a)] (PC +Background)	PEC as percentage of AQO
R1	Princes Street	6.56	3.28	79.90	86.46	43.23
R2	Hazelmere Road	11.55	5.77	53.92	65.47	32.74
R3	Yew Tree Road	5.20	2.60	75.77	80.97	40.48
R4	Wexham Road	6.66	3.33	73.73	80.39	40.19
R5	Apsley House	5.07	2.53	67.52	72.58	36.29
R6	Cornwall House	1.94	0.97	70.52	72.46	36.23
R7	Claycoats School	0.98	0.49	62.28	63.25	31.63
R8	Windmill Care Centre	0.62	0.31	69.89	70.52	35.26
R9	Tuns Lane	0.59	0.29	69.15	69.73	34.87
R10	Paxton Avenue	0.56	0.28	88.63	89.20	44.60
R11	Spackmans Way	0.61	0.31	86.59	87.21	43.60
R12	Slough and Eton CoE Business and Enterprise College	0.86	0.43	67.44	68.31	34.15
R13	Windsor Road	1.31	0.66	71.08	72.39	36.19
R14	Saint Mary's Church of England Primary School	2.62	1.31	56.00	58.62	29.31
R15	16 John Taylor Court	0.60	0.30	75.93	76.52	38.26
R16	19 Farnham Road	0.59	0.30	60.38	60.97	30.48

Receptor		Predicted 1-hour Mean (99.79th Percentile) Concentration (µg/m³) – 2016 Met Data				
ID	Name	Process Contribution (PC)	PC as %age of AQO	Background from the Traffic assessment	PEC(a) (PC +Background)	PEC as percentage of AQO
R17	49 Stoke Road	2.63	1.32	63.32	65.95	32.97
R18	50 Stoke Road	2.82	1.41	60.45	63.26	31.63
R19	100 Wexham Road	17.52	8.76	70.10	87.63	43.81
R20	98 Broadmark Road	8.77	4.39	59.68	68.45	34.23
R21	25 Cannon Gate	3.58	1.79	52.10	55.68	27.84
R22	27 Clifton Road	4.81	2.41	66.05	70.87	35.43
R23	PR 1	36.34	18.17	75.48	111.83	55.91
R24	PR 2	18.54	9.27	67.93	86.47	43.23
R25	PR 3	12.98	6.49	64.29	77.27	38.63
R26	PR 4	15.05	7.52	63.54	78.58	39.29
R27	PR 5	43.25	21.63	65.34	108.59	54.29
R28	PR 6	17.18	8.59	63.42	80.60	40.30
R29	PR 7	11.65	5.82	63.14	74.79	37.39
R30	PR 8	15.08	7.54	63.36	78.44	39.22
AQOs	200 µg/m³					

Note:

(a) Inclusive of Background concentrations from the traffic assessment.

The highest short-term NO_2 PC in Table 10.6 is 43.25µg/m³ and the associated short-term NO_2 PEC is 108.59 µg/m³, which is below the relevant short-term AQO of 200 µg/m³ for the protection of human health.

As shown in Table 10.6, there are no exceedances of the short-term NO_2 AQO at any of the identified sensitive receptors. The predicted impacts are significantly below the AQO of 200 µg/m³.

Therefore, the predicted short-term NO_2 concentrations from the generator testing operations (Scenario ii) and traffic emissions are considered acceptable for the protection of human health.

The contour plots of the predicted long-term and short-term ground level PCs of NO_2 for all receptors, including discrete and grid receptors are presented in Figures 7 and 8. The contour plots show that the predicted maximum concentrations occur adjacent to the emission source, with a predicted decrease in concentration with the increased distance from the stack.

10.3 Scenario iii – Emergency Scenario

Scenario iii was assessed for all 54 generators to be in operation at same time.

For long-term impact, one engine is assumed to running continuously for a year and the impacts was scaled down to the emergency scenario time of 6 hours continuously.

For short-term impact, it is assumed one generator will be in operation for weekdays through out of the year. The presented short-term impacts were the worst possible ones during a year time.

Long-Term (Annual Mean) NO_2 – Scenario iii

The long-term emissions of NO_2 from the source considered were assessed for all 3 years of meteorological data. The maximum process contributions (PCs) within the modelled receptor locations and their associated predicted environmental concentrations (PECs) are compared against the relevant AQO, in Table 10.7.

From the meteorological dataset, the year resulting in maximum long-term NO_2 PC concentration was identified as 2017. The predicted maximum PC occurs at the receptor location of Hazelmere Road (D2).

The maximum NO_2 PC in Table 10.7 is 0.26 µg/m^3 and the associated NO_2 PEC is 27.22 µg/m^3, which is below the relevant long-term AQS of 40 µg/m^3 for the protection of human health.

Table 10.7 The Maximum Long-Term (Annual Mean) Concentrations of NO_2 – Scenario iii

Pollutant	Year	Process Contrib'tn (PC)	PC as %age of AQO	Background from the Traffic assessment	PEC[a] (PC +Background)	Easting (m)	Northing (m)	Receptor Name
NO_2	2016	0.19	0.47	26.96	27.15	499037	180364	Hazelmere Road D2
NO_2	2017	0.26	0.64	26.96	27.22	499037	180364	Hazelmere Road D2
NO_2	2018	0.18	0.45	26.96	27.14	499037	180364	Hazelmere Road D2
AQOs	40							

Note:

a. *Inclusive of Background concentration from the traffic assessment.*

Table 10.8 presents a summary of the predicted nitrogen dioxide concentrations, both PCs and PECs, at the modelled receptors locations.

The impact description of changes associated with the operations of the generator with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 10.8.

Table 10.8 The Long-Term (Annual Mean) Concentrations of NO_2 and Impact Description of Effects at Receptors – Scenario iii

Receptor		Predicted Annual Mean Concentration (µg/m³) – 2017 Met Data, and NO_2 Impact Description at Receptors						
ID	Name	Process Contribution (PC)	PC as percentage of AQO (%)	Background from the Traffic assessment	PEC[(a)] (PC +Background)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
R1	Princes Street	0.03	0.01	39.95	39.98	99.95	95-102% of AQO	Negligible
R2	Hazelmere Road	0.26	0.10	26.96	27.22	68.04	≤ 75 of AQO	Negligible
R3	Yew Tree Road	0.02	0.01	37.88	37.91	94.77	76-94% of AQO	Negligible
R4	Wexham Road	0.03	0.01	36.86	36.89	92.23	76-94% of AQO	Negligible
R5	Apsley House	0.02	0.01	33.76	33.78	84.45	76-94% of AQO	Negligible
R6	Cornwall House	0.01	<0.01	35.26	35.27	88.18	76-94% of AQO	Negligible
R7	Claycoats School	0.01	<0.01	31.14	31.14	77.86	76-94% of AQO	Negligible
R8	Windmill Care Centre	<0.01	<0.01	34.95	34.95	87.38	76-94% of AQO	Negligible
R9	Tuns Lane	<0.01	<0.01	34.57	34.58	86.44	76-94% of AQO	Negligible
R10	Paxton Avenue	<0.01	<0.01	44.32	44.32	110.80	>110 of AQO	Negligible
R11	Spackmans Way	<0.01	<0.01	43.30	43.30	108.25	103-109% of AQO	Negligible
R12	Slough and Eton CoE Business and Enterprise College	<0.01	<0.01	33.72	33.73	84.32	76-94% of AQO	Negligible
R13	Windsor Road	0.01	<0.01	35.54	35.55	88.87	76-94% of AQO	Negligible
R14	Saint Mary's Church of England Primary School	0.01	0.01	28.00	28.02	70.04	≤ 75 of AQO	Negligible
R15	16 John Taylor Court	<0.01	<0.01	37.96	37.97	94.92	76 – 94% of AQO	Negligible
R16	19 Farnham Road	<0.01	<0.01	30.19	30.19	75.48	≤ 75 of AQO	Negligible
R17	49 Stoke Road	0.01	<0.01	31.66	31.67	79.17	76-94% of AQO	Negligible
R18	50 Stoke Road	0.01	<0.01	30.22	30.24	75.59	76-94% of AQO	Negligible
R19	100 Wexham Road	0.08	0.03	35.05	35.13	87.83	76 – 94% of AQO	Negligible
R20	98 Broadmark Road	0.18	0.07	29.84	30.02	75.06	≤ 75 of AQO	Negligible
R21	25 Cannon Gate	0.05	0.02	26.05	26.10	65.26	≤ 75 of AQO	Negligible
R22	27 Clifton Road	0.02	0.01	33.03	33.05	82.63	76 – 94% of AQO	Negligible

Receptor		Predicted Annual Mean Concentration (µg/m³) – 2017 Met Data, and NO_2 Impact Description at Receptors						
ID	Name	Process Contribution (PC)	PC as percentage of AQO (%)	Background from the Traffic assessment	PEC[(a)] (PC +Background)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
R23	PR 1	0.07	0.03	37.74	37.81	94.53	76-94% of AQO	Negligible
R24	PR 2	0.05	0.02	33.96	34.02	85.04	76-94% of AQO	Negligible
R25	PR 3	0.06	0.02	32.14	32.20	80.51	76-94% of AQO	Negligible
R26	PR 4	0.08	0.03	31.77	31.84	79.61	76-94% of AQO	Negligible
R27	PR 5	0.08	0.03	32.67	32.75	81.87	76-94% of AQO	Negligible
R28	PR 6	0.09	0.03	31.71	31.79	79.49	76-94% of AQO	Negligible
R29	PR 7	0.07	0.03	31.57	31.64	79.10	76-94% of AQO	Negligible
R30	PR 8	0.09	0.03	31.68	31.77	79.42	76-94% of AQO	Negligible
AQO		**40 µg/m³**						

The percentage changes in process contribution of NO_2 relative to the AQAL as a result of the generator testing and the development traffic emissions at all existing and proposed receptor locations, with respect to NO_2 exposure, are determined to be 0.08% or less. The impact is determined to be 'negligible', based on the methodology outlined in Section 3. The effect of the proposed generator operations on the local area is considered to be insignificant.

The predicted long-term NO_2 concentrations from the proposed development are considered acceptable for the protection of human health.

Short-Term (1-Hour Mean) NO_2 – Scenario iii

It is anticipated that when all 54 generators are up running at same time the predicted short-term PC will above the short-term AQO of 200 µg/m^3 for the protection of human health.

However, the Objective allows 18 exceedances (or total of 18 hours) a year. As the emergency scenario is assessed to run 6 hours per year, therefore, the predicted short-term NO_2 concentrations from the generator operations (Emergence Scenario iii) are considered acceptable for the protection of human health.

In compliance with the working draft Environment Agency '*H.Tee 01/06/18 – Release to Industry DRAFT version 10.0*', notification to the EA of unplanned (and pre-notification of planned) continuous grid outage exceeding 18 hours will be required under a permit schedule 5 notification.

The notification in the permit will include that "a continuous emergency operation exceeding 18hours with 10 or more engines operating together is likely to breach the short-term AQO of 200 µg/m^3 for the protection of human health".

10.4 Scenario iv

For Scenario iv, the predicted impacts from the Scenarios 1, 2 and 3 are summed together and then are compared against the relevant AQO.

Long-Term (Annual Mean) NO_2 – Scenario iv

Table 10.9 presents a summary of the predicted nitrogen dioxide concentrations, both PCs and PECs, from the sum of Scenarios 1, 2 and 3 at the modelled receptors locations.

Table 10.9 The Long-Term (Annual Mean) Concentrations of NO_2 and Impact Description of Effects at Receptors – Scenario iv

Receptor		Predicted Annual Mean Concentration (µg/m³) – NO_2 Impact Description at Receptors						
ID	Name	Sum of Scenarios 1, 2 and 3 - Process Contribution (PC)	PC as percentage of AQO (%)	Background from the Traffic assessment	PEC[a] (PC +Background)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
R1	Princes Street	0.09	0.23	39.95	40.04	100.11	95-102% of AQO	Negligible
R2	Hazelmere Road	0.43	1.07	26.96	27.39	68.47	≤ 75 of AQO	Negligible
R3	Yew Tree Road	0.08	0.21	37.88	37.97	94.92	76-94% of AQO	Negligible
R4	Wexham Road	0.11	0.29	36.86	36.98	92.45	76-94% of AQO	Negligible
R5	Apsley House	0.09	0.22	33.76	33.85	84.62	76-94% of AQO	Negligible
R6	Cornwall House	0.03	0.07	35.26	35.29	88.23	76-94% of AQO	Negligible
R7	Claycoats School	0.02	0.04	31.14	31.16	77.89	76-94% of AQO	Negligible
R8	Windmill Care Centre	0.01	0.03	34.95	34.96	87.40	76-94% of AQO	Negligible
R9	Tuns Lane	0.01	0.03	34.57	34.58	86.46	76-94% of AQO	Negligible
R10	Paxton Avenue	0.01	0.02	44.32	44.33	110.81	>110 of AQO	Negligible
R11	Spackmans Way	0.01	0.03	43.30	43.31	108.27	103-109% of AQO	Negligible
R12	Slough and Eton CoE Business and Enterprise College	0.02	0.04	33.72	33.74	84.34	76-94% of AQO	Negligible
R13	Windsor Road	0.03	0.06	35.54	35.56	88.91	76-94% of AQO	Negligible
R14	Saint Mary's Church of England Primary School	0.05	0.13	28.00	28.05	70.13	≤ 75 of AQO	Negligible
R15	16 John Taylor Court	0.01	0.03	37.96	37.98	94.94	76 – 94% of AQO	Negligible
R16	19 Farnham Road	0.01	0.03	30.19	30.20	75.50	≤ 75 of AQO	Negligible
R17	49 Stoke Road	0.04	0.10	31.66	31.70	79.25	76-94% of AQO	Negligible
R18	50 Stoke Road	0.04	0.11	30.22	30.27	75.67	76-94% of AQO	Negligible
R19	100 Wexham Road	0.17	0.42	35.05	35.22	88.05	76 – 94% of AQO	Negligible
R20	98 Broadmark Road	0.32	0.81	29.84	30.16	75.41	≤ 75 of AQO	Negligible
R21	25 Cannon Gate	0.10	0.26	26.05	26.16	65.39	≤ 75 of AQO	Negligible
R22	27 Clifton Road	0.07	0.16	33.03	33.09	82.73	76 – 94% of AQO	Negligible

Receptor		Predicted Annual Mean Concentration (µg/m³) – NO_2 Impact Description at Receptors						
ID	Name	Sum of Scenarios 1, 2 and 3 - Process Contribution (PC)	PC as percentage of AQO (%)	Background from the Traffic assessment	PEC[(a)] (PC +Background)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
R23	PR 1	0.36	0.89	37.74	38.10	95.25	76-94% of AQO	Negligible
R24	PR 2	0.25	0.61	33.96	34.21	85.52	76-94% of AQO	Negligible
R25	PR 3	0.14	0.35	32.14	32.29	80.71	76-94% of AQO	Negligible
R26	PR 4	0.15	0.39	31.77	31.92	79.80	76-94% of AQO	Negligible
R27	PR 5	0.39	0.98	32.67	33.06	82.65	76-94% of AQO	Negligible
R28	PR 6	0.21	0.53	31.71	31.92	79.80	76-94% of AQO	Negligible
R29	PR 7	0.14	0.35	31.57	31.71	79.28	76-94% of AQO	Negligible
R30	PR 8	0.17	0.43	31.68	31.85	79.63	76-94% of AQO	Negligible
AQO		**40 µg/m³**						

The percentage changes in process contribution of NO_2 relative to the AQAL as a result of the combination of Scenarios 1,2 and 3; and the development traffic emissions at all existing and proposed receptor locations, with respect to NO_2 exposure, are determined to be 1.07% or less. The impact is determined to be 'negligible', based on the methodology outlined in Section 3. The effect of the proposed generator operations on the local area is considered to be insignificant.

The predicted long-term NO_2 concentrations from the proposed development are considered acceptable for the protection of human health.

Short-Term (1-Hour Mean) NO_2 – Scenario iv

The short-term emissions of NO_2 from the combination of scenarios 1 and 2 are compared against the relevant AQS, in Table 10.10.

Table 10.10 Summary of the Predicted Short-Term NO_2 Concentrations at Discrete Receptors – Scenario iv

Receptor		Predicted 1-hour Mean (99.79th Percentile) Concentration (µg/m³) – Sum of Scenarios 1 and 2				
ID	Name	Sum of Scenarios 1 and 2 Process Contribution (PC)	PC as %age of AQO	Background from the Traffic assessment	PEC[a] (PC +Background)	PEC as percentage of AQO
R1	Princes Street	0.09	0.23	39.95	40.04	100.11
R2	Hazelmere Road	0.43	1.07	26.96	27.39	68.47
R3	Yew Tree Road	0.08	0.21	37.88	37.97	94.92
R4	Wexham Road	0.11	0.29	36.86	36.98	92.45
R5	Apsley House	0.09	0.22	33.76	33.85	84.62
R6	Cornwall House	0.03	0.07	35.26	35.29	88.23
R7	Claycoats School	0.02	0.04	31.14	31.16	77.89
R8	Windmill Care Centre	0.01	0.03	34.95	34.96	87.40
R9	Tuns Lane	0.01	0.03	34.57	34.58	86.46
R10	Paxton Avenue	0.01	0.02	44.32	44.33	110.81
R11	Spackmans Way	0.01	0.03	43.30	43.31	108.27
R12	Slough and Eton CoE Business and Enterprise College	0.02	0.04	33.72	33.74	84.34
R13	Windsor Road	0.03	0.06	35.54	35.56	88.91
R14	Saint Mary's Church of England Primary School	0.05	0.13	28.00	28.05	70.13
R15	16 John Taylor Court	0.01	0.03	37.96	37.98	94.94
R16	19 Farnham Road	0.01	0.03	30.19	30.20	75.50
R17	49 Stoke Road	0.04	0.10	31.66	31.70	79.25
R18	50 Stoke Road	0.04	0.11	30.22	30.27	75.67
R19	100 Wexham Road	0.17	0.42	35.05	35.22	88.05

Receptor		Predicted 1-hour Mean (99.79th Percentile) Concentration (µg/m³) – Sum of Scenarios 1 and 2				
ID	Name	Sum of Scenarios 1 and 2 Process Contribution (PC)	PC as %age of AQO	Background from the Traffic assessment	PEC[(a)] (PC +Background)	PEC as percentage of AQO
R20	98 Broadmark Road	0.32	0.81	29.84	30.16	75.41
R21	25 Cannon Gate	0.10	0.26	26.05	26.16	65.39
R22	27 Clifton Road	0.07	0.16	33.03	33.09	82.73
R23	PR 1	0.36	0.89	37.74	38.10	95.25
R24	PR 2	0.25	0.61	33.96	34.21	85.52
R25	PR 3	0.14	0.35	32.14	32.29	80.71
R26	PR 4	0.15	0.39	31.77	31.92	79.80
R27	PR 5	0.39	0.98	32.67	33.06	82.65
R28	PR 6	0.21	0.53	31.71	31.92	79.80
R29	PR 7	0.14	0.35	31.57	31.71	79.28
R30	PR 8	0.17	0.43	31.68	31.85	79.63
AQOs	200 µg/m³					

Note:

(a) Inclusive of Background concentrations from the traffic assessment.

As shown in Table 10.10, there are no exceedances of the short-term NO_2 AQO at any of the identified sensitive receptors. The predicted impacts are significantly below the AQO of 200 µg/m³.

Therefore, the combined predicted NO_2 concentrations from the generator testing operations and traffic emissions are considered acceptable for the protection of human health.

11. Habitat Assessment – Combined Impacts from Traffic and Data Centre Generators

The habitat assessment has been undertaken for the identified nature conservation sites.

The combined long-term and short-term concentrations from three Data Centre Generator Scenarios (Scenarios 1, 2 and 3), and the traffic air quality assessment, among those ecological sites have been calculated for habitat assessment against relevant critical loads.

Combined Predicted Nitrogen Oxide Concentrations Compared to Critical Levels of Long-Term and Short-Term NO_x (as NO_2)

Table 11.1 presents a summary of the predicted combined long-term nitrogen oxide concentrations the ecological receptor locations.

Table 11.1 Summary of Combined Predicted NO_x (as NO_2) Concentrations for Protection of Vegetation and Ecosystems

Ecological Receptor		Predicted Maximum Annual Mean Concentration (µg/m³)						
		Process Contrib'tn (PC)					BC	PEC[b] (PC +Background)
		Generator Scenario i	Generator Scenario ii	Generator Scenario iii	Traffic Contribution	Sum		
E1	Railway Triangle	0.009	0.011	0.036	<0.01	0.046	45.55	45.60
E2	Eton Meadows	0.003	0.003	0.010	<0.01	0.020	35.46	35.48
E3	St Marys Churchyard	0.013	0.013	0.049	<0.01	0.059	46.88	46.94
E4	Upton Court Park	0.010	0.010	0.037	<0.01	0.047	45.2	45.25
E5	Langley Park	0.030	0.086	0.169	0.03	0.199	39.77	39.97
E6	Stoke Park	0.004	0.006	0.018	<0.01	0.028	31.35	31.38
E7	Herschel Park	0.012	0.011	0.044	<0.01	0.054	71.46	71.51
E8	Burnham Beeches	0.001	0.001	0.004	<0.01	0.014	22.5	22.51
	AQO/Critical Level (CL)	30[c]						

Note:

[a] Inclusive of Background concentrations. The Background concentration was derived from http://www.apis.ac.uk/.
[b] The Inclusive of Background concentration[5]. The Background concentration was derived from http://www.apis.ac.uk/.
[c] The AQO of 30 µg/m³ is the annual standard for the protection of vegetation and ecosystems; and
[d] The AQO of 75 µg/m³ is the daily standard for the protection of vegetation and ecosystems.

The annual mean NO_x (as NO_2) PEC at the ecological receptor locations are above the annual mean critical level of 30 µg/m³ for the protection of vegetation and Ecosystems at the receptors except at Burnham Beeches due to the higher background concentrations.

Table 11.2 Summary of Combined Predicted Short-Term NO_x (as NO_2) Concentrations for Protection of Vegetation and Ecosystems

Ecological Receptor		Predicted 24-hour Mean Concentration (µg/m³)						
		Process Contrib'tn (PC)					BC	PEC[b] (PC +Background)
		Generator Scenario i	Generator Scenario ii	Generator Scenario iii	Traffic Contribution	Sum		
E1	Railway Triangle	0.117	0.117	0.192	0.012	0.44	53.75	54.19
E2	Eton Meadows	0.031	0.031	0.019	0.004	0.09	41.84	41.93
E3	St Marys Churchyard	0.153	0.153	0.228	0.016	0.55	55.32	55.87
E4	Upton Court Park	0.132	0.132	12.698	0.030	12.99	53.34	66.33
E5	Langley Park	0.280	0.280	0.759	0.264	1.58	46.93	48.51
E6	Stoke Park	0.082	0.082	0.063	0.007	0.23	36.99	37.23
E7	Herschel Park	0.161	0.161	2.044	0.015	2.38	84.32	86.70
E8	Burnham Beeches	0.023	0.023	0.003	0.009	0.06	26.55	26.61
	AQO/Critical Level (CL)	75[c]						

Note:

[a] Inclusive of Background concentrations. The Background concentration was derived from http://www.apis.ac.uk/.
[b] The Inclusive of Background concentration[5]. The Background concentration was derived from http://www.apis.ac.uk/.
[c] The AQO of 30 µg/m³ is the annual standard for the protection of vegetation and ecosystems; and
[d] The AQO of 75 µg/m³ is the daily standard for the protection of vegetation and ecosystems.

The 24-hour mean NO_x (as NO_2) PEC at the ecological receptor locations are below the daily mean critical level of 75 µg/m³ for the protection of vegetation and Ecosystems, except at Herschel Park due to the higher background concentrations.

The significance of changes associated with the operations of the generators with respect to annual mean NO_x (as NO_2) exposure at the ecological receptors has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table 11.3.

Table 11.3 The Combined Long-Term (Annual Mean) Concentrations of NO_x (as NO_2) and Significance of Effects at Ecological Receptors

Receptor		Predicted Combined Annual Mean Concentration (µg/m³) and NO_2 Significance Impacts at Ecological Receptors						
		Combined Process Contrib'tn (PC)	PC as %age of AQO	BC	PEC[a] (PC +Background)	PEC as %age of AQO	PEC as %age of AQO	Significance
E1	Railway Triangle	0.046	0.155	45.55	45.60	151.8	≥110% of AQAL	Negligible
E2	Eton Meadows	0.020	0.068	35.46	35.48	118.2	≥110% of AQAL	Negligible
E3	St Marys Churchyard	0.059	0.197	46.88	46.94	156.3	≥110% of AQAL	Negligible
E4	Upton Court Park	0.047	0.156	45.2	45.25	150.7	≥110% of AQAL	Negligible
E5	Langley Park	0.199	0.664	39.77	39.97	132.6	≥110% of AQAL	Negligible

Receptor		Predicted Combined Annual Mean Concentration (µg/m³) and NO_2 Significance Impacts at Ecological Receptors						
		Combined Process Contrib'tn (PC)	PC as %age of AQO	BC	PEC[a] (PC +Background)	PEC as %age of AQO	PEC as %age of AQO	Significance
E6	Stoke Park	0.028	0.093	31.35	31.38	104.5	103-109% of AQAL	Negligible
E7	Herschel Park	0.054	0.178	71.46	71.51	238.2	≥110% of AQAL	Negligible
E8	Burnham Beeches	0.014	0.046	22.5	22.51	75.0	≤75% of AQAL	Negligible
	AQO/Critical Level (CL)	30[c]						

The percentage change in long-term process concentrations relative to the AQAL as a result of the proposed development at all ecological receptor locations, with respect to NO_x (as NO_2) exposure, are determined to be 0.664% or less. The significance is to be 'negligible' for all ecological receptor locations, based on the methodology outlined in Section 3.

As the percentage change in long-term process concentrations relative to the AQAL is below 1% of the relevant critical level for the protection of vegetation and Ecosystems, the long-term process contributions have been screened out against the relevant standard/critical level. The nitrogen deposition assessment has not been undertaken.

12. Mitigation

12.1 Construction Phase

The dust risk categories have been determined in Section 5 for each of the four construction activities. The assessment has determined that the potential impact description of dust emissions associated with the construction phase of the proposed development is 'medium risk' at the worst affected receptors.

Using the methodology described in Appendix A, appropriate site-specific mitigation measures associated with the determined level of risk can be found in Section 8.2 of the IAQM Guidance on the Assessment of Dust from Demolition and Construction. The mitigation measures have been divided into general measures applicable to all sites and measures applicable specifically to demolition, earthworks, construction and trackout.

The mitigation measures for the proposed development are detailed in Table 12.1 and will be implemented throughout the duration of the construction phase.

Table 12.1 Construction Phase Mitigation Measures

Communications
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
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.
Display the head or regional office contact information
Dust Management
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. The DMP may include monitoring of dust deposition, dust flux, realtime PM10 continuous monitoring and/or visual inspections.
Agree dust deposition, dust flux, or real-time PM10 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.
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.
Make the complaints log available to the local authority when asked.
Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.
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
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.
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period
Avoid site runoff of water or mud.
Keep site fencing, barriers and scaffolding clean using wet methods.
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.
Cover, seed or fence stockpiles to prevent wind whipping.
Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable

Ensure all vehicles switch off engines when stationary - no idling vehicles.
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
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
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
Use enclosed chutes and conveyors and covered skips
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods
Avoid bonfires and burning of waste materials.
Construction
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.

Following the implementation of the mitigation measures detailed in the tables above, the impact description of the construction phase is not considered to be significant.

12.2 Operational Mitigation Measures

As part of the scheme, the development is proposing the following measures which will help to reduce single occupancy cars and emissions:

- Electric vehicle charging provision for employees;
- 20-30 car club spaces; and,
- Contribution to Slough Council Car Club sharing.

13. Conclusions

WYG have conducted an air quality assessment for the proposed development at the former Akzo Nobel site, Petersfield Avenue, Slough.

Construction Air Quality Assessment

Appropriate site-specific mitigation measures have been recommended based on Section 8.2 of the IAQM Guidance on the Assessment of Dust from Demolition, Earthworks, Construction and Trackout. It is anticipated that with these appropriate mitigation measures in place, the risk of adverse effects due to emissions from the construction phase will not be significant.

Scenario One - Traffic Air Quality Assessment

The 2026 Development Scenario 1b assessment of the effect of emissions from traffic associated with the scheme, has determined that the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor is likely to be 0.14 µg/m^3 at Wexham Road (R4).

All modelled receptors predict NO_2 concentrations of below 60 µg/m^3 in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

For PM_{10}, the maximum predicted increase in the annual average exposure is likely to be 0.04 µg/m^3 at Princes Street (R1).

For $PM_{2.5}$, the maximum predicted increase in the annual average exposure is likely to be 0.02 µg/m^3 at Wexham Road (R4).

All modelled existing and proposed receptors are predicted to be below the respective AQOs for NO_2, PM_{10} and $PM_{2.5}$ in the 'do minimum' and 'do something Development Scenario 1b' scenarios.

The impact description of exposure for NO_2, PM_{10} and $PM_{2.5}$ is determined to be 'negligible' at all receptors, based on the methodology outlined in section 3.

The 2026 Development Scenario 2b assessment of the effect of emissions from traffic associated with the scheme, has determined that the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor is likely to be 0.14 µg/m^3 at Wexham Road (R4).

All modelled receptors predict NO_2 concentrations of below 60 µg/m^3 in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

For PM_{10}, the maximum predicted increase in the annual average exposure is likely to be 0.04 µg/m^3 at Princes Street (R1).

For $PM_{2.5}$, the maximum predicted increase in the annual average exposure is likely to be 0.02 µg/m^3 at Wexham Road (R4).

All modelled existing and proposed receptors are predicted to be below the respective AQOs for NO_2, PM_{10} and $PM_{2.5}$ in the 'do minimum' and 'do something Development Scenario 2b' scenarios.

The impact description of exposure for NO_2, PM_{10} and $PM_{2.5}$ is determined to be 'negligible' at all receptors, based on the methodology outlined in section 3.

The 2026 Development Scenario 3b assessment of the effect of emissions from traffic associated with the scheme, has determined that the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor is likely to be 0.08 µg/m^3 at Wexham Road (R4).

All modelled receptors predict NO_2 concentrations of below 60 µg/m^3 in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

For PM_{10}, the maximum predicted increase in the annual average exposure is likely to be 0.02 µg/m^3 at Wexham Road (R4).

For $PM_{2.5}$, the maximum predicted increase in the annual average exposure is likely to be 0.01 µg/m^3 at Wexham Road (R4).

All modelled existing and proposed receptors are predicted to be below the respective AQOs for NO_2, PM_{10} and $PM_{2.5}$ in the 'do minimum' and 'do something Development Scenario 3b' scenarios.

The impact description of exposure for NO_2, PM_{10} and $PM_{2.5}$ is determined to be 'negligible' at all receptors, based on the methodology outlined in section 3.

Scenario Two - Traffic Air Quality Assessment

The 2026 Development Scenario 1b assessment of the effect of emissions from traffic associated with the scheme, has determined that the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor is likely to be 0.14 µg/m^3 at Wexham Road (R4).

All modelled receptors predict NO_2 concentrations of below 60 µg/m^3 in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

For PM_{10}, the maximum predicted increase in the annual average exposure is likely to be 0.04 µg/m^3 at Princes Street (R1).

For $PM_{2.5}$, the maximum predicted increase in the annual average exposure is likely to be 0.02 µg/m^3 at Wexham Road (R4).

All modelled existing and proposed receptors are predicted to be below the respective AQOs for NO_2, PM_{10} and $PM_{2.5}$ in the 'do minimum' and 'do something Development Scenario 1b' scenarios.

The impact description of exposure for NO_2, PM_{10} and $PM_{2.5}$ is determined to be 'negligible' at all receptors, based on the methodology outlined in section 3.

The 2026 Development Scenario 2b assessment of the effect of emissions from traffic associated with the scheme, has determined that the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor is likely to be 0.14 µg/m^3 at Wexham Road (R4).

All modelled receptors predict NO_2 concentrations of below 60 µg/m^3 in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

For PM_{10}, the maximum predicted increase in the annual average exposure is likely to be 0.04 µg/m^3 at Princes Street (R1).

For $PM_{2.5}$, the maximum predicted increase in the annual average exposure is likely to be 0.02 µg/m^3 at Wexham Road (R4).

All modelled existing and proposed receptors are predicted to be below the respective AQOs for NO_2, PM_{10} and $PM_{2.5}$ in the 'do minimum' and 'do something Development Scenario 2b' scenarios.

The impact description of exposure for NO_2, PM_{10} and $PM_{2.5}$ is determined to be 'negligible' at all receptors, based on the methodology outlined in section 3.

The 2026 Development Scenario 3b assessment of the effect of emissions from traffic associated with the scheme, has determined that the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor is likely to be 0.08 µg/m^3 at Wexham Road (R4).

All modelled receptors predict NO_2 concentrations of below 60 µg/m^3 in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

For PM_{10}, the maximum predicted increase in the annual average exposure is likely to be 0.02 µg/m^3 at Wexham Road (R4).

For $PM_{2.5}$, the maximum predicted increase in the annual average exposure is likely to be 0.01 µg/m^3 at Wexham Road (R4).

All modelled existing and proposed receptors are predicted to be below the respective AQOs for NO_2, PM_{10} and $PM_{2.5}$ in the 'do minimum' and 'do something Development Scenario 3b' scenarios.

The impact description of exposure for NO_2, PM_{10} and $PM_{2.5}$ is determined to be 'negligible' at all receptors, based on the methodology outlined in section 3.

Scenario 3b – Cumulative Air Quality Assessment of Traffic and Data Centre Generators

Four generator operation scenarios at Data Centre have been assessed:

- Scenario i –The generators will be tested fortnightly, with a testing period of 30 minutes at 25% load for each engine. One generator will be tested at a time and the testing will be taking place only at day-time.
- Scenario ii –The generators will be tested twice a year with a testing period of 1.5 hour at 100% load for each engine/generator. One generator will be tested at a time and the testing will be taking place only at day-time.
- Scenario iii– this is emergency scenario. The all 54 generators will be in operation, among them 50 generators (including 2 generators for office building) at 100% load and all 4 Catchers generators at 25% load. All generators will be operating continuously for 6 hours for the emergency scenario.
- Scenario iv – Combined Scenario
  The scenario considers the combined operations of all 3 scenarios above.

The assessment results indicated that the predicted NO_2 annual mean PECs are all below the relevant long-term AQS of 40 µg/m^3 for the protection of human health for all 4 scenarios (generator testing/operating scenarios). The effect of the proposed generator operations of all 4 scenarios on the local area is considered to be insignificant. The predicted long-term NO_2 concentrations from the proposed development are considered acceptable for the protection of human health.

The predicted NO_2 short-term PECs are all below the relevant short-term AQS of 200 µg/m^3 for the protection of human health for all 4 scenarios. The notification in the permit, however, will include that "a continuous emergency operation exceeding 18hours with 10 or more engines operating together is likely to breach the short-term AQO of 200 µg/m^3 for the protection of human health".

Habitat Assessment - Cumulative Air Quality Assessment of Traffic and Data Centre Generators

The percentage change in long-term process concentrations relative to the AQAL is below 1% of the relevant critical level for the protection of vegetation and Ecosystems. Therefore, the long-term process contributions have been screened out against the relevant standard/critical level. The nitrogen deposition assessment has not been undertaken.

In conclusion, following the adoption of the recommended mitigation measures, the proposed development is not considered to be contrary to any of the national and local planning policies.

Figures

Figure 1 Air Quality Assessment Area

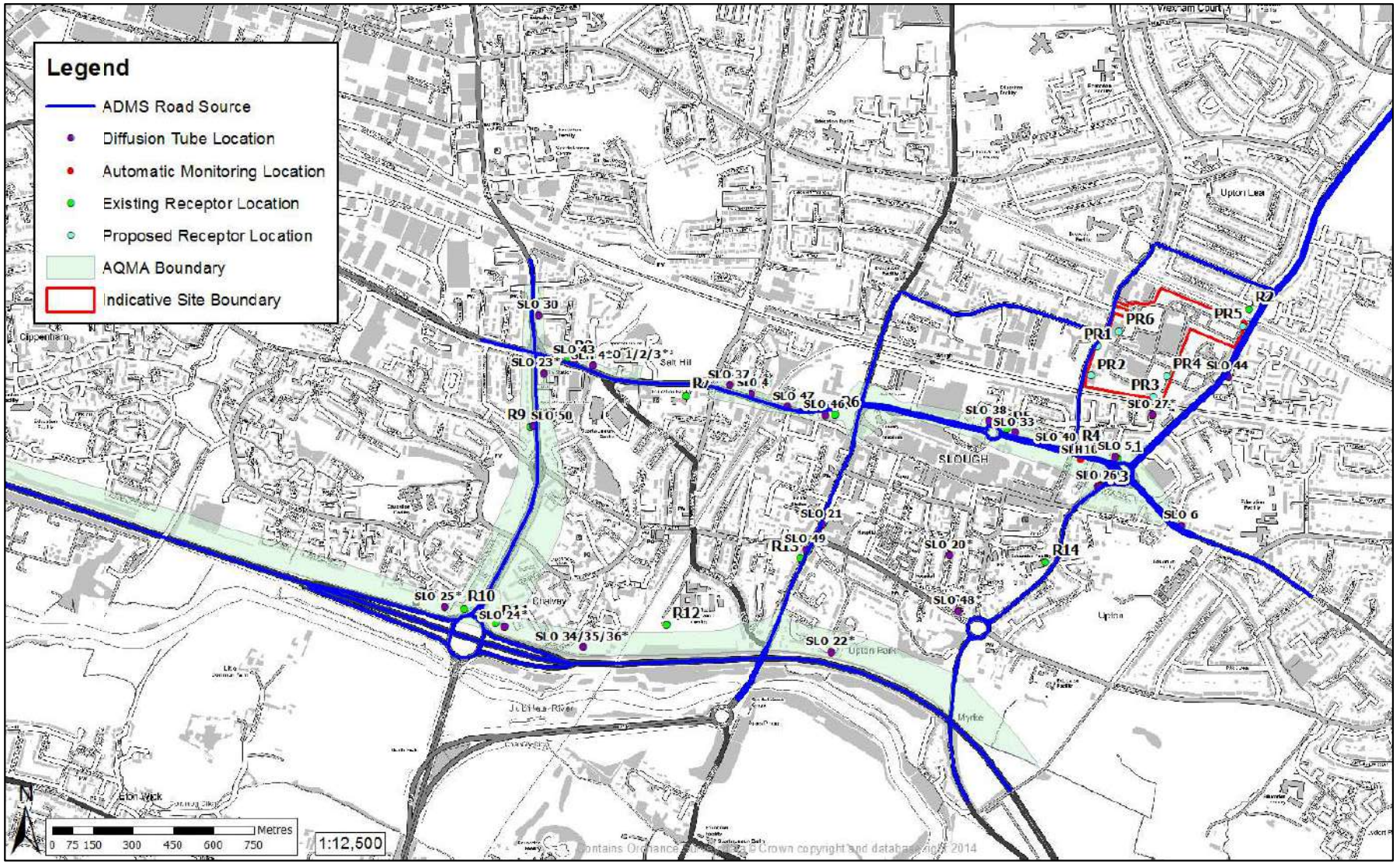
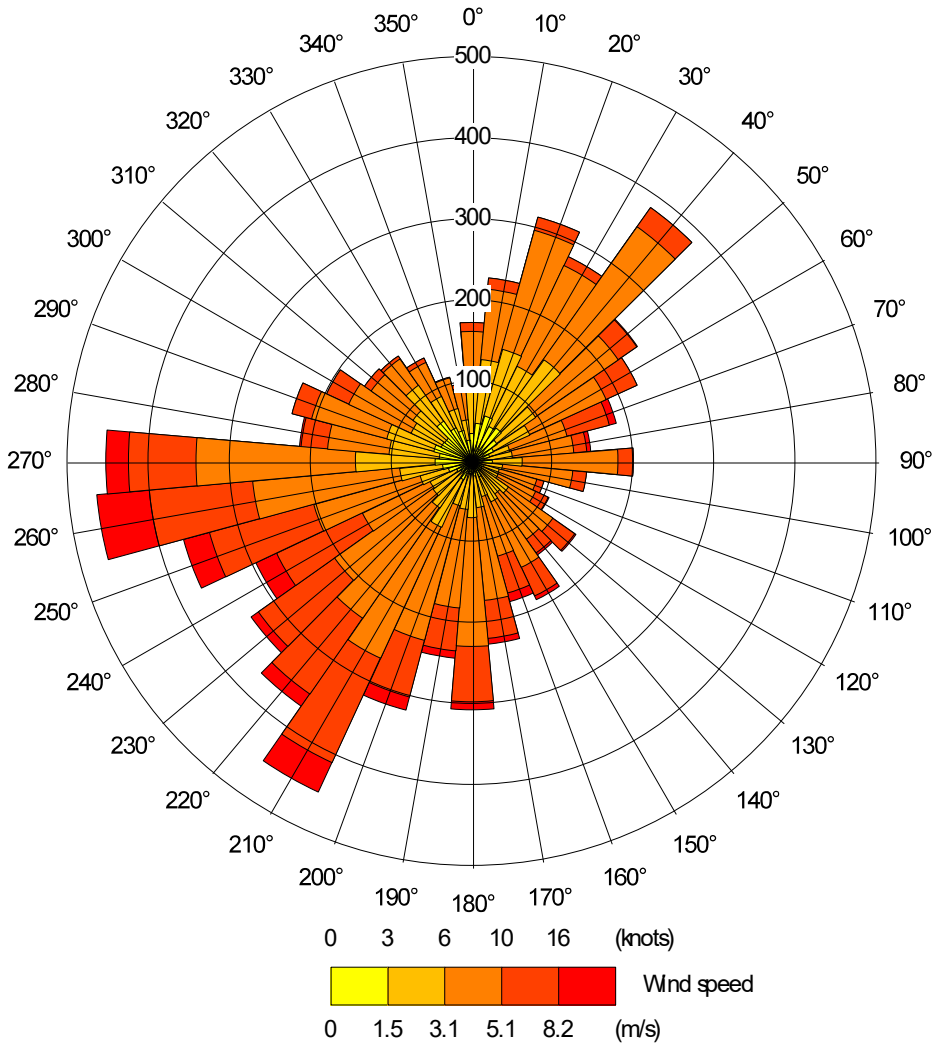
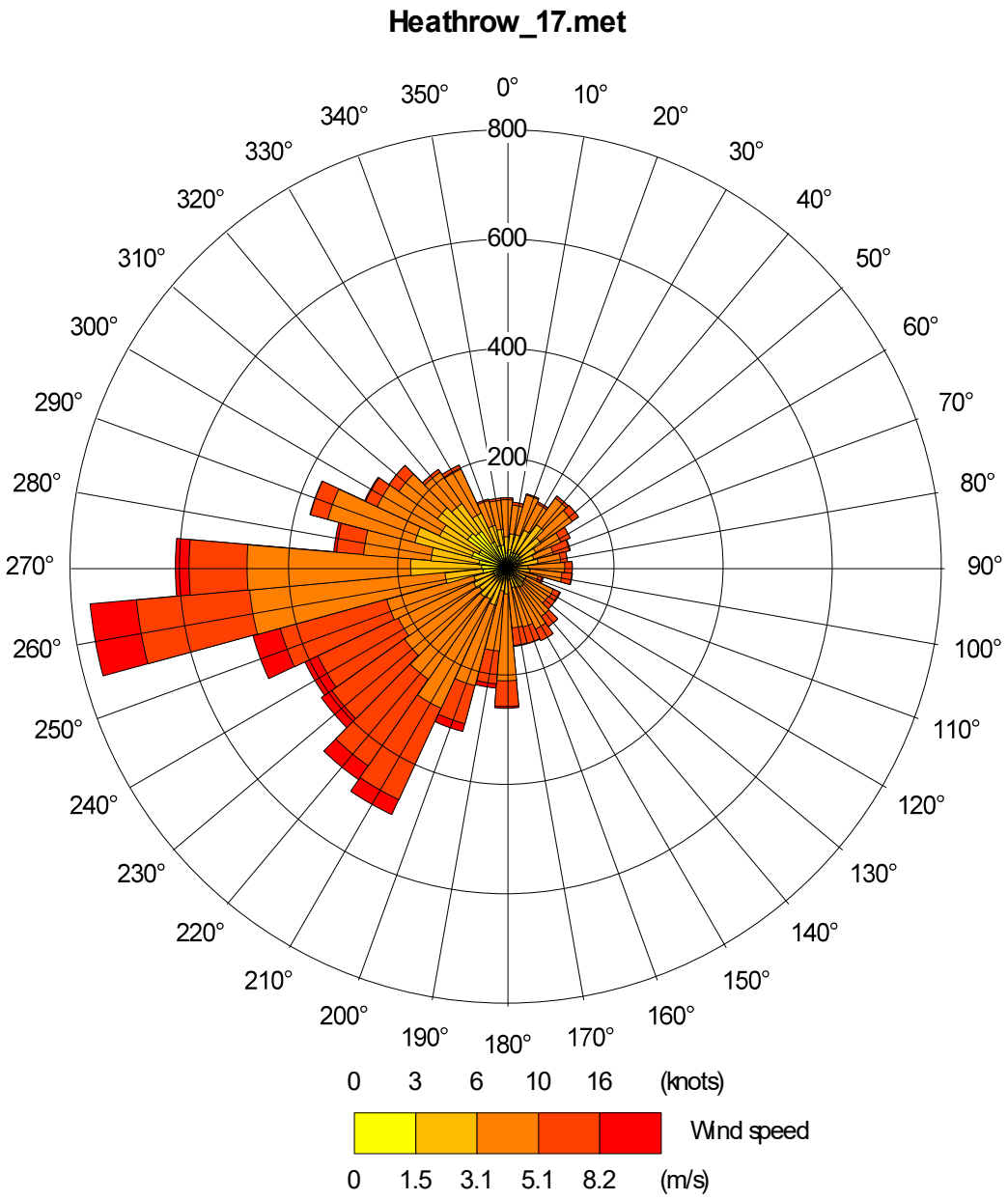


Figure 2 Heathrow Airport 2018 Meteorological Station Wind Rose

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Wind speed
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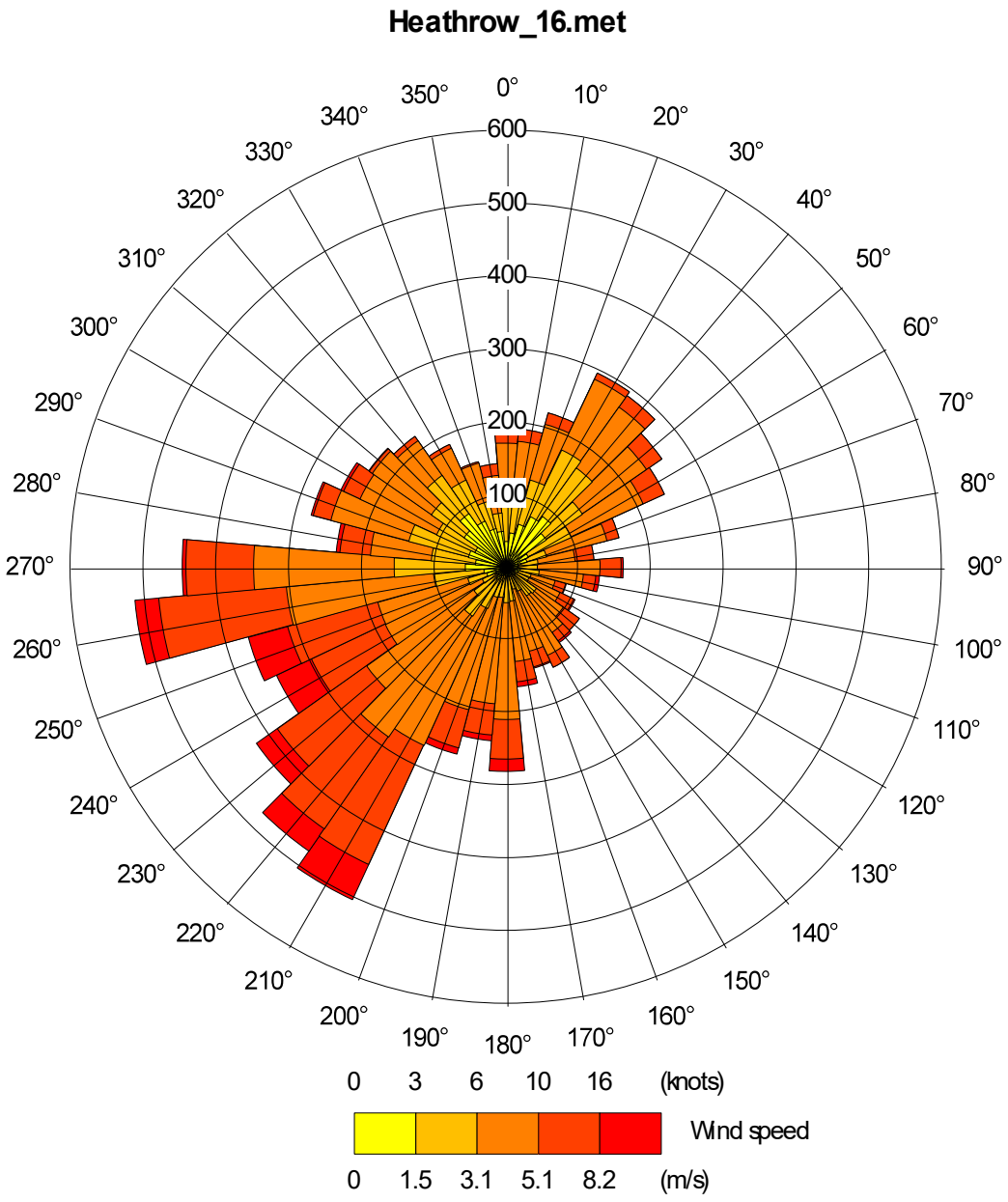


Figure 3 Traffic NO_2 Contour Plot – Data Centre Traffic Development Scenario 3b

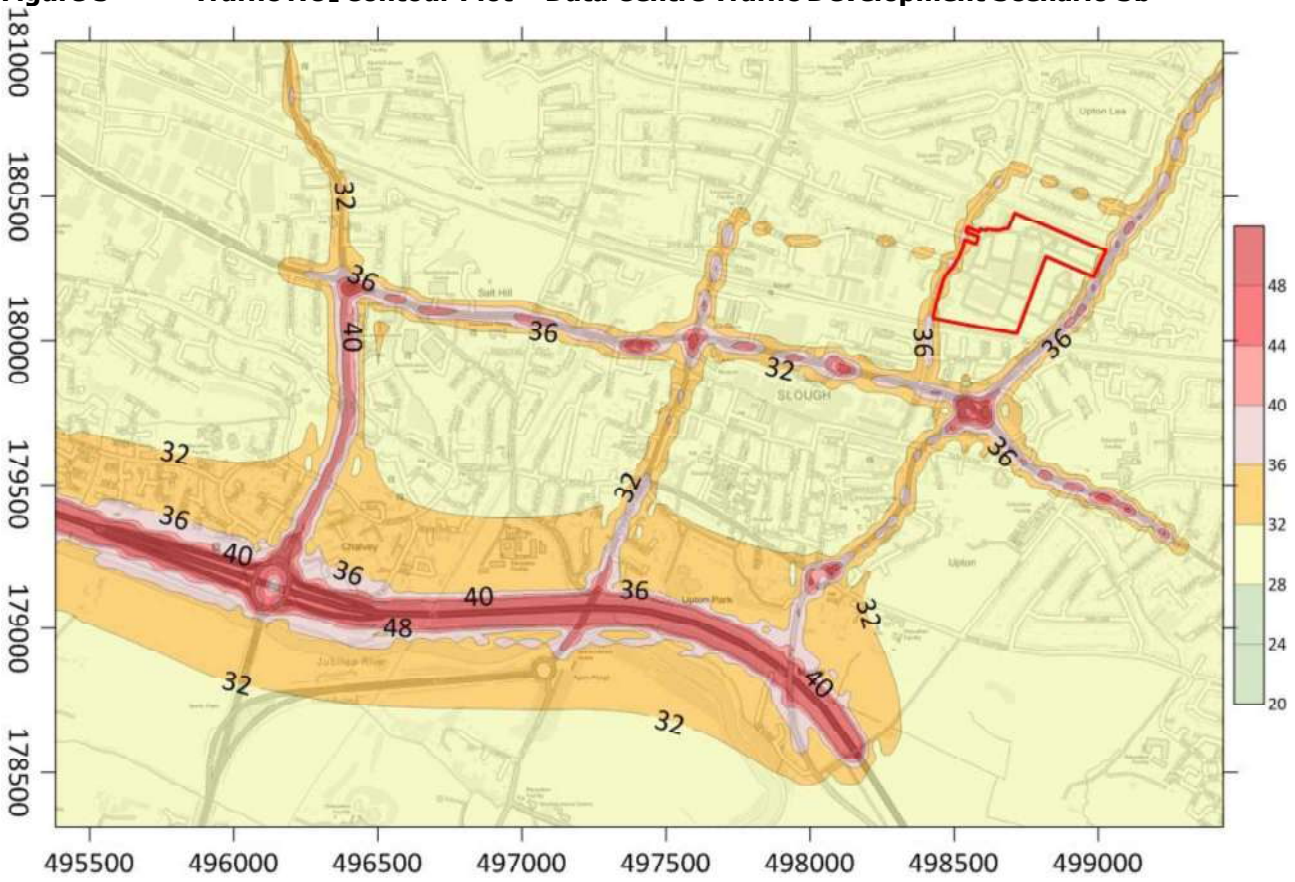


Figure 4 Traffic NO_2 Contour Plot – Development Scenario Mix 1

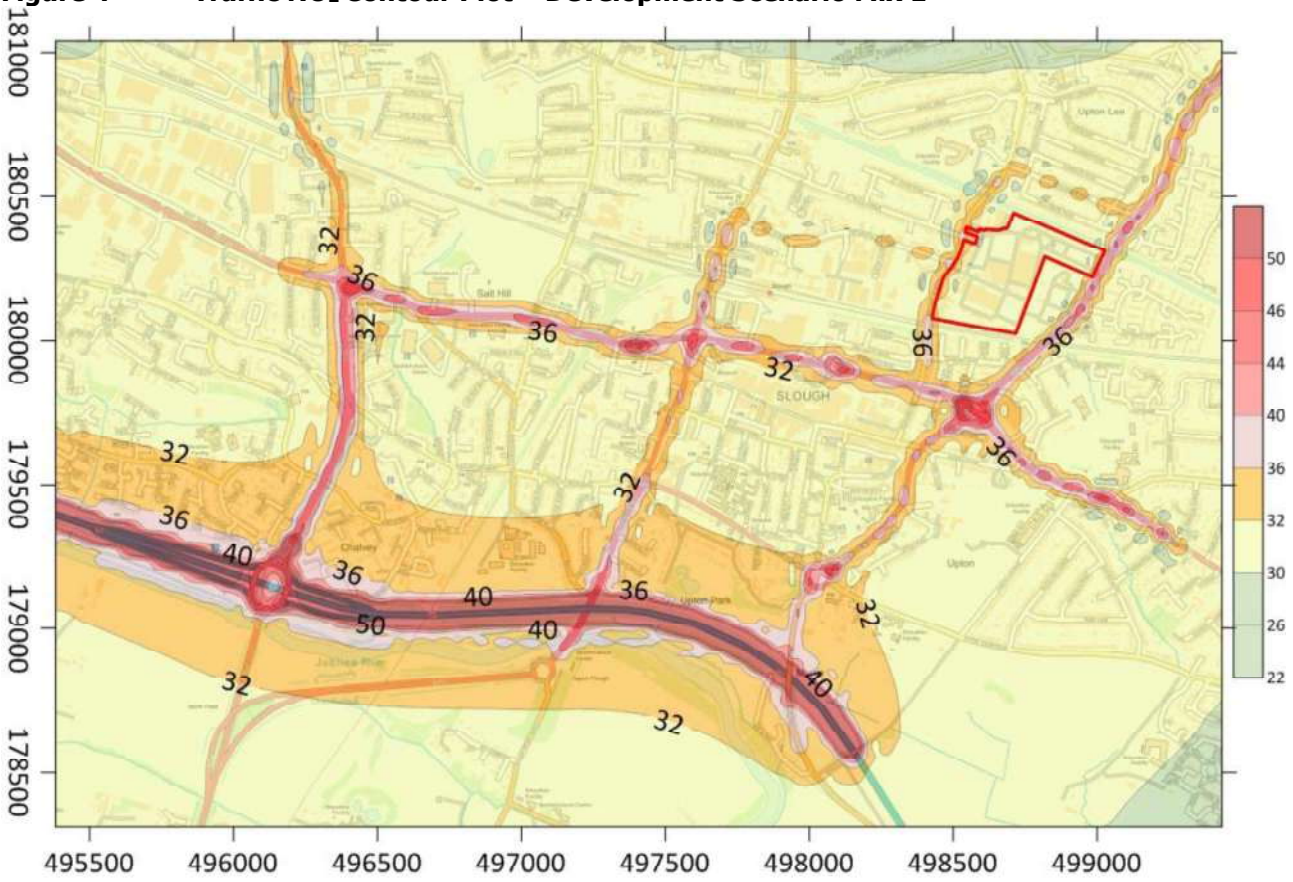


Figure 5 Traffic NO_2 Contour Plot – Development Scenario Mix 2

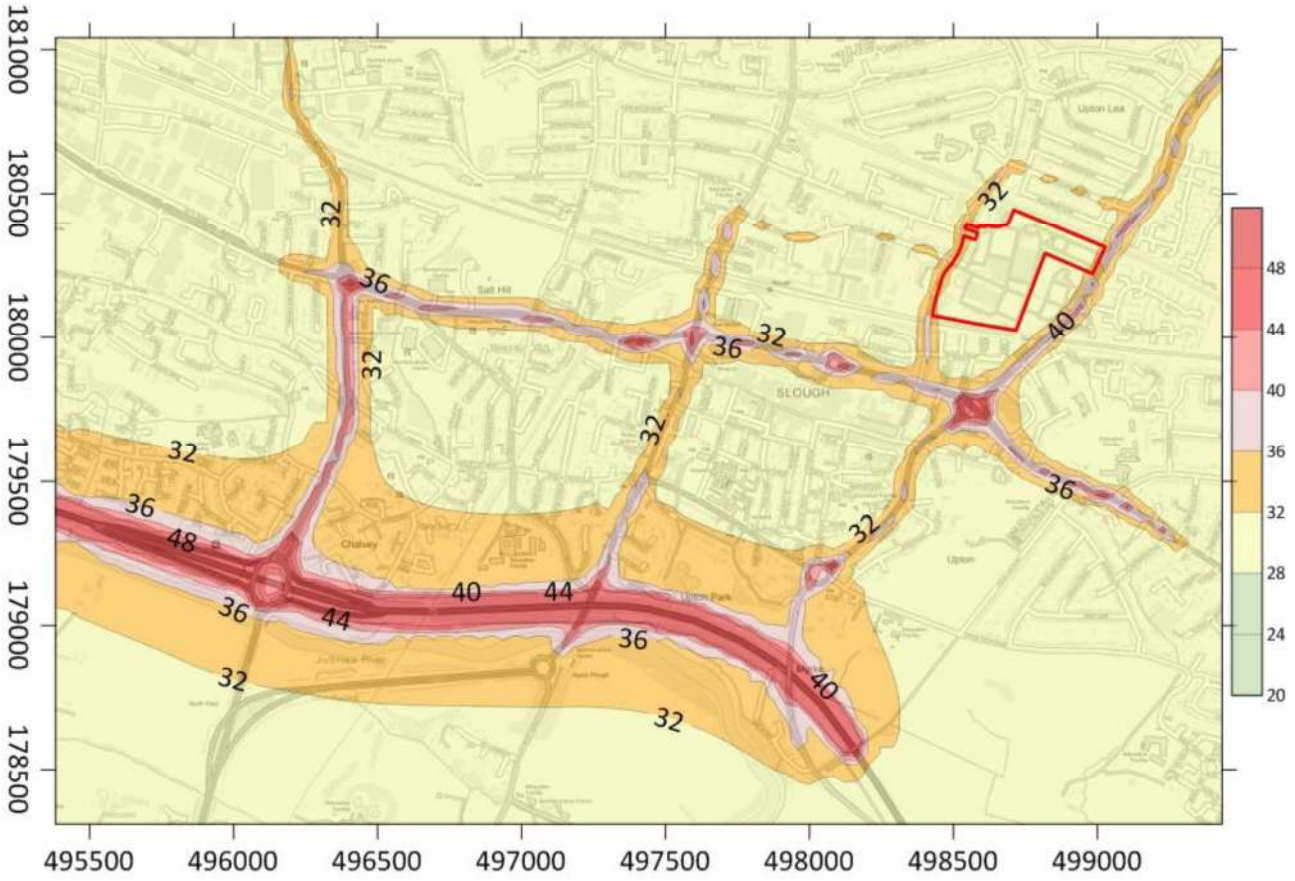


Figure 6 Data Centre Generator Emission Points and Buildings

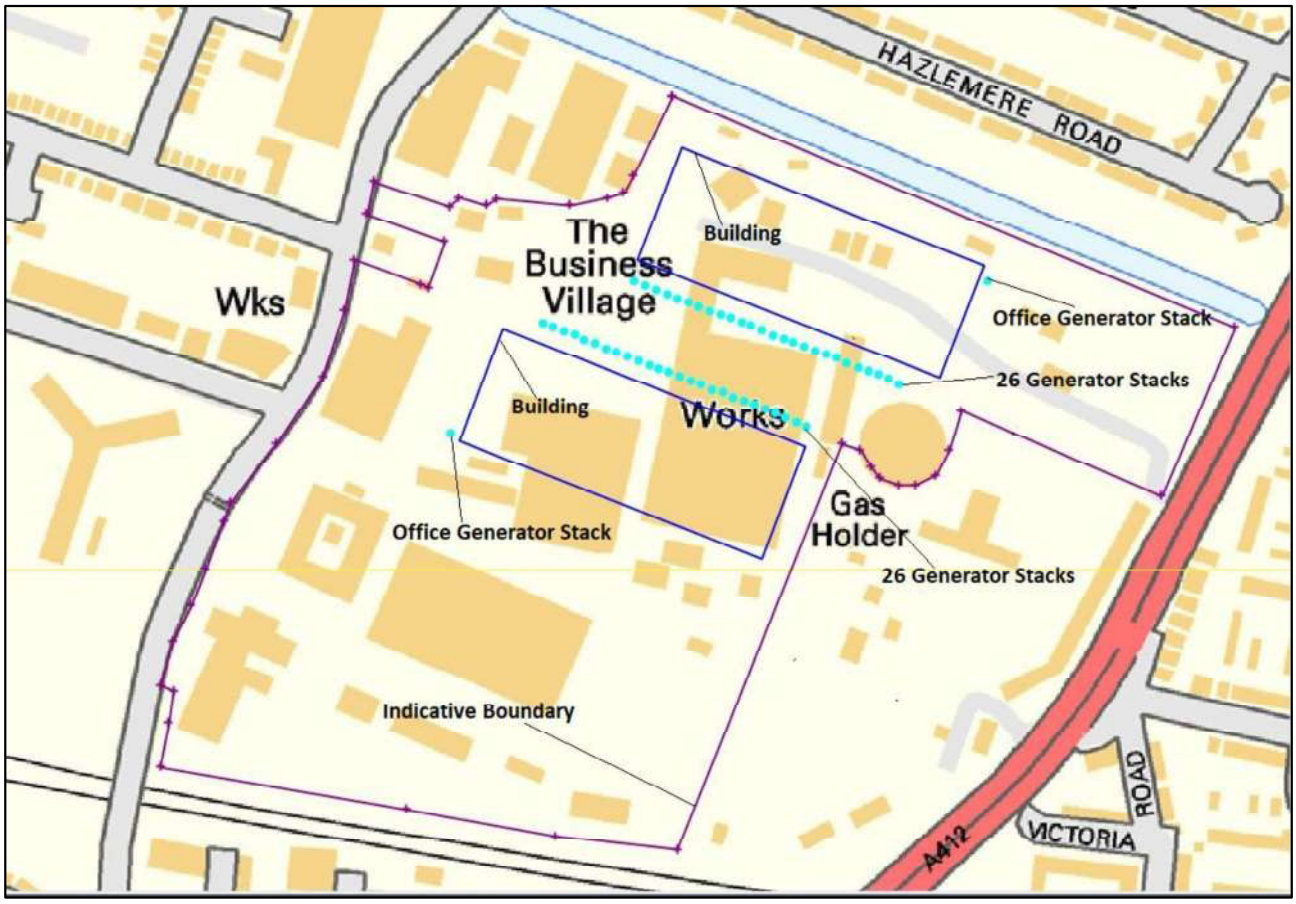


Figure 7 Predicted Long-Term NO_2 Concentrations (PC) from Generator Testing Scenario ii (2018 Met Data)

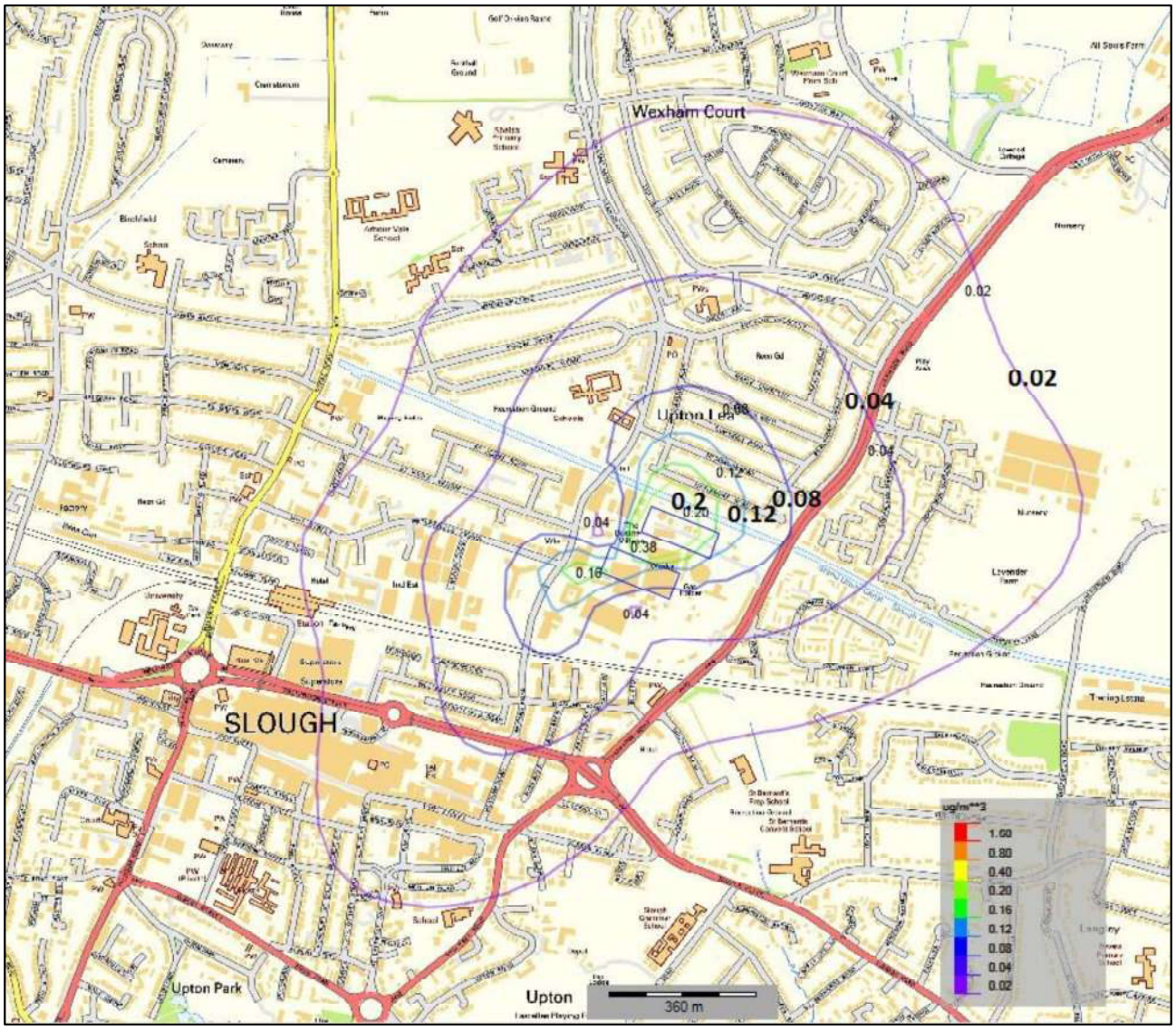
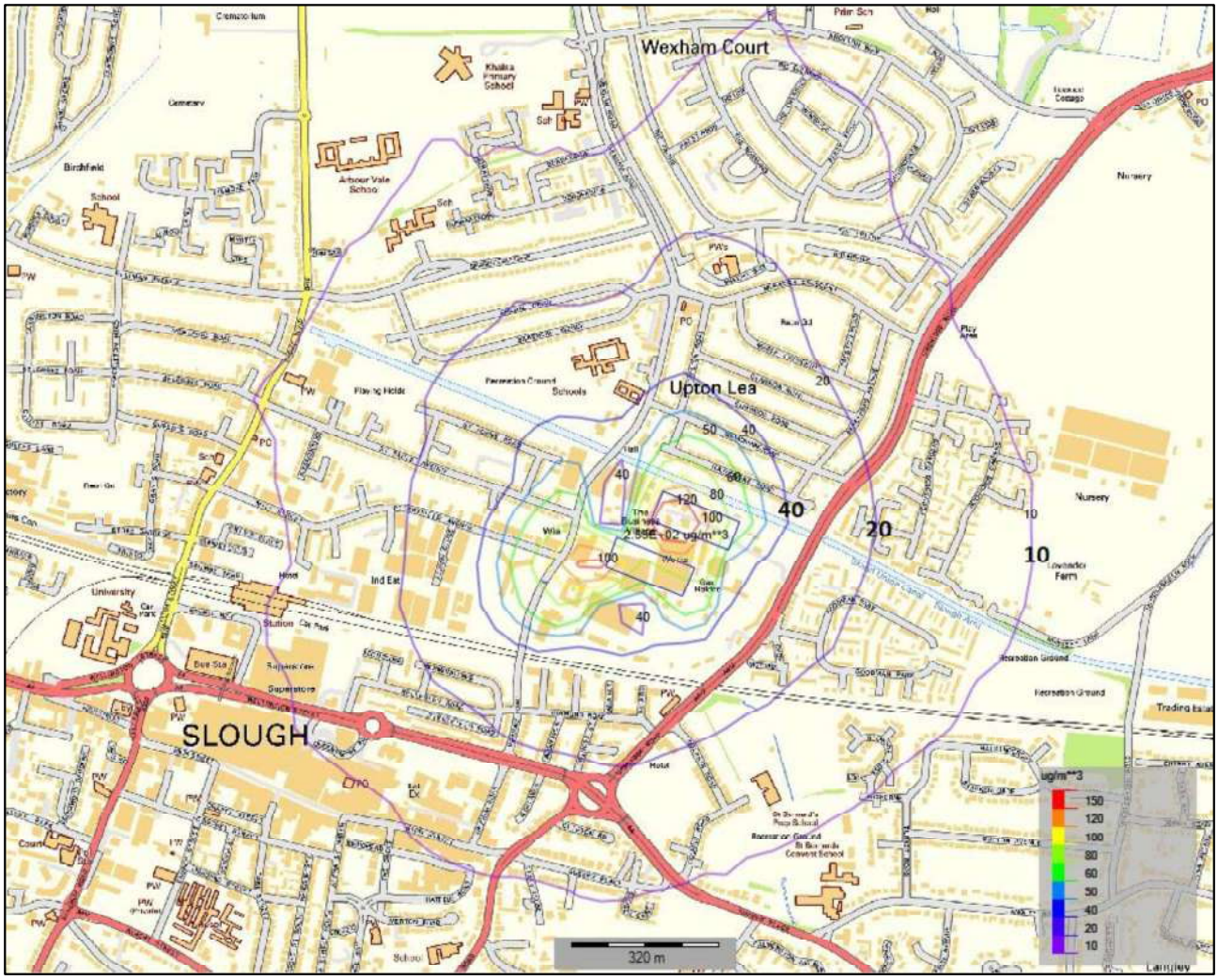


Figure 8 Predicted Short-Term NO_2 Concentrations (PC, 1-Hour Mean, 99.79th Percentile) from Generator Testing Scenario ii (2016 Met Data)



Appendix A Construction Phase Assessment Methodology

The following information sets out the adopted approach to the construction phase impact assessment in accordance with the aforementioned IAQM guidance[4].

Step 1 – Screen the Requirement for a more Detailed Assessment

An assessment is required if there are sensitive receptors within 350m of the site boundary, within 50m of the route(s) used by construction vehicles on the surrounding road network, or within 500m from the site entrance. A detailed assessment is also required if there is an ecological receptor within 50m of the site boundary.

Step 2A – Define the Potential Dust Emission Magnitude

Demolition

The dust emission magnitude for the demolition phase has been determined based on the below criteria:

- *Large*: Total building volume >50 000m^3, potentially dusty construction (e.g. concrete), on-site crushing and screening, demolition activities >20m above ground level;
- *Medium*: Total building volume 20 000m^3 – 50 000m^3, potentially dusty construction material, demolition activities 10-20m above ground level; and,
- *Small*: Total building volume <20 000m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10m above ground, demolition during wetter months.

Earthworks

The dust emission magnitude for the planned earthworks has been determined based on the below criteria:

- *Large:* Total site area >10 000m^2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), > 10 heavy earth moving vehicles active at any one time, formation of bunds >8m in height, total material moved >100 000 tonnes;
- *Medium*: Total site area 2 500m^2 – 10 000m^2, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 4m-8m in height, total material moved 20 000 tonnes – 100 000 tonnes; and
- *Small*: Total site area <2 500 m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4 m in height, total material moved <10 000 tonnes, earthworks during wetter months.

Construction

The dust emission magnitude for the construction phase has been determined based on the below criteria:

- *Large:* Total building volume >100 000m^3, on site concrete batching; sandblasting
- *Medium:* Total building volume 25 000m^3 – 100 000m^3, potentially dusty construction material (e.g. concrete), on site concrete batching; and,
- *Small:* Total building volume <25 000m^3, construction material with low potential for dust release (e.g. metal cladding or timber).

Trackout

The dust emission magnitude for trackout has been determined based on the below criteria:

- *Large:* >50 HGV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100m;

[4] Institute of Air Quality Management 2014. *Guidance on the Assessment of dust from demolition and construction.*

- *Medium:* 10-50 HGV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50m – 100m; and,
- *Small:* <10 HGV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50m.

Step 2B – Defining the Sensitivity of the Area

Sensitivities of People to Dust Soiling Effects

- *High:*
  - Users can reasonably expect an enjoyment of a high level of amenity;
  - The appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably expect to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land; and,
  - Indicative examples include dwellings, museums and other culturally important collections, medium and long term car parks and car showrooms.
- *Medium:*
  - Users can reasonably expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home;
  - The appearance, aesthetics or value of their property could be diminished by soiling;
  - The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land; and,
  - Indicative examples include parks and places of work.
- *Low:*
  - The enjoyment of amenity would not reasonably be expected;
  - Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling;
  - There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land; and,
  - Indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.

The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout, using the following table:

Table A1– Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<350
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

Note – The likely routes the construction traffic will use should also be included to enable the presence of trackout receptors to be included in the assessment. As a general guidance, without site-specific mitigation, trackout may occur along the public highway up to 500 m from large sites (as defined in step 2A), 200 m from medium sites and 50 m from small sites, as measured from the site exit.

Sensitivities of People to the Health Effects of PM_{10}

- *High:*
  - Locations where members of the public are exposed over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day);
  - Indicative examples include residential properties. Hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.
- *Medium:*
  - Locations where the people exposed are workers, and exposure is over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day); and,
  - Indicative examples include office and shop workers, but will generally not include workers occupationally exposed to PM_{10}, as protection is covered by Health and Safety at Work legislation.
- *Low:*
  - Locations where human exposure is transient; and,
  - Indicative examples include public footpaths, playing fields, parks and shopping streets.

The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout, using the following table:

Table A2- Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number of Receptors	Distance from the Source (m)				
			<20	<50	<100	<200	<350
High	>32 µg/m^3	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28 – 32 µg/m^3	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24 – 28 µg/m^3	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24 µg/m^3	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	-	>10	High	Medium	Low	Low	Low
	-	1-10	Medium	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

Note – The likely routes the construction traffic will use should also be included to enable the presence of trackout receptors to be included in the assessment. As a general guidance, without site-specific mitigation, trackout may occur along the public highway up to 500 m from large sites (as defined in step 2A), 200 m from medium sites and 50 m from small sites, as measured from the site exit.

Sensitivities of Receptors to Ecological Effects

- *High:*
  - Locations with an international or national designation and the designated features may be affected by dust soiling;
  - Locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List For Great Britain; and,
  - Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.

- *Medium:*
  - Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown;
  - Locations with a national designation where the features may be affected by dust deposition; and,
  - Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features.
- *Low:*
  - Locations with a local designation where the features may be affected by dust deposition; and,
  - Indicative example is a local Nature Reserve with dust sensitive features.

The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout, using the following table:

Table A3 – Sensitivity of the Area to Ecological Impacts

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

Note – The likely routes the construction traffic will use should also be included to enable the presence of trackout receptors to be included in the assessment. As a general guidance, without site-specific mitigation, trackout may occur along the public highway up to 500 m from large sites (as defined in step 2A), 200 m from medium sites and 50 m from small sites, as measured from the site exit.

Step 2C – Defining the Risk of Impacts

The risk of impacts with no mitigation is determined by combining the dust emission magnitude determined in Step 2A and the sensitivity of the area determined in Step 2B.

The following tables provide a method of assigning the level of risk for each activity.

Demolition

Table A4 – Risk of Dust Impacts, Demolition

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Earthworks

Table A5 – Risk of Dust Impacts, Earthworks

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Construction

Table A6 – Risk of Dust Impacts, Construction

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Trackout

Table A7 – Risk of Dust Impacts, Trackout

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

Step 3 – Site Specific Mitigation

The dust risk categories for each of the four activities determined in Step 2C should be used to define the appropriate, site-specific mitigation measures to be adopted.

These mitigation measures are contained within section 8.2 of the IAQM Guidance on the Assessment of Dust from Demolition and Construction.

Appendix B Theoretical Scenario (No Reduction in UK Fleet Emissions over Time) Results

Scenario One Assessment Results

Do Something Development Scenario 1b

Nitrogen Dioxide

Table B1 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B1 Predicted Annual Average Concentrations of NO_2 at Receptor Locations

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	39.94	39.99	0.05
R2	Hazelmere Road	26.62	26.95	26.98	0.03
R3	Yew Tree Road	36.63	37.87	37.90	0.03
R4	Wexham Road	35.56	36.74	36.96	0.23
R5	Apsley House	32.82	33.75	33.78	0.03
R6	Cornwall House	34.41	35.26	35.27	0.01
R7	Claycoats School	30.64	31.14	31.15	0.01
R8	Windmill Care Centre	34.14	34.95	34.96	0.01
R9	Tuns Lane	33.76	34.57	34.58	0.01
R10	Paxton Avenue	42.80	44.32	44.33	0.01
R11	Spackmans Way	41.90	43.29	43.30	0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	33.72	33.72	<0.01
R13	Windsor Road	34.72	35.54	35.55	0.01
R14	Saint Mary's Church of England Primary School	27.57	28.00	28.01	0.01
R15	16 John Taylor Court	36.91	37.96	37.97	0.01
R16	19 Farnham Road	29.77	30.19	30.19	<0.01
R17	49 Stoke Road	31.07	31.66	31.66	<0.01
R18	50 Stoke Road	29.79	30.22	30.22	<0.01
R19	100 Wexham Road	34.51	34.96	35.11	0.15
R20	98 Broadmark Road	29.20	29.75	29.88	0.13
R21	25 Cannon Gate	25.74	26.02	26.07	0.05
R22	27 Clifton Road	32.11	33.00	33.05	0.05
PR1	Proposed Receptor	-	-	37.82	-
PR2	Proposed Receptor	-	-	33.99	-
PR3	Proposed Receptor	-	-	32.15	-
PR4	Proposed Receptor	-	-	31.78	-
PR5	Proposed Receptor	-	-	27.78	-

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
PR6	Proposed Receptor	-	-	32.60	-
PR7	Proposed Receptor	-	-	31.56	-
PR8	Proposed Receptor	-	-	31.67	-
Annual Mean AQO: 40 µg/m³					

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table B1, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.23 µg/m³ at Wexham Road (R4).

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B2.

Table B2 Scenario One_Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 1b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.05	0.12	0%	95-102% of AQO	Negligible
R2	0.03	0.07	0%	≤75% of AQO	Negligible
R3	0.03	0.07	0%	95-102% of AQO	Negligible
R4	0.23	0.57	1%	76-94% of AQO	Negligible
R5	0.03	0.07	0%	76-94% of AQO	Negligible
R6	0.01	0.02	0%	76-94% of AQO	Negligible
R7	0.01	0.02	0%	76-94% of AQO	Negligible
R8	0.01	0.02	0%	76-94% of AQO	Negligible
R9	0.01	0.02	0%	76-94% of AQO	Negligible
R10	0.01	0.02	0%	≥110 of AQO	Negligible
R11	0.01	0.02	0%	103-109 of AQO	Negligible
R12	<0.01	<0.01	0%	76-94% of AQO	Negligible
R13	0.01	0.02	0%	76-94% of AQO	Negligible
R14	0.01	0.02	0%	≤75% of AQO	Negligible
R15	0.01	0.02	0%	95-102% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	76-94% of AQO	Negligible
R18	<0.01	<0.01	0%	76-94% of AQO	Negligible
R19	0.15	0.37	0%	76-94% of AQO	Negligible

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R20	0.13	0.32	0%	≤75% of AQO	Negligible
R21	0.05	0.12	0%	≤75% of AQO	Negligible
R22	0.05	0.12	0%	76-94% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table B3 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B3 Scenario 1Predicted Annual Average Concentrations of PM_{10} at Receptor Locations – Development Scenario 1b

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	18.98	19.24	19.25	0.01
R2	Hazelmere Road	16.97	17.03	17.03	0.01
R3	Yew Tree Road	18.64	18.86	18.87	<0.01
R4	Wexham Road	18.63	18.85	18.90	0.04
R5	Apsley House	17.98	18.13	18.14	<0.01
R6	Cornwall House	19.29	19.44	19.45	<0.01
R7	Claycoats School	17.80	17.89	17.89	<0.01
R8	Windmill Care Centre	18.51	18.66	18.66	<0.01
R9	Tuns Lane	19.01	19.14	19.14	<0.01
R10	Paxton Avenue	20.07	20.28	20.28	<0.01
R11	Spackmans Way	19.82	2<0.01	2<0.01	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.45	18.45	<0.01
R13	Windsor Road	19.11	19.24	19.24	<0.01
R14	Saint Mary's Church of England Primary School	17.10	17.17	17.17	<0.01
R15	16 John Taylor Court	18.79	18.97	18.97	<0.01
R16	19 Farnham Road	17.65	17.72	17.72	<0.01
R17	49 Stoke Road	17.75	17.85	17.85	<0.01
R18	50 Stoke Road	17.55	17.62	17.62	<0.01
R19	100 Wexham Road	19.10	19.19	19.22	0.03
R20	98 Broadmark Road	17.39	17.48	17.50	0.02
R21	25 Cannon Gate	16.89	16.94	16.95	0.01
R22	27 Clifton Road	17.99	18.15	18.16	0.01

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
PR1	Proposed Receptor	-	-	19.79	-
PR2	Proposed Receptor	-	-	18.96	-
PR3	Proposed Receptor	-	-	18.58	-
PR4	Proposed Receptor	-	-	18.51	-
PR5	Proposed Receptor	-	-	17.23	-
PR6	Proposed Receptor	-	-	18.69	-
PR7	Proposed Receptor	-	-	18.48	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table B3, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is 0.04 µg/m³ at Wexham Road (R4).

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B4.

Table B4 Scenario 1 Impact Description of Effects at Key Receptors – Development Scenario 1b

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.01	0.02	0%	≤75% of AQO	Negligible
R2	0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.04	0.10	0%	≤75% of AQO	Negligible
R5	<0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.03	0.08	0%	≤75% of AQO	Negligible
R20	0.02	0.06	0%	≤75% of AQO	Negligible
R21	0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.01	0.03	0%	≤75% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table B5 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B5 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	13.08	13.24	13.24	0.01
R2	Hazelmere Road	11.87	11.90	11.91	<0.01
R3	Yew Tree Road	12.88	13.01	13.01	<0.01
R4	Wexham Road	12.86	12.99	13.01	0.02
R5	Apsley House	12.48	12.57	12.57	<0.01
R6	Cornwall House	13.16	13.25	13.25	<0.01
R7	Claycoats School	12.27	12.32	12.32	<0.01
R8	Windmill Care Centre	12.69	12.78	12.78	<0.01
R9	Tuns Lane	12.97	13.05	13.05	<0.01
R10	Paxton Avenue	13.67	13.80	13.81	<0.01
R11	Spackmans Way	13.53	13.64	13.64	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.69	12.69	<0.01
R13	Windsor Road	13.08	13.15	13.15	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.99	11.99	<0.01
R15	16 John Taylor Court	12.87	12.98	12.98	<0.01
R16	19 Farnham Road	12.18	12.22	12.22	<0.01
R17	49 Stoke Road	12.37	12.43	12.43	<0.01
R18	50 Stoke Road	12.25	12.29	12.29	<0.01
R19	100 Wexham Road	12.93	12.99	13.00	0.02
R20	98 Broadmark Road	12.12	12.18	12.19	0.01

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R21	25 Cannon Gate	11.81	11.84	11.85	0.01
R22	27 Clifton Road	12.47	12.57	12.58	0.01
PR1	Proposed Receptor	-	-	13.34	-
PR2	Proposed Receptor	-	-	12.86	-
PR3	Proposed Receptor	-	-	12.63	-
PR4	Proposed Receptor	-	-	12.59	-
PR5	Proposed Receptor	-	-	12.02	-
PR6	Proposed Receptor	-	-	12.69	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table B5, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is 0.02 µg/m³ at Wexham Road (R4).

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B6.

Table B6 Impact Description of Effects at Key Receptors

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.01	0.02	0%	≤75% of AQO	Negligible
R2	<0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.02	0%	≤75% of AQO	Negligible
R4	0.02	0.09	0%	≤75% of AQO	Negligible
R5	<0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.02	0.07	0%	≤75% of AQO	Negligible
R20	0.01	0.05	0%	≤75% of AQO	Negligible
R21	0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.01	0.03	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Do Something Development Scenario 2b

Nitrogen Dioxide

Table B7 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B7 Scenario 1 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 2b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	39.94	39.99	0.05
R2	Hazelmere Road	26.62	26.95	26.98	0.03
R3	Yew Tree Road	36.63	37.87	37.90	0.03
R4	Wexham Road	35.56	36.74	36.96	0.23
R5	Apsley House	32.82	33.75	33.78	0.03
R6	Cornwall House	34.41	35.26	35.27	0.01
R7	Claycoats School	30.64	31.14	31.14	<0.01
R8	Windmill Care Centre	34.14	34.95	34.95	<0.01
R9	Tuns Lane	33.76	34.57	34.57	<0.01
R10	Paxton Avenue	42.80	44.32	44.32	<0.01
R11	Spackmans Way	41.90	43.29	43.30	0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	33.72	33.72	<0.01
R13	Windsor Road	34.72	35.54	35.54	<0.01
R14	Saint Mary's Church of England Primary School	27.57	28.00	28.00	<0.01
R15	16 John Taylor Court	36.91	37.96	37.96	<0.01
R16	19 Farnham Road	29.77	30.19	30.19	<0.01

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R17	49 Stoke Road	31.07	31.66	31.66	<0.01
R18	50 Stoke Road	29.79	30.22	30.22	<0.01
R19	100 Wexham Road	34.51	34.96	35.10	0.14
R20	98 Broadmark Road	29.20	29.75	29.88	0.13
R21	25 Cannon Gate	25.74	26.02	26.07	0.05
R22	27 Clifton Road	32.11	33.00	33.05	0.05
PR1	Proposed Receptor	-	-	37.82	-
PR2	Proposed Receptor	-	-	33.99	-
PR3	Proposed Receptor	-	-	32.15	-
PR4	Proposed Receptor	-	-	31.78	-
PR5	Proposed Receptor	-	-	27.78	-
PR6	Proposed Receptor	-	-	32.59	-
PR7	Proposed Receptor	-	-	31.58	-
PR8	Proposed Receptor	-	-	31.68	-
Annual Mean AQO: 40 µg/m³					

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table B7, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.23 µg/m³ at Wexham Road (R4).

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B8.

Table B8 Impact Description of Effects at Key Receptors (NO_2)

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.05	0.12	0%	95-102% of AQO	Negligible
R2	0.03	0.07	0%	≤75% of AQO	Negligible
R3	0.03	0.07	0%	95-102% of AQO	Negligible
R4	0.23	0.57	1%	76-94% of AQO	Negligible
R5	0.03	0.07	0%	76-94% of AQO	Negligible
R6	0.01	0.02	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	76-94% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	≥110 of AQO	Negligible
R11	0.01	0.02	0%	103-109 of AQO	Negligible
R12	<0.01	<0.01	0%	76-94% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	95-102% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	76-94% of AQO	Negligible
R18	<0.01	<0.01	0%	76-94% of AQO	Negligible
R19	0.14	0.35	0%	76-94% of AQO	Negligible
R20	0.13	0.32	0%	≤75% of AQO	Negligible
R21	0.05	0.12	0%	≤75% of AQO	Negligible
R22	0.05	0.12	0%	76-94% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table B9 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B9 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	18.98	19.24	19.25	0.01
R2	Hazelmere Road	16.97	17.03	17.03	0.01
R3	Yew Tree Road	18.64	18.86	18.87	0.01
R4	Wexham Road	18.63	18.85	18.90	0.04
R5	Apsley House	17.98	18.13	18.14	0.01
R6	Cornwall House	19.29	19.44	19.45	<0.01
R7	Claycoats School	17.80	17.89	17.89	<0.01
R8	Windmill Care Centre	18.51	18.66	18.66	<0.01
R9	Tuns Lane	19.01	19.14	19.14	<0.01
R10	Paxton Avenue	20.07	20.28	20.28	<0.01
R11	Spackmans Way	19.82	2<0.01	2<0.01	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.45	18.45	<0.01
R13	Windsor Road	19.11	19.24	19.24	<0.01

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R14	Saint Mary's Church of England Primary School	17.10	17.17	17.17	<0.01
R15	16 John Taylor Court	18.79	18.97	18.97	<0.01
R16	19 Farnham Road	17.65	17.72	17.72	<0.01
R17	49 Stoke Road	17.75	17.85	17.85	<0.01
R18	50 Stoke Road	17.55	17.62	17.62	<0.01
R19	100 Wexham Road	19.10	19.19	19.22	0.03
R20	98 Broadmark Road	17.39	17.48	17.50	0.02
R21	25 Cannon Gate	16.89	16.94	16.95	0.01
R22	27 Clifton Road	17.99	18.15	18.16	0.01
PR1	Proposed Receptor	-	-	19.79	-
PR2	Proposed Receptor	-	-	18.96	-
PR3	Proposed Receptor	-	-	18.58	-
PR4	Proposed Receptor	-	-	18.51	-
PR5	Proposed Receptor	-	-	17.23	-
PR6	Proposed Receptor	-	-	18.69	-
PR7	Proposed Receptor	-	-	18.48	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table B9, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is 0.04 µg/m³ at Wexham Road (R4).

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B10.

Table B10 Impact Description of Effects at Key Receptors

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.01	0.02	0%	≤75% of AQO	Negligible
R2	0.01	0.01	0%	≤75% of AQO	Negligible
R3	0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.04	0.10	0%	≤75% of AQO	Negligible
R5	0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.03	0.07	0%	≤75% of AQO	Negligible
R20	0.02	0.06	0%	≤75% of AQO	Negligible
R21	0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.01	0.03	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table B11 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B11 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	13.08	13.24	13.24	0.01
R2	Hazelmere Road	11.87	11.90	11.91	<0.01
R3	Yew Tree Road	12.88	13.01	13.01	<0.01
R4	Wexham Road	12.86	12.99	13.01	0.02
R5	Apsley House	12.48	12.57	12.58	<0.01
R6	Cornwall House	13.16	13.25	13.25	<0.01
R7	Claycoats School	12.27	12.32	12.32	<0.01
R8	Windmill Care Centre	12.69	12.78	12.78	<0.01
R9	Tuns Lane	12.97	13.05	13.05	<0.01
R10	Paxton Avenue	13.67	13.80	13.80	<0.01
R11	Spackmans Way	13.53	13.64	13.64	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.69	12.69	<0.01
R13	Windsor Road	13.08	13.15	13.15	<0.01

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R14	Saint Mary's Church of England Primary School	11.95	11.99	11.99	<0.01
R15	16 John Taylor Court	12.87	12.98	12.98	<0.01
R16	19 Farnham Road	12.18	12.22	12.22	<0.01
R17	49 Stoke Road	12.37	12.43	12.43	<0.01
R18	50 Stoke Road	12.25	12.29	12.29	<0.01
R19	100 Wexham Road	12.93	12.99	13.00	0.02
R20	98 Broadmark Road	12.12	12.18	12.19	0.01
R21	25 Cannon Gate	11.81	11.84	11.85	0.01
R22	27 Clifton Road	12.47	12.57	12.58	0.01
PR1	Proposed Receptor	-	-	13.34	-
PR2	Proposed Receptor	-	-	12.85	-
PR3	Proposed Receptor	-	-	12.63	-
PR4	Proposed Receptor	-	-	12.59	-
PR5	Proposed Receptor	-	-	12.02	-
PR6	Proposed Receptor	-	-	12.69	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table B11, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is 0.02 µg/m³ at Wexham Road (R4).

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B12.

Table B12 Impact Description of Effects at Key Receptors

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.01	0.02	0%	≤75% of AQO	Negligible
R2	<0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.02	0.10	0%	≤75% of AQO	Negligible
R5	<0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.02	0.06	0%	≤75% of AQO	Negligible
R20	0.01	0.05	0%	≤75% of AQO	Negligible
R21	0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.01	0.03	0%	≤75% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Scenario Two Assessment Results

Do Something Development Scenario 1b

Nitrogen Dioxide

Table B13 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B13 Scenario 2 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 1b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	39.97	39.99	0.02
R2	Hazelmere Road	26.62	26.97	26.98	0.01
R3	Yew Tree Road	36.63	37.89	37.90	0.01
R4	Wexham Road	35.56	36.89	36.96	0.07
R5	Apsley House	32.82	33.77	33.78	0.01
R6	Cornwall House	34.41	35.27	35.27	<0.01
R7	Claycoats School	30.64	31.14	31.15	0.01
R8	Windmill Care Centre	34.14	34.95	34.96	0.01

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R9	Tuns Lane	33.76	34.57	34.58	0.01
R10	Paxton Avenue	42.80	44.32	44.33	0.01
R11	Spackmans Way	41.90	43.30	43.30	<0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	33.72	33.72	<0.01
R13	Windsor Road	34.72	35.54	35.55	0.01
R14	Saint Mary's Church of England Primary School	27.57	28.00	28.01	0.01
R15	16 John Taylor Court	36.91	37.96	37.97	0.01
R16	19 Farnham Road	29.77	30.19	30.19	<0.01
R17	49 Stoke Road	31.07	31.66	31.66	<0.01
R18	50 Stoke Road	29.79	30.22	30.22	<0.01
R19	100 Wexham Road	34.51	35.07	35.11	0.04
R20	98 Broadmark Road	29.20	29.84	29.88	0.04
R21	25 Cannon Gate	25.74	26.06	26.07	0.01
R22	27 Clifton Road	32.11	33.03	33.05	0.02
PR1	Proposed Receptor	-	-	37.82	-
PR2	Proposed Receptor	-	-	33.99	-
PR3	Proposed Receptor	-	-	32.15	-
PR4	Proposed Receptor	-	-	31.78	-
PR5	Proposed Receptor	-	-	27.78	-
PR6	Proposed Receptor	-	-	32.60	-
PR7	Proposed Receptor	-	-	31.58	-
PR8	Proposed Receptor	-	-	31.68	-
Annual Mean AQO: 40 µg/m³					

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table B13, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.07 µg/m³ at Princes Street (R1).

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B14.

Table B14 Scenario 2 Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 1b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	0.02	0.05	0%	95-102% of AQO	Negligible
R2	0.01	0.02	0%	≤75% of AQO	Negligible
R3	0.01	0.02	0%	95-102% of AQO	Negligible
R4	0.07	0.17	0%	76-94% of AQO	Negligible
R5	0.01	0.02	0%	76-94% of AQO	Negligible
R6	<0.01	<0.01	0%	76-94% of AQO	Negligible
R7	0.01	0.02	0%	76-94% of AQO	Negligible
R8	0.01	0.02	0%	76-94% of AQO	Negligible
R9	0.01	0.02	0%	76-94% of AQO	Negligible
R10	0.01	0.02	0%	≥110 of AQO	Negligible
R11	<0.01	<0.01	0%	103-109 of AQO	Negligible
R12	<0.01	<0.01	0%	76-94% of AQO	Negligible
R13	0.01	0.02	0%	76-94% of AQO	Negligible
R14	0.01	0.02	0%	≤75% of AQO	Negligible
R15	0.01	0.02	0%	95-102% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	76-94% of AQO	Negligible
R18	<0.01	<0.01	0%	76-94% of AQO	Negligible
R19	0.04	0.10	0%	76-94% of AQO	Negligible
R20	0.04	0.10	0%	≤75% of AQO	Negligible
R21	0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.02	0.05	0%	76-94% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table B15 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B15 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	18.98	19.24	19.25	<0.01
R2	Hazelmere Road	16.97	17.03	17.03	<0.01
R3	Yew Tree Road	18.64	18.86	18.87	<0.01

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R4	Wexham Road	18.63	18.88	18.90	0.01
R5	Apsley House	17.98	18.14	18.14	<0.01
R6	Cornwall House	19.29	19.45	19.45	<0.01
R7	Claycoats School	17.80	17.89	17.89	<0.01
R8	Windmill Care Centre	18.51	18.66	18.66	<0.01
R9	Tuns Lane	19.01	19.14	19.14	<0.01
R10	Paxton Avenue	20.07	20.28	20.28	<0.01
R11	Spackmans Way	19.82	20.00	20.00	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.45	18.45	<0.01
R13	Windsor Road	19.11	19.24	19.24	<0.01
R14	Saint Mary's Church of England Primary School	17.10	17.17	17.17	<0.01
R15	16 John Taylor Court	18.79	18.97	18.97	<0.01
R16	19 Farnham Road	17.65	17.72	17.72	<0.01
R17	49 Stoke Road	17.75	17.85	17.85	<0.01
R18	50 Stoke Road	17.55	17.62	17.62	<0.01
R19	100 Wexham Road	19.10	19.21	19.22	0.01
R20	98 Broadmark Road	17.39	17.50	17.50	0.01
R21	25 Cannon Gate	16.89	16.95	16.95	<0.01
R22	27 Clifton Road	17.99	18.16	18.16	<0.01
PR1	Proposed Receptor	-	-	19.79	-
PR2	Proposed Receptor	-	-	18.96	-
PR3	Proposed Receptor	-	-	18.58	-
PR4	Proposed Receptor	-	-	18.51	-
PR5	Proposed Receptor	-	-	17.23	-
PR6	Proposed Receptor	-	-	18.69	-
PR7	Proposed Receptor	-	-	18.48	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table B15, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is 0.01µg/m³ at Wexham Road (R4), 100 Wexham Road (R19) and 98 Broadmark Road (R20).

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B16.

Table B16 Impact Description of Effects at Key Receptors

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.01	0.03	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.01	0.02	0%	≤75% of AQO	Negligible
R20	0.01	0.02	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table B17 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B17 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	13.08	13.24	13.24	<0.01
R2	Hazelmere Road	11.87	11.91	11.91	<0.01
R3	Yew Tree Road	12.88	13.01	13.01	<0.01
R4	Wexham Road	12.86	13.01	13.01	0.01
R5	Apsley House	12.48	12.57	12.57	<0.01

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R6	Cornwall House	13.16	13.25	13.25	<0.01
R7	Claycoats School	12.27	12.32	12.32	<0.01
R8	Windmill Care Centre	12.69	12.78	12.78	<0.01
R9	Tuns Lane	12.97	13.05	13.05	<0.01
R10	Paxton Avenue	13.67	13.80	13.81	<0.01
R11	Spackmans Way	13.53	13.64	13.64	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.69	12.69	<0.01
R13	Windsor Road	13.08	13.15	13.15	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.99	11.99	<0.01
R15	16 John Taylor Court	12.87	12.98	12.98	<0.01
R16	19 Farnham Road	12.18	12.22	12.22	<0.01
R17	49 Stoke Road	12.37	12.43	12.43	<0.01
R18	50 Stoke Road	12.25	12.29	12.29	<0.01
R19	100 Wexham Road	12.93	13.00	13.00	0.01
R20	98 Broadmark Road	12.12	12.19	12.19	<0.01
R21	25 Cannon Gate	11.81	11.85	11.85	<0.01
R22	27 Clifton Road	12.47	12.57	12.58	<0.01
PR1	Proposed Receptor	-	-	13.34	-
PR2	Proposed Receptor	-	-	12.86	-
PR3	Proposed Receptor	-	-	12.63	-
PR4	Proposed Receptor	-	-	12.59	-
PR5	Proposed Receptor	-	-	12.02	-
PR6	Proposed Receptor	-	-	12.69	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table B17, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is 0.01 µg/m³ at Wexham Road (R4) and 100 Wexham Road (R19).

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B18.

Table B18 Impact Description of Effects at Key Receptors

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.01	0.03	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.01	0.02	0%	≤75% of AQO	Negligible
R20	<0.01	0.02	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Do Something Development Scenario 2b

Nitrogen Dioxide

Table B19 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B19 Scenario 2 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 2b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	39.97	39.99	0.02
R2	Hazelmere Road	26.62	26.97	26.98	0.01
R3	Yew Tree Road	36.63	37.89	37.90	0.01
R4	Wexham Road	35.56	36.89	36.96	0.07
R5	Apsley House	32.82	33.77	33.78	0.01
R6	Cornwall House	34.41	35.27	35.27	<0.01
R7	Claycoats School	30.64	31.14	31.14	<0.01
R8	Windmill Care Centre	34.14	34.95	34.95	<0.01
R9	Tuns Lane	33.76	34.57	34.57	<0.01
R10	Paxton Avenue	42.80	44.32	44.32	<0.01
R11	Spackmans Way	41.90	43.30	43.30	<0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	33.72	33.72	<0.01
R13	Windsor Road	34.72	35.54	35.54	<0.01
R14	Saint Mary's Church of England Primary School	27.57	28.00	28.00	<0.01
R15	16 John Taylor Court	36.91	37.96	37.96	<0.01
R16	19 Farnham Road	29.77	30.19	30.19	<0.01
R17	49 Stoke Road	31.07	31.66	31.66	<0.01
R18	50 Stoke Road	29.79	30.22	30.22	<0.01
R19	100 Wexham Road	34.51	35.07	35.10	0.03
R20	98 Broadmark Road	29.20	29.84	29.88	0.04
R21	25 Cannon Gate	25.74	26.06	26.07	0.01
R22	27 Clifton Road	32.11	33.03	33.05	0.02
PR1	Proposed Receptor	-	-	37.82	-
PR2	Proposed Receptor	-	-	33.99	-
PR3	Proposed Receptor	-	-	32.15	-
PR4	Proposed Receptor	-	-	31.78	-
PR5	Proposed Receptor	-	-	27.78	-
PR6	Proposed Receptor	-	-	32.59	-
PR7	Proposed Receptor	-	-	31.58	-
PR8	Proposed Receptor	-	-	31.68	-
Annual Mean AQO: 40 µg/m³					

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table B19, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.07 µg/m³ at Wexham Road (R4).

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B20.

Table B20 Impact Description of Effects at Key Receptors (NO_2)

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	0.02	0.05	0%	95-102% of AQO	Negligible
R2	0.01	0.02	0%	≤75% of AQO	Negligible
R3	0.01	0.02	0%	95-102% of AQO	Negligible
R4	0.07	0.17	0%	76-94% of AQO	Negligible
R5	0.01	0.02	0%	76-94% of AQO	Negligible
R6	<0.01	<0.01	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	76-94% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	≥110 of AQO	Negligible
R11	<0.01	<0.01	0%	103-109 of AQO	Negligible
R12	<0.01	<0.01	0%	76-94% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	95-102% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	76-94% of AQO	Negligible
R18	<0.01	<0.01	0%	76-94% of AQO	Negligible
R19	0.03	0.07	0%	76-94% of AQO	Negligible
R20	0.04	0.10	0%	≤75% of AQO	Negligible
R21	0.01	0.02	0%	≤75% of AQO	Negligible
R22	0.02	0.05	0%	76-94% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table B21 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B21 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	18.98	19.24	19.25	<0.01
R2	Hazelmere Road	16.97	17.03	17.03	<0.01
R3	Yew Tree Road	18.64	18.86	18.87	<0.01
R4	Wexham Road	18.63	18.88	18.90	0.01
R5	Apsley House	17.98	18.14	18.14	<0.01
R6	Cornwall House	19.29	19.45	19.45	<0.01
R7	Claycoats School	17.80	17.89	17.89	<0.01
R8	Windmill Care Centre	18.51	18.66	18.66	<0.01
R9	Tuns Lane	19.01	19.14	19.14	<0.01
R10	Paxton Avenue	20.07	20.28	20.28	<0.01
R11	Spackmans Way	19.82	20.00	20.00	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.45	18.45	<0.01
R13	Windsor Road	19.11	19.24	19.24	<0.01
R14	Saint Mary's Church of England Primary School	17.10	17.17	17.17	<0.01
R15	16 John Taylor Court	18.79	18.97	18.97	<0.01
R16	19 Farnham Road	17.65	17.72	17.72	<0.01
R17	49 Stoke Road	17.75	17.85	17.85	<0.01
R18	50 Stoke Road	17.55	17.62	17.62	<0.01
R19	100 Wexham Road	19.10	19.21	19.22	0.01
R20	98 Broadmark Road	17.39	17.50	17.50	0.01
R21	25 Cannon Gate	16.89	16.95	16.95	<0.01
R22	27 Clifton Road	17.99	18.16	18.16	<0.01
PR1	Proposed Receptor	-	-	19.79	-
PR2	Proposed Receptor	-	-	18.96	-
PR3	Proposed Receptor	-	-	18.58	-
PR4	Proposed Receptor	-	-	18.51	-
PR5	Proposed Receptor	-	-	17.23	-
PR6	Proposed Receptor	-	-	18.69	-
PR7	Proposed Receptor	-	-	18.48	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table B21, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is 0.01 µg/m³ at Wexham Road (R4), 100 Wexham Road (R19) and 98 Broadmark Road (R20).

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B22.

Table B22 Impact Description of Effects at Key Receptors

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	0.01	0%	≤75% of AQO	Negligible
R4	0.01	0.03	0%	≤75% of AQO	Negligible
R5	<0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.01	0.02	0%	≤75% of AQO	Negligible
R20	0.01	0.02	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table B23 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B23 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	13.08	13.24	13.24	<0.01
R2	Hazelmere Road	11.87	11.91	11.91	<0.01

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R3	Yew Tree Road	12.88	13.01	13.01	<0.01
R4	Wexham Road	12.86	13.01	13.01	0.01
R5	Apsley House	12.48	12.57	12.58	<0.01
R6	Cornwall House	13.16	13.25	13.25	<0.01
R7	Claycoats School	12.27	12.32	12.32	<0.01
R8	Windmill Care Centre	12.69	12.78	12.78	<0.01
R9	Tuns Lane	12.97	13.05	13.05	<0.01
R10	Paxton Avenue	13.67	13.80	13.80	<0.01
R11	Spackmans Way	13.53	13.64	13.64	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.69	12.69	<0.01
R13	Windsor Road	13.08	13.15	13.15	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.99	11.99	<0.01
R15	16 John Taylor Court	12.87	12.98	12.98	<0.01
R16	19 Farnham Road	12.18	12.22	12.22	<0.01
R17	49 Stoke Road	12.37	12.43	12.43	<0.01
R18	50 Stoke Road	12.25	12.29	12.29	<0.01
R19	100 Wexham Road	12.93	13.00	13.00	<0.01
R20	98 Broadmark Road	12.12	12.19	12.19	<0.01
R21	25 Cannon Gate	11.81	11.85	11.85	<0.01
R22	27 Clifton Road	12.47	12.57	12.58	<0.01
PR1	Proposed Receptor	-	-	13.34	-
PR2	Proposed Receptor	-	-	12.85	-
PR3	Proposed Receptor	-	-	12.63	-
PR4	Proposed Receptor	-	-	12.59	-
PR5	Proposed Receptor	-	-	12.02	-
PR6	Proposed Receptor	-	-	12.69	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table B23, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is <0.01 µg/m³ at all receptors.

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B24.

Table B24 Impact Description of Effects at Key Receptors

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	0.01	0.03	0%	≤75% of AQO	Negligible
R5	<0.01	0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	<0.01	0.02	0%	≤75% of AQO	Negligible
R20	<0.01	0.02	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Development Scenario 3b

Scenario 1

Nitrogen Dioxide

Table B25 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B25 Scenario 1 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 3b

Receptor		NO_2 (µg/m^3)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	38.50	39.94	39.95	0.01
R2	Hazelmere Road	26.62	26.95	26.96	0.01
R3	Yew Tree Road	36.63	37.87	37.88	0.01
R4	Wexham Road	35.56	36.74	36.86	0.13
R5	Apsley House	32.82	33.75	33.76	0.01
R6	Cornwall House	34.41	35.26	35.26	<0.01
R7	Claycoats School	30.64	31.14	31.14	<0.01
R8	Windmill Care Centre	34.14	34.95	34.95	<0.01
R9	Tuns Lane	33.76	34.57	34.57	<0.01
R10	Paxton Avenue	42.80	44.32	**44.32**	<0.01
R11	Spackmans Way	41.90	43.29	**43.30**	0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	33.72	33.72	<0.01
R13	Windsor Road	34.72	35.54	35.54	<0.01
R14	Saint Mary's Church of England Primary School	27.57	28.00	28.00	<0.01
R15	16 John Taylor Court	36.91	37.96	37.96	<0.01
R16	19 Farnham Road	29.77	30.19	30.19	<0.01
R17	49 Stoke Road	31.07	31.66	31.66	<0.01
R18	50 Stoke Road	29.79	30.22	30.22	<0.01
R19	100 Wexham Road	34.51	34.96	35.05	0.09
R20	98 Broadmark Road	29.20	29.75	29.84	0.09
R21	25 Cannon Gate	25.74	26.02	26.05	0.03
R22	27 Clifton Road	32.11	33.00	33.03	0.03
PR1	Proposed Receptor	-	-	37.74	-
PR2	Proposed Receptor	-	-	33.96	-
PR3	Proposed Receptor	-	-	32.14	-
PR4	Proposed Receptor	-	-	31.77	-
PR5	Proposed Receptor	-	-	32.67	-
PR6	Proposed Receptor	-	-	31.71	-
PR7	Proposed Receptor	-	-	31.57	-
PR8	Proposed Receptor	-	-	31.68	-

Receptor	NO_2 (µg/m³)			
	Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
Annual Mean AQO: 40 µg/m³				

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table B25, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.13 µg/m³ at Wexham Road (R4).

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B26.

Table B26 Impact Description of Effects at Key Receptors (NO_2)

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.01	0.02	0%	95-102% of AQO	Negligible
R2	0.01	0.02	0%	≤75% of AQO	Negligible
R3	0.01	0.02	0%	95-102% of AQO	Negligible
R4	0.13	0.32	0%	76-94% of AQO	Negligible
R5	0.01	0.02	0%	76-94% of AQO	Negligible
R6	<0.01	<0.01	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	76-94% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	≥110 of AQO	Negligible
R11	0.01	0.02	0%	103-109 of AQO	Negligible
R12	<0.01	<0.01	0%	76-94% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	95-102% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	76-94% of AQO	Negligible
R18	<0.01	<0.01	0%	76-94% of AQO	Negligible
R19	0.09	0.22	0%	76-94% of AQO	Negligible
R20	0.09	0.22	0%	≤75% of AQO	Negligible
R21	0.03	0.07	0%	≤75% of AQO	Negligible
R22	0.03	0.07	0%	76-94% of AQO	Negligible

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table B27 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B27 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	18.98	19.24	19.24	<0.01
R2	Hazelmere Road	16.97	17.03	17.03	<0.01
R3	Yew Tree Road	18.64	18.86	18.86	<0.01
R4	Wexham Road	18.63	18.85	18.88	0.02
R5	Apsley House	17.98	18.13	18.13	<0.01
R6	Cornwall House	19.29	19.44	19.44	<0.01
R7	Claycoats School	17.80	17.89	17.89	<0.01
R8	Windmill Care Centre	18.51	18.66	18.66	<0.01
R9	Tuns Lane	19.01	19.14	19.14	<0.01
R10	Paxton Avenue	20.07	20.28	20.28	<0.01
R11	Spackmans Way	19.82	2<0.01	2<0.01	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.45	18.45	<0.01
R13	Windsor Road	19.11	19.24	19.24	<0.01
R14	Saint Mary's Church of England Primary School	17.10	17.17	17.17	<0.01
R15	16 John Taylor Court	18.79	18.97	18.97	<0.01
R16	19 Farnham Road	17.65	17.72	17.72	<0.01
R17	49 Stoke Road	17.75	17.85	17.85	<0.01
R18	50 Stoke Road	17.55	17.62	17.62	<0.01
R19	100 Wexham Road	19.10	19.19	19.21	0.02
R20	98 Broadmark Road	17.39	17.48	17.50	0.02
R21	25 Cannon Gate	16.89	16.94	16.95	0.01
R22	27 Clifton Road	17.99	18.15	18.16	0.01
PR1	Proposed Receptor	-	-	19.77	-
PR2	Proposed Receptor	-	-	18.96	-
PR3	Proposed Receptor	-	-	18.57	-
PR4	Proposed Receptor	-	-	18.51	-
PR5	Proposed Receptor	-	-	18.70	-

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
PR6	Proposed Receptor	-	-	18.50	-
PR7	Proposed Receptor	-	-	18.47	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table B27 the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is 0.02 µg/m³ at Wexham Road (R4) and 100 Wexham Road (R19).

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B28.

Table B28 Impact Description of Effects at Key Receptors

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	0.02	0.06	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.02	0.05	0%	≤75% of AQO	Negligible
R20	0.02	0.04	0%	≤75% of AQO	Negligible
R21	0.01	0.01	0%	≤75% of AQO	Negligible
R22	0.01	0.01	0%	≤75% of AQO	Negligible

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table B29 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B29 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	13.08	13.24	13.24	<0.01
R2	Hazelmere Road	11.87	11.90	11.90	<0.01
R3	Yew Tree Road	12.88	13.01	13.01	<0.01
R4	Wexham Road	12.86	12.99	13.00	0.01
R5	Apsley House	12.48	12.57	12.57	<0.01
R6	Cornwall House	13.16	13.25	13.25	<0.01
R7	Claycoats School	12.27	12.32	12.32	<0.01
R8	Windmill Care Centre	12.69	12.78	12.78	<0.01
R9	Tuns Lane	12.97	13.05	13.05	<0.01
R10	Paxton Avenue	13.67	13.80	13.80	<0.01
R11	Spackmans Way	13.53	13.64	13.64	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.69	12.69	<0.01
R13	Windsor Road	13.08	13.15	13.15	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.99	11.99	<0.01
R15	16 John Taylor Court	12.87	12.98	12.98	<0.01
R16	19 Farnham Road	12.18	12.22	12.22	<0.01
R17	49 Stoke Road	12.37	12.43	12.43	<0.01
R18	50 Stoke Road	12.25	12.29	12.29	<0.01
R19	100 Wexham Road	12.93	12.99	13.00	0.01
R20	98 Broadmark Road	12.12	12.18	12.19	0.01
R21	25 Cannon Gate	11.81	11.84	11.85	<0.01
R22	27 Clifton Road	12.47	12.57	12.57	<0.01
PR1	Proposed Receptor	-	-	13.33	-
PR2	Proposed Receptor	-	-	12.85	-
PR3	Proposed Receptor	-	-	12.63	-
PR4	Proposed Receptor	-	-	12.59	-

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
PR5	Proposed Receptor	-	-	12.70	-
PR6	Proposed Receptor	-	-	12.58	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table B29, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is 0.01 µg/m³ at Wexham Road (R4), 100 Wexham Road (R19) and 98 Broadmark Road (R20).

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B30.

Table B30 Impact Description of Effects at Key Receptors

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	<0.01	0.01	0%	≤75% of AQO	Negligible
R2	<0.01	0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	0.01	0.06	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.01	0.04	0%	≤75% of AQO	Negligible
R20	0.01	0.04	0%	≤75% of AQO	Negligible
R21	<0.01	0.01	0%	≤75% of AQO	Negligible

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R22	<0.01	0.01	0%	≤75% of AQO	Negligible
+0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Scenario 2

Nitrogen Dioxide

Table B31 presents a summary of the predicted change in NO_2 concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B31 Scenario 2 Predicted Annual Average Concentrations of NO_2 at Receptor Locations – Development Scenario 2b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	38.50	39.97	39.95	-0.02
R2	Hazelmere Road	26.62	26.97	26.96	-0.01
R3	Yew Tree Road	36.63	37.89	37.88	-0.01
R4	Wexham Road	35.56	36.89	36.86	-0.03
R5	Apsley House	32.82	33.77	33.76	-0.01
R6	Cornwall House	34.41	35.27	35.26	-0.01
R7	Claycoats School	30.64	31.14	31.14	<0.01
R8	Windmill Care Centre	34.14	34.95	34.95	<0.01
R9	Tuns Lane	33.76	34.57	34.57	<0.01
R10	Paxton Avenue	42.80	44.32	44.32	<0.01
R11	Spackmans Way	41.90	43.30	43.30	<0.01
R12	Slough and Eton CoE Business and Enterprise College	32.97	33.72	33.72	<0.01
R13	Windsor Road	34.72	35.54	35.54	<0.01
R14	Saint Mary's Church of England Primary School	27.57	28.00	28.00	<0.01
R15	16 John Taylor Court	36.91	37.96	37.96	<0.01
R16	19 Farnham Road	29.77	30.19	30.19	<0.01
R17	49 Stoke Road	31.07	31.66	31.66	<0.01
R18	50 Stoke Road	29.79	30.22	30.22	<0.01
R19	100 Wexham Road	34.51	35.07	35.05	-0.02
R20	98 Broadmark Road	29.20	29.84	29.84	<0.01
R21	25 Cannon Gate	25.74	26.06	26.05	-0.01

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R22	27 Clifton Road	32.11	33.03	33.03	<0.01
PR1	Proposed Receptor	-	-	37.74	-
PR2	Proposed Receptor	-	-	33.96	-
PR3	Proposed Receptor	-	-	32.14	-
PR4	Proposed Receptor	-	-	31.77	-
PR5	Proposed Receptor	-	-	32.67	-
PR6	Proposed Receptor	-	-	31.71	-
PR7	Proposed Receptor	-	-	31.57	-
PR8	Proposed Receptor	-	-	31.68	-
Annual Mean AQO: 40 µg/m³					

All modelled receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table B31, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.23 µg/m³ at Wexham Road (R4)

All proposed receptors predict NO_2 concentrations of below 60 µg/m³ in all scenarios. Therefore, it is unlikely for any exceedances of the short-term NO_2 AQO to occur as outlined in LAQM TG16 technical guidance.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B32.

Table B32 Impact Description of Effects at Key Receptors (NO_2)

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change Due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	-0.02	-0.05	0%	95-102% of AQO	Negligible
R2	-0.01	-0.02	0%	≤75% of AQO	Negligible
R3	-0.01	-0.02	0%	95-102% of AQO	Negligible
R4	-0.03	-0.07	0%	76-94% of AQO	Negligible
R5	-0.01	-0.02	0%	76-94% of AQO	Negligible
R6	-0.01	-0.02	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	76-94% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	≥110 of AQO	Negligible
R11	<0.01	<0.01	0%	103-109 of AQO	Negligible
R12	<0.01	<0.01	0%	76-94% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	95-102% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	76-94% of AQO	Negligible
R18	<0.01	<0.01	0%	76-94% of AQO	Negligible
R19	-0.02	-0.05	0%	76-94% of AQO	Negligible
R20	<0.01	<0.01	0%	≤75% of AQO	Negligible
R21	-0.01	-0.02	0%	≤75% of AQO	Negligible
R22	<0.01	<0.01	0%	76-94% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is determined to be 'negligible' at all receptors, based on the methodology outlined in Section 3.

Particulate Matter (PM_{10})

Table B33 presents a summary of the predicted change in annual mean PM_{10} concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B33 Predicted Annual Average Concentrations of PM_{10} at Receptor Locations

Receptor		PM_{10} (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	18.98	19.24	19.24	<0.01
R2	Hazelmere Road	16.97	17.03	17.03	<0.01
R3	Yew Tree Road	18.64	18.86	18.86	<0.01
R4	Wexham Road	18.63	18.88	18.88	-0.01
R5	Apsley House	17.98	18.14	18.13	<0.01
R6	Cornwall House	19.29	19.45	19.44	<0.01
R7	Claycoats School	17.80	17.89	17.89	<0.01
R8	Windmill Care Centre	18.51	18.66	18.66	<0.01
R9	Tuns Lane	19.01	19.14	19.14	<0.01
R10	Paxton Avenue	20.07	20.28	20.28	<0.01
R11	Spackmans Way	19.82	20.00	20.00	<0.01
R12	Slough and Eton CoE Business and Enterprise College	18.38	18.45	18.45	<0.01
R13	Windsor Road	19.11	19.24	19.24	<0.01
R14	Saint Mary's Church of England Primary School	17.10	17.17	17.17	<0.01
R15	16 John Taylor Court	18.79	18.97	18.97	<0.01
R16	19 Farnham Road	17.65	17.72	17.72	<0.01
R17	49 Stoke Road	17.75	17.85	17.85	<0.01
R18	50 Stoke Road	17.55	17.62	17.62	<0.01
R19	100 Wexham Road	19.10	19.21	19.21	<0.01
R20	98 Broadmark Road	17.39	17.50	17.50	<0.01
R21	25 Cannon Gate	16.89	16.95	16.95	<0.01
R22	27 Clifton Road	17.99	18.16	18.16	<0.01
PR1	Proposed Receptor	-	-	19.77	-
PR2	Proposed Receptor	-	-	18.96	-
PR3	Proposed Receptor	-	-	18.57	-
PR4	Proposed Receptor	-	-	18.51	-
PR5	Proposed Receptor	-	-	18.70	-
PR6	Proposed Receptor	-	-	18.50	-
PR7	Proposed Receptor	-	-	18.47	-
PR8	Proposed Receptor	-	-	18.49	-
Annual Mean AQO: 40 µg/m³					

As indicated in Table B33, the maximum predicted increase in the annual average exposure to PM_{10} at any existing receptors, due to changes in traffic movements associated with the development, is <0.01 µg/m³.

All modelled receptor locations are predicted to be below the AQO for PM_{10} in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean PM_{10} exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B34.

Table B34 Impact Description of Effects at Key Receptors

Impact Description of PM_{10} Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	-0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	-0.01	-0.01	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	<0.01	-0.01	0%	≤75% of AQO	Negligible
R20	<0.01	<0.01	0%	≤75% of AQO	Negligible
R21	<0.01	<0.01	0%	≤75% of AQO	Negligible
R22	<0.01	<0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean PM_{10} exposure, for existing receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Particulate Matter ($PM_{2.5}$)

Table B35 presents a summary of the predicted change in annual mean $PM_{2.5}$ concentrations at relevant receptor locations, due to changes in traffic flow associated with the development, based on modelled 'do minimum' and 'do something' scenarios.

Table B35 Predicted Annual Average Concentrations of $PM_{2.5}$ at Receptor Locations

Receptor		$PM_{2.5}$ (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	13.08	13.24	13.24	<0.01
R2	Hazelmere Road	11.87	11.91	11.90	<0.01
R3	Yew Tree Road	12.88	13.01	13.01	<0.01
R4	Wexham Road	12.86	13.01	13.00	<0.01
R5	Apsley House	12.48	12.57	12.57	<0.01
R6	Cornwall House	13.16	13.25	13.25	<0.01
R7	Claycoats School	12.27	12.32	12.32	<0.01
R8	Windmill Care Centre	12.69	12.78	12.78	<0.01
R9	Tuns Lane	12.97	13.05	13.05	<0.01
R10	Paxton Avenue	13.67	13.80	13.80	<0.01
R11	Spackmans Way	13.53	13.64	13.64	<0.01
R12	Slough and Eton CoE Business and Enterprise College	12.65	12.69	12.69	<0.01
R13	Windsor Road	13.08	13.15	13.15	<0.01
R14	Saint Mary's Church of England Primary School	11.95	11.99	11.99	<0.01
R15	16 John Taylor Court	12.87	12.98	12.98	<0.01
R16	19 Farnham Road	12.18	12.22	12.22	<0.01
R17	49 Stoke Road	12.37	12.43	12.43	<0.01
R18	50 Stoke Road	12.25	12.29	12.29	<0.01
R19	100 Wexham Road	12.93	13.00	13.00	<0.01
R20	98 Broadmark Road	12.12	12.19	12.19	<0.01
R21	25 Cannon Gate	11.81	11.85	11.85	<0.01
R22	27 Clifton Road	12.47	12.57	12.57	<0.01
PR1	Proposed Receptor	-	-	13.33	-
PR2	Proposed Receptor	-	-	12.85	-
PR3	Proposed Receptor	-	-	12.63	-
PR4	Proposed Receptor	-	-	12.59	-
PR5	Proposed Receptor	-	-	12.70	-
PR6	Proposed Receptor	-	-	12.58	-
PR7	Proposed Receptor	-	-	12.57	-
PR8	Proposed Receptor	-	-	12.58	-
Annual Mean AQO: 25 µg/m³					

As indicated in Table B35, the maximum predicted increase in the annual average exposure to $PM_{2.5}$ at any existing receptors due to changes in traffic movements associated with the development, is <0.01 µg/m³.

All modelled receptor locations are predicted to be below the AQO for $PM_{2.5}$ in both the 'do minimum' and 'do something' scenarios.

The impact description of changes in traffic flow associated with the development with respect to annual mean $PM_{2.5}$ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table B36.

Table B36 Impact Description of Effects at Key Receptors

Impact Description of $PM_{2.5}$ Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change Due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	<0.01	-0.01	0%	≤75% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	≤75% of AQO	Negligible
R4	<0.01	-0.01	0%	≤75% of AQO	Negligible
R5	<0.01	<0.01	0%	≤75% of AQO	Negligible
R6	<0.01	<0.01	0%	≤75% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	≤75% of AQO	Negligible
R9	<0.01	<0.01	0%	≤75% of AQO	Negligible
R10	<0.01	<0.01	0%	≤75% of AQO	Negligible
R11	<0.01	<0.01	0%	≤75% of AQO	Negligible
R12	<0.01	<0.01	0%	≤75% of AQO	Negligible
R13	<0.01	<0.01	0%	≤75% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	≤75% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	<0.01	-0.01	0%	≤75% of AQO	Negligible
R20	<0.01	<0.01	0%	≤75% of AQO	Negligible
R21	<0.01	<0.01	0%	≤75% of AQO	Negligible
R22	<0.01	<0.01	0%	≤75% of AQO	Negligible
[+]0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					

The impact description of the effects of changes in traffic as a result of the proposed development, with respect to annual mean $PM_{2.5}$ exposure, for existing residential receptors, is determined to be 'negligible' based on the methodology outlined in Section 3.

Appendix C Alternative (CURED) Future Emissions Scenario Results

Scenario Context

As an additional sensitivity test, an assessment using emissions for 2022, generated from the Calculator Using Realistic Emissions for Diesels (CURED) Version 3A toolkit (23rd January 2018) has been undertaken.

The CURED emissions projections have been developed by Air Quality Consultants (AQC), on the basis that the Defra published EFT fleet emission projections may be over-precautionary in terms of NO_x emissions. The CURED emissions projections incorporate a larger proportion of diesel car, Euro IV, V and VI Heavy Duty Vehicle emissions than the Defra published EFT.

As a worst case assessment, the three assessment scenarios are defined below:

- 2018 Baseline = Existing baseline conditions;
- 2026 'Do Minimum' Theoretical Scenario = Baseline Conditions + Committed Development + Flows (2026 Baseline 1b); and,
- 2026 'Do Something' Theoretical Scenario = Baseline Conditions + Committed Development + Flows Development Scenario 1b.
- 2026 'Do Something' Theoretical Scenario = Baseline Conditions + Committed Development + Flows Development Scenario 2b.

Model Verification

Table C1 Comparison of Roadside Modelling & Monitoring Results for NO_2

Tube location	NO_2 µg/m^3		
	Monitored NO_2	Modelled NO_2	Difference (%)
SLO 5	34.40	37.62	9.35
SLO 23*	29.50	33.89	14.88
SLO 24*	32.70	37.21	13.80
SLO 25*	33.20	36.15	8.87
SLO 26	31.50	34.71	10.19
SLO 29	52.70	49.08	-6.87
SLO 33	28.70	31.72	10.53
SLO 37	39.90	35.54	-10.94
SLO 38	32.30	32.10	-0.63
SLO 40	38.60	36.65	-5.06
SLO 43	34.00	33.80	-0.59
SLO 44	31.90	32.47	1.80
SLO 46	40.10	35.61	-11.20
SLO 47	35.20	37.85	7.53

Tube location	NO_2 µg/m³		
	Monitored NO_2	Modelled NO_2	Difference (%)
SLO 48*	28.10	30.41	8.20
SLO 49	4<0.01	4<0.01	<0.01
SLO 50	45.80	44.43	-2.99
SLH10	36.00	34.50	-4.16
SLH12	42.00	39.94	-4.90
*Located in the AQMA			

The final model produced data at the monitoring locations to within 15% of the monitoring results.

The final verification model correlation coefficient (representing the model uncertainty) is 0.99[5]. This figure demonstrates that the model predictions were in line with the road traffic emissions at the monitoring locations.

Scenario One Assessment Results

Table C2 Scenario 1 CURED Scenario NO_2 Results at Receptor Locations – Development Scenario 1b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	39.94	35.62	35.66	0.04
R2	Hazelmere Road	26.95	25.81	25.83	0.02
R3	Yew Tree Road	37.87	34.07	34.09	0.02
R4	Wexham Road	36.74	33.23	33.40	0.17
R5	Apsley House	33.75	30.95	30.98	0.03
R6	Cornwall House	35.26	32.81	32.82	0.01
R7	Claycoats School	31.14	29.61	29.62	0.01
R8	Windmill Care Centre	34.95	32.46	32.46	<0.01
R9	Tuns Lane	34.57	32.03	32.03	<0.01
R10	Paxton Avenue	44.32	39.24	39.24	<0.01
R11	Spackmans Way	43.29	38.46	38.46	<0.01
R12	Slough and Eton CoE Business and Enterprise College	33.72	31.26	31.26	<0.01
R13	Windsor Road	35.54	32.98	32.98	<0.01
R14	Saint Mary's Church of England Primary School	28.00	26.68	26.68	<0.01
R15	16 John Taylor Court	37.96	34.71	34.71	<0.01
R16	19 Farnham Road	30.19	28.91	28.91	<0.01
R17	49 Stoke Road	31.66	30.01	30.01	<0.01
R18	50 Stoke Road	30.22	28.95	28.95	<0.01
R19	100 Wexham Road	34.96	33.54	33.65	0.11
R20	98 Broadmark Road	29.75	27.89	27.99	0.10
R21	25 Cannon Gate	26.02	25.14	25.18	0.04
R22	27 Clifton Road	33.00	30.41	30.45	0.04

[5] This was achieved by applying a model correction factor of 1.87 to roadside predicted NO_X concentrations before converting to NO_2

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
PR1	Proposed Receptor	-	-	35.68	-
PR2	Proposed Receptor	-	-	32.82	-
PR3	Proposed Receptor	-	-	31.45	-
PR4	Proposed Receptor	-	-	31.17	-
PR5	Proposed Receptor	-	-	26.44	-
PR6	Proposed Receptor	-	-	31.78	-
PR7	Proposed Receptor	-	-	31.04	-
PR8	Proposed Receptor	-	-	31.12	-
Annual Mean AQO		**40 µg/m³**			
*Located in the AQMA					

All modelled existing receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table C2, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.17 µg/m³ at Wexham Road (R4).

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table C3.

Table C3 Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 1b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.04	0.10	0%	76-94% of AQO	Negligible
R2	0.02	0.05	0%	≤75% of AQO	Negligible
R3	0.02	0.05	0%	76-94% of AQO	Negligible
R4	0.17	0.42	0%	76-94% of AQO	Negligible
R5	0.03	0.07	0%	76-94% of AQO	Negligible
R6	0.01	0.02	0%	76-94% of AQO	Negligible
R7	0.01	0.02	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	95-102% of AQO	Negligible
R11	<0.01	<0.01	0%	95-102% of AQO	Negligible
R12	<0.01	<0.01	0%	76-94% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.11	0.27	0%	76-94% of AQO	Negligible
R20	0.10	0.25	0%	≤75% of AQO	Negligible
R21	0.04	0.10	0%	≤75% of AQO	Negligible
R22	0.04	0.10	0%	76-94% of AQO	Negligible
*0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					
*Located in the AQMA					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is 'negligible' at all identified receptors. This is based on the methodology outlined in Section 3.

Table C4 Scenario 1 CURED NO_2 Results at Receptor Locations – Development Scenario 2b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	39.94	35.62	35.66	0.04
R2	Hazelmere Road	26.95	25.81	25.83	0.02
R3	Yew Tree Road	37.87	34.07	34.09	0.02
R4	Wexham Road	36.74	33.23	33.40	0.17
R5	Apsley House	33.75	30.95	30.98	0.03
R6	Cornwall House	35.26	32.81	32.82	0.01
R7	Claycoats School	31.14	29.61	29.61	<0.01
R8	Windmill Care Centre	34.95	32.46	32.46	<0.01
R9	Tuns Lane	34.57	32.03	32.03	<0.01
R10	Paxton Avenue	44.32	39.24	39.24	<0.01
R11	Spackmans Way	43.29	38.46	38.46	<0.01
R12	Slough and Eton CoE Business and Enterprise College	33.72	31.26	31.25	-0.01
R13	Windsor Road	35.54	32.98	32.97	-0.01
R14	Saint Mary's Church of England Primary School	28.00	26.68	26.68	<0.01
R15	16 John Taylor Court	37.96	34.71	34.71	<0.01
R16	19 Farnham Road	30.19	28.91	28.91	<0.01
R17	49 Stoke Road	31.66	30.01	30.01	<0.01
R18	50 Stoke Road	30.22	28.95	28.95	<0.01
R19	100 Wexham Road	34.96	33.54	33.65	0.11
R20	98 Broadmark Road	29.75	27.89	27.99	0.10
R21	25 Cannon Gate	26.02	25.14	25.18	0.04
R22	27 Clifton Road	33.00	30.41	30.45	0.04
PR1	Proposed Receptor	-	-	35.68	-
PR2	Proposed Receptor	-	-	32.82	-
PR3	Proposed Receptor	-	-	31.45	-
PR4	Proposed Receptor	-	-	31.17	-

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
PR5	Proposed Receptor	-	-	26.44	-
PR6	Proposed Receptor	-	-	31.78	-
PR7	Railway Triangle	-	-	31.04	-
PR8	Eton Meadows	-	-	31.12	-
Annual Mean AQO		**40 µg/m³**			
*Located in the AQMA					

All modelled existing receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table C4, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.17 µg/m³ at Wexham Road (R4).

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table C5.

Table C5 Scenario 1 CURED Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 2b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.04	0.10	0%	76-94% of AQO	Negligible
R2	0.02	0.05	0%	≤75% of AQO	Negligible
R3	0.02	0.05	0%	76-94% of AQO	Negligible
R4	0.17	0.42	0%	76-94% of AQO	Negligible
R5	0.03	0.07	0%	76-94% of AQO	Negligible
R6	0.01	0.02	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	95-102% of AQO	Negligible
R11	<0.01	<0.01	0%	95-102% of AQO	Negligible
R12	-0.01	-0.02	0%	76-94% of AQO	Negligible
R13	-0.01	-0.02	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.11	0.27	0%	76-94% of AQO	Negligible
R20	0.10	0.25	0%	≤75% of AQO	Negligible

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R21	0.04	0.10	0%	≤75% of AQO	Negligible
R22	0.04	0.10	0%	76-94% of AQO	Negligible
*0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					
*Located in the AQMA					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is 'negligible' at all identified receptors. This is based on the methodology outlined in Section 3.

Scenario Two Assessment Results

Table C6 Scenario 2 CURED Scenario NO_2 Results at Receptor Locations – Development Scenario 1b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	39.94	35.64	35.66	0.02
R2	Hazelmere Road	26.95	25.82	25.83	0.01
R3	Yew Tree Road	37.87	34.08	34.09	0.01
R4	Wexham Road	36.74	33.35	33.40	0.05
R5	Apsley House	33.75	30.97	30.98	0.01
R6	Cornwall House	35.26	32.81	32.82	0.01
R7	Claycoats School	31.14	29.61	29.62	0.01
R8	Windmill Care Centre	34.95	32.45	32.46	0.01
R9	Tuns Lane	34.57	32.03	32.03	<0.01
R10	Paxton Avenue	44.32	39.23	39.24	0.01
R11	Spackmans Way	43.29	38.46	38.46	<0.01
R12	Slough and Eton CoE Business and Enterprise College	33.72	31.25	31.26	0.01
R13	Windsor Road	35.54	32.97	32.98	0.01
R14	Saint Mary's Church of England Primary School	28.00	26.68	26.68	<0.01
R15	16 John Taylor Court	37.96	34.70	34.71	0.01
R16	19 Farnham Road	30.19	28.91	28.91	<0.01
R17	49 Stoke Road	31.66	30.01	30.01	<0.01
R18	50 Stoke Road	30.22	28.95	28.95	<0.01
R19	100 Wexham Road	34.96	33.62	33.65	0.03
R20	98 Broadmark Road	29.75	27.95	27.99	0.04
R21	25 Cannon Gate	26.02	25.16	25.18	0.02
R22	27 Clifton Road	33.00	30.44	30.45	0.01
PR1	Proposed Receptor	-	-	35.68	-
PR2	Proposed Receptor	-	-	32.82	-
PR3	Proposed Receptor	-	-	31.45	-
PR4	Proposed Receptor	-	-	31.17	-
PR5	Proposed Receptor	-	-	26.44	-

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
PR6	Proposed Receptor	-	-	31.78	-
PR7	Proposed Receptor	-	-	31.04	-
PR8	Proposed Receptor	-	-	31.12	-
Annual Mean AQO		**40 µg/m³**			
*Located in the AQMA					

All modelled existing receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table C6, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.05 µg/m³ at Wexham Road (R4)

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table C7.

Table C7 Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 1b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.02	0.05	0%	76-94% of AQO	Negligible
R2	0.01	0.02	0%	≤75% of AQO	Negligible
R3	0.01	0.02	0%	76-94% of AQO	Negligible
R4	0.05	0.12	0%	76-94% of AQO	Negligible
R5	0.01	0.02	0%	76-94% of AQO	Negligible
R6	0.01	0.02	0%	76-94% of AQO	Negligible
R7	0.01	0.02	0%	≤75% of AQO	Negligible
R8	0.01	0.02	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	0.01	0.02	0%	95-102% of AQO	Negligible
R11	<0.01	<0.01	0%	95-102% of AQO	Negligible
R12	0.01	0.02	0%	76-94% of AQO	Negligible
R13	0.01	0.02	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	0.01	0.02	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.03	0.07	0%	76-94% of AQO	Negligible
R20	0.04	0.10	0%	≤75% of AQO	Negligible
R21	0.02	0.05	0%	≤75% of AQO	Negligible

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R22	0.01	0.02	0%	76-94% of AQO	Negligible
*0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					
*Located in the AQMA					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is 'negligible' at all identified receptors. This is based on the methodology outlined in Section 3.

Table C8 Scenario 2 CURED NO_2 Results at Receptor Locations – Development Scenario 2b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	**Do Minimum 2026**	**Do Something 2026**	**Development Contribution**
R1	Princes Street	39.94	35.64	35.66	0.02
R2	Hazelmere Road	26.95	25.82	25.83	0.01
R3	Yew Tree Road	37.87	34.08	34.09	0.01
R4	Wexham Road	36.74	33.35	33.40	0.05
R5	Apsley House	33.75	30.97	30.98	0.01
R6	Cornwall House	35.26	32.81	32.82	0.01
R7	Claycoats School	31.14	29.61	29.61	<0.01
R8	Windmill Care Centre	34.95	32.45	32.46	0.01
R9	Tuns Lane	34.57	32.03	32.03	<0.01
R10	Paxton Avenue	44.32	39.23	39.24	0.01
R11	Spackmans Way	43.29	38.46	38.46	<0.01
R12	Slough and Eton CoE Business and Enterprise College	33.72	31.25	31.25	<0.01
R13	Windsor Road	35.54	32.97	32.97	<0.01
R14	Saint Mary's Church of England Primary School	28.00	26.68	26.68	<0.01
R15	16 John Taylor Court	37.96	34.70	34.71	0.01
R16	19 Farnham Road	30.19	28.91	28.91	<0.01
R17	49 Stoke Road	31.66	30.01	30.01	<0.01
R18	50 Stoke Road	30.22	28.95	28.95	<0.01
R19	100 Wexham Road	34.96	33.62	33.65	0.03
R20	98 Broadmark Road	29.75	27.95	27.99	0.04
R21	25 Cannon Gate	26.02	25.16	25.18	0.02
R22	27 Clifton Road	33.00	30.44	30.45	0.01
PR1	Proposed Receptor	-	-	35.68	-
PR2	Proposed Receptor	-	-	32.82	-
PR3	Proposed Receptor	-	-	31.45	-
PR4	Proposed Receptor	-	-	31.17	-
PR5	Proposed Receptor	-	-	26.44	-
PR6	Proposed Receptor	-	-	31.78	-
PR7	Proposed Receptor	-	-	31.04	-
PR8	Proposed Receptor	-	-	31.11	-
Annual Mean AQO		**40 µg/m³**			

Receptor	NO_2 (µg/m³)			
	Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
*Located in the AQMA				

All modelled existing receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table C8, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.05 µg/m³ at Wexham Road (R4).

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table C9.

Table C9 Scenario 2 CURED Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 2b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	Change Due to Development (DS-DM) (µg/m³)	Change due to Development (% of AQO)	% Change in Concentration Relative to AQO	% Annual Mean Concentration in Assessment Year	Impact Description
R1	0.02	0.05	0%	76-94% of AQO	Negligible
R2	0.01	0.02	0%	≤75% of AQO	Negligible
R3	0.01	0.02	0%	76-94% of AQO	Negligible
R4	0.05	0.12	0%	76-94% of AQO	Negligible
R5	0.01	0.02	0%	76-94% of AQO	Negligible
R6	0.01	0.02	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	0.01	0.02	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	0.01	0.02	0%	95-102% of AQO	Negligible
R11	<0.01	<0.01	0%	95-102% of AQO	Negligible
R12	<0.01	<0.01	0%	76-94% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	0.01	0.02	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.03	0.07	0%	76-94% of AQO	Negligible
R20	0.04	0.10	0%	≤75% of AQO	Negligible
R21	0.02	0.05	0%	≤75% of AQO	Negligible
R22	0.01	0.02	0%	76-94% of AQO	Negligible
*0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					
*Located in the AQMA					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is 'negligible' at all identified receptors. This is based on the methodology outlined in Section 3.

Development Scenario 3b

Scenario 1

Table C10 Scenario 1 CURED NO_2 Results at Receptor Locations – Development Scenario 3b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	39.94	35.62	35.63	0.01
R2	Hazelmere Road	26.95	25.81	25.82	0.01
R3	Yew Tree Road	37.87	34.07	34.07	<0.01
R4	Wexham Road	36.74	33.23	33.33	0.10
R5	Apsley House	33.75	30.95	30.96	0.01
R6	Cornwall House	35.26	32.81	32.81	<0.01
R7	Claycoats School	31.14	29.61	29.61	<0.01
R8	Windmill Care Centre	34.95	32.46	32.46	<0.01
R9	Tuns Lane	34.57	32.03	32.03	<0.01
R10	Paxton Avenue	44.32	39.24	39.23	-0.01
R11	Spackmans Way	43.29	38.46	38.46	<0.01
R12	Slough and Eton CoE Business and Enterprise College	33.72	31.26	31.25	-0.01
R13	Windsor Road	35.54	32.98	32.97	-0.01
R14	Saint Mary's Church of England Primary School	28.00	26.68	26.68	<0.01
R15	16 John Taylor Court	37.96	34.71	34.70	-0.01
R16	19 Farnham Road	30.19	28.91	28.91	<0.01
R17	49 Stoke Road	31.66	30.01	30.01	<0.01
R18	50 Stoke Road	30.22	28.95	28.95	<0.01
R19	100 Wexham Road	34.96	33.54	33.61	0.07
R20	98 Broadmark Road	29.75	27.89	27.95	0.06
R21	25 Cannon Gate	26.02	25.14	25.16	0.02
R22	27 Clifton Road	33.00	30.41	30.43	0.02
PR1	Proposed Receptor	-	-	35.62	-
PR2	Proposed Receptor	-	-	32.79	-
PR3	Proposed Receptor	-	-	31.44	-
PR4	Proposed Receptor	-	-	31.16	-
PR5	Proposed Receptor	-	-	26.43	-
PR6	Proposed Receptor	-	-	31.76	-
PR7	Proposed Receptor	-	-	31.04	-
PR8	Proposed Receptor	-	-	31.12	-
Annual Mean AQO		**40 µg/m³**			
*Located in the AQMA					

All modelled existing receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table C10, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is 0.10 µg/m^3 at Wexham Road (R4).

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table C11.

Table C11 Scenario 1 CURED Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 3b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	0.01	0.02	0%	76-94% of AQO	Negligible
R2	0.01	0.02	0%	≤75% of AQO	Negligible
R3	<0.01	<0.01	0%	76-94% of AQO	Negligible
R4	0.10	0.25	0%	76-94% of AQO	Negligible
R5	0.01	0.02	0%	76-94% of AQO	Negligible
R6	<0.01	<0.01	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	<0.01	<0.01	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	-0.01	-0.02	0%	95-102% of AQO	Negligible
R11	<0.01	<0.01	0%	95-102% of AQO	Negligible
R12	-0.01	-0.02	0%	76-94% of AQO	Negligible
R13	-0.01	-0.02	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	-0.01	-0.02	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	0.07	0.17	0%	76-94% of AQO	Negligible
R20	0.06	0.15	0%	≤75% of AQO	Negligible
R21	0.02	0.05	0%	≤75% of AQO	Negligible
R22	0.02	0.05	0%	76-94% of AQO	Negligible
*0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					
*Located in the AQMA					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is 'negligible' at all identified receptors. This is based on the methodology outlined in Section 3.

Scenario 2

Table C12 Scenario 2 CURED NO_2 Results at Receptor Locations – Development Scenario 3b

Receptor		NO_2 (µg/m³)			
		Baseline 2018	Do Minimum 2026	Do Something 2026	Development Contribution
R1	Princes Street	39.94	35.64	35.63	-0.01
R2	Hazelmere Road	26.95	25.82	25.82	0.00
R3	Yew Tree Road	37.87	34.08	34.07	-0.01
R4	Wexham Road	36.74	33.35	33.33	-0.02
R5	Apsley House	33.75	30.97	30.96	-0.01
R6	Cornwall House	35.26	32.81	32.81	<0.01
R7	Claycoats School	31.14	29.61	29.61	<0.01
R8	Windmill Care Centre	34.95	32.45	32.46	0.01
R9	Tuns Lane	34.57	32.03	32.03	<0.01
R10	Paxton Avenue	44.32	39.23	39.23	<0.01
R11	Spackmans Way	43.29	38.46	38.46	<0.01
R12	Slough and Eton CoE Business and Enterprise College	33.72	31.25	31.25	<0.01
R13	Windsor Road	35.54	32.97	32.97	<0.01
R14	Saint Mary's Church of England Primary School	28.00	26.68	26.68	<0.01
R15	16 John Taylor Court	37.96	34.70	34.70	<0.01
R16	19 Farnham Road	30.19	28.91	28.91	<0.01
R17	49 Stoke Road	31.66	30.01	30.01	<0.01
R18	50 Stoke Road	30.22	28.95	28.95	<0.01
R19	100 Wexham Road	34.96	33.62	33.61	-0.01
R20	98 Broadmark Road	29.75	27.95	27.95	<0.01
R21	25 Cannon Gate	26.02	25.16	25.16	<0.01
R22	27 Clifton Road	33.00	30.44	30.43	-0.01
PR1	Proposed Receptor	-	-	35.62	-
PR2	Proposed Receptor	-	-	32.79	-
PR3	Proposed Receptor	-	-	31.44	-
PR4	Proposed Receptor	-	-	31.16	-
PR5	Proposed Receptor	-	-	26.43	-
PR6	Proposed Receptor	-	-	31.76	-
PR7	Proposed Receptor	-	-	31.04	-
PR8	Proposed Receptor	-	-	31.11	-
Annual Mean AQO		**40 µg/m³**			
*Located in the AQMA					

All modelled existing receptors are predicted to be below the AQO for NO_2 in both the 'do minimum' and 'do something' scenarios.

As indicated in Table C12, the maximum predicted increase in the annual average exposure to NO_2 at any existing receptor, due to changes in traffic movements associated with the development, is <0.01 µg/m³.

The impact description of changes in traffic flow associated with the development with respect to annual mean NO_2 exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in Table C13.

Table C13 Scenario 2 CURED Impact Description of Effects at Key Receptors (NO_2) – Development Scenario 3b

Impact Description of NO_2 Effects at Key Receptors					
Receptor	**Change Due to Development (DS-DM) (µg/m³)**	**Change due to Development (% of AQO)**	**% Change in Concentration Relative to AQO**	**% Annual Mean Concentration in Assessment Year**	**Impact Description**
R1	-0.01	-0.02	0%	76-94% of AQO	Negligible
R2	<0.01	<0.01	0%	≤75% of AQO	Negligible
R3	-0.01	-0.02	0%	76-94% of AQO	Negligible
R4	-0.02	-0.05	0%	76-94% of AQO	Negligible
R5	-0.01	-0.02	0%	76-94% of AQO	Negligible
R6	<0.01	<0.01	0%	76-94% of AQO	Negligible
R7	<0.01	<0.01	0%	≤75% of AQO	Negligible
R8	0.01	0.02	0%	76-94% of AQO	Negligible
R9	<0.01	<0.01	0%	76-94% of AQO	Negligible
R10	<0.01	<0.01	0%	95-102% of AQO	Negligible
R11	<0.01	<0.01	0%	95-102% of AQO	Negligible
R12	<0.01	<0.01	0%	76-94% of AQO	Negligible
R13	<0.01	<0.01	0%	76-94% of AQO	Negligible
R14	<0.01	<0.01	0%	≤75% of AQO	Negligible
R15	<0.01	<0.01	0%	76-94% of AQO	Negligible
R16	<0.01	<0.01	0%	≤75% of AQO	Negligible
R17	<0.01	<0.01	0%	≤75% of AQO	Negligible
R18	<0.01	<0.01	0%	≤75% of AQO	Negligible
R19	-0.01	-0.02	0%	76-94% of AQO	Negligible
R20	<0.01	<0.01	0%	≤75% of AQO	Negligible
R21	<0.01	<0.01	0%	≤75% of AQO	Negligible
R22	-0.01	-0.02	0%	76-94% of AQO	Negligible
*0% means a change of <0.5% as per explanatory note 2 of table 6.3 of the EPUK IAQM Guidance.					
*Located in the AQMA					

The impact description of the effects of changes in traffic flow as a result of the proposed development, with respect to NO_2 exposure for existing receptors, is 'negligible' at all identified receptors. This is based on the methodology outlined in Section 3.

Appendix D Report Terms & Conditions

This Report has been prepared using reasonable skill and care for the sole benefit of Panattoni Ltd. ("the Client") for the proposed uses stated in the report by [WYG Environment Planning Limited] ("WYG"). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors.

Appendix 8: Noise Assessment

PANATTONI

Former Akzo Nobel Site, Slough

Noise Assessment

December 2019

Panattoni Ltd

Former Akzo Nobel Site,

Slough

Noise Assessment

December 2019

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Issue	Date	Status
1	12th December 2019	First Issue
2		
3		
4		

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Appendix

1.0 Introduction

1.1 Purpose of this Report

This report presents the details of a noise assessment in support of an outline planning application for the redevelopment of the former Akzo Nobel Site situated off Wexham Road, Slough. It should be noted that the assessment within this report considers illustrative masterplans to demonstrate the site is suitable for development. Following the outline application, reserved matters applications may be submitted where layout can be subject to change.

This acoustic report includes two potential different uses for the site.

The first includes a commercial site with storage and distribution units. For this scenario, the worst-case potential noise impact of the following noise sources has been assessed:

- Ambient HGV access around the site and associated parking and docking/loading
- Staff Car Parking
- Off-site Traffic Contribution

The second option includes the use of the site as a data centre. For this scenario, the worst-case potential noise impact of the following sources has been assessed:

- AHU Louvres
- Roof Exhausts
- DX HVAC units
- Back-up Emergency Generators

It should be noted that the layout for the data centre scenario is indicative. In order to assess the worst case of 70,000m^2 of data centre use of the site it has been assumed 2.No 2-storey data centre buildings in the middle of the site which will concentrate the stand-by generators and cooling equipment rather than being spread out over the B2/B8 indicative masterplan.

Noise surveys have been undertaken to quantify background noise levels and verify predictions of the effects of noise. The noise levels from the proposed site have been predicted at local representative receptors using CADNA noise modelling software which incorporates ISO 9613 methodologies and calculations.

A list of acoustic terminology and abbreviations used in this report is provided in Appendix A, a set of location plans and noise contour plots is presented in Appendix B. Report Conditions are presented in Appendix C.

1.2 Legislative Context (England)

This report is intended to provide information relevant to the local planning authority and their consultees in support of a outline planning application for the above proposed development. Policy guidance with respect

to noise is found in the National Planning Policy Framework. With regard to noise and planning, NPPF contains the following statement at paragraph 170:

"170. Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) 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

A further 2 short statements are presented at paragraph 180, which state:

"180. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) "mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life
b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."

Furthermore, paragraphs 182 and 183 states:

"182. Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

183. The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."

Planning Practice Guidance (PPG): Noise provides further guidance with regard to the assessment of noise within the context of Planning Policy. The overall aim of this guidance, tying in with the principles of the NPPF and the Explanatory Note of the Noise Policy Statement for England (NPSE), is to *'identify whether the overall effect of noise exposure is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.'*

A summary of the effects of noise exposure associated with both noise generating developments and noise sensitive developments is presented within the PPG and repeated as follows:

Table 1.1 Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not present	No Effect	No Observed Effect	No Specific Measures Required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No Specific Measures Required
Lowest Observed Adverse Effect Level (LOAEL)			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level (SOAEL)			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

The NPPF, NPSE and NPPG do not, however, present absolute noise level criteria which define SOAEL, LOAEL and NOEL which is applicable to all sources of noise in all situations. Therefore, within the context of the Proposed Development, national planning policy and appropriate guidance documents including 'BS 4142: 2014 + A1:2019 '*Methods for Rating and Assessing Industrial and Commercial Sound'*, BS8233:2013 '*Guidance on sound insulation and noise reduction for buildings'* and DMRB HD213/11 (November 2011) *'Design Manual for Roads and Bridges'*. Section 2.0 presents the noise level criteria used as a basis of this

assessment.

The NPPG also states that *neither the NPSE nor the NPPF (which reflects the Noise Policy Statement) expects noise to be considered in isolation, separately from the economic, social and other environmental dimensions of the proposed development.*

2.0 Assessment Criteria

2.1 Operational Noise Assessment Criteria

In order to enable the assessment of the proposed development in terms of LOAEL and SOAEL, Table 2.1 presents equivalent noise levels and associated actions with the target noise level criteria identified. The noise level criteria detailed below have been derived from standards and design guidance:

- BS 4142:2014 + A1:2019 '*Methods for rating and assessing industrial and commercial sound*'
- BS 8233:2014 '*Guidance on sound insultation and noise reduction in buildings*'

Table 2.1 Noise Level Criteria and Actions

Effect Level	Noise Level Criteria	Action / Justification
No Observed Adverse Effect	Difference between source noise levels and existing background levels of zero or lower	No Action Required Source noise levels below the background noise is an indication of the sound source having a low impact and that complaints would be unlikely
	Noise levels less than: Bedrooms (night-time) – 30 dB $L_{Aeq,8hours}$ / 45 dB L_{Amax} Living Rooms (daytime) – 35 dB $L_{Aeq,16hours}$	No Action Required Within BS8233 criteria
Lowest Observed Adverse Effect Level (LOAEL)	Difference between source noise levels and existing background levels of zero to 5 dB	Action: None Justification: + 5 dB above background is considered an indication of an impact of marginal significance.
	Noise levels exceed: Bedrooms (night-time) – 30 dB $L_{Aeq,8hours}$ / 45 dB L_{Amax} Living Rooms (daytime) – 35 dB $L_{Aeq,16hours}$	Mitigate to achieve: Bedrooms – 30 dB $L_{Aeq,8hours}$ / 45 dB L_{Amax} Living Rooms – 35 dB $L_{Aeq,16hours}$ Within BS8233 criteria
Significant Observed Adverse Effect Level (SOAEL)	Difference between source noise levels and existing background levels of +10 dB	Justification: Depending on context, a difference of +10dB to be an indication that complaints are likely. Mitigate to achieve less than 5dB above background if possible:
	Noise levels exceed: Bedrooms (night-time)– 35 dB $L_{Aeq,8hours}$ / 45 dB L_{Amax} Living Rooms (daytime)– 40 dB $L_{Aeq,16hours}$	Where practicable, mitigate to achieve: Bedrooms – 30 dB $L_{Aeq,8hours}$ / 45 dB L_{Amax} Living Rooms – 35 dB $L_{Aeq,16hours}$ Within BS8233 criteria
Unacceptable Observed Adverse Effect Level (UOAEL)	Difference between source noise levels and existing background levels of greater than 10 dB	Action: Reduce as far as practicable depending on context Justification: +10 dB above existing background is an indication of a likely significant adverse impact
	Noise levels exceed: Bedrooms (night-time) – 51 dB $L_{Aeq,8hours}$ / 72 dB L_{Amax} Living Rooms (daytime) – 57 dB $L_{Aeq,16hours}$	Avoid

2.2 Traffic Noise Assessment Criteria

For the purposes of assessing the significance of any effects in relation to increases in road traffic noise levels attributable to the development, the criteria in Table 2.2 below have been derived from standards and design guidance contained in Table 3.1 of HD213/11 published in November 2011 (Design Manual for Roads and Bridges).

Table 2.2 Assessment of Change in Traffic Noise Levels

Short-term Change in Noise Levels $L_{A10,18hr}$ (dB)	Category (Short-term)
0.0	No Change
0.1 – 0.9	Negligible Adverse
1.0 – 2.9	Minor Adverse (LOAEL)
3.0 – 4.9	Moderate Adverse (SOAEL)
> 5.0	Major Adverse

3.0 Assessment Methodology

3.1 Noise Modelling Methodology

Three-dimensional noise modelling has been undertaken based on the monitoring data to predict source noise levels at a large number of locations both horizontally and vertically. CADNA noise modelling software has been used. This model is based on the Department of Transport Calculation of Road Traffic Noise (CRTN) and ISO 9613 noise propagation methodology and allows for detailed prediction of noise levels to be undertaken for large numbers of receptor points and different noise emission scenarios both horizontally and vertically. The modelling software calculates noise levels based on the emission parameters and spatial settings that are entered. Input data, assumptions and model settings as given in the table below have been used.

Table 3.1 Modelling Parameters Sources and Assumptions

Parameter	Source	Details
Horizontal distances – around site	Ordnance Survey	Ordnance Survey
Ground levels – around site	Ordnance Survey	Ordnance Survey
Ground levels – other areas	Site Observations and Ordnance Survey	OS 1:25,000 contours and OS 1:10,000 spot heights.
Building heights – around site	WYGE Observations	8 m height for two storey residential properties, and 4 m for Bungalows
Receptor positions	WYG	1 m from façade, height of 1.5 m for ground floor, 4 m for first floor. 1.5 m height for model grid.

It is acknowledged that a number of these assumptions will affect the overall noise levels presented in this report. However, it should be noted that certain assumptions made, as identified above, are worst-case.

3.2 Model Input Data

Scenario 1 – Storage and Distribution Units

3.2.1 HGV Docking Event Noise Data

Noise of a docking event has been known to vary from site to site by as much as 22 dB L_{Aeq} at 3 m distance even with the same vehicle type. Similarly, individual events using the same vehicle and at the same location have been recorded to vary by as much as 14 dB.

As such, the following worst-case calculations have been based on measurements of HGVs at an existing distribution depot. All measurements were undertaken in free-field conditions. In addition to noise from the unloading process, the levels used in the assessment include noise from the vehicle pulling up to the unloading

bay, manoeuvring into position and then pulling away once unloading/loading is complete, together with other sources such as reversing bleepers. The calculations are based on a maximum of one event per bay per hour with 50% of the bays operational during the night-time scenario. Events are modelled as point sources.

- *Daytime Specific Noise Level*

  1 x 2 minute at L_p 72 dB at 3 m distance (vehicle arriving and manoeuvring)
  1 x 38 minutes at L_p 67 dB at 3 m distance (vehicle unloading)
  1 x 2 minute at L_p 69 dB at 3 m distance (vehicle leaving)

  $L_{Aeq(60\ mins)}$ = 10log(1/60)(2 mins x $10^{0.1x72dB}$+38 mins x $10^{0.1x67dB}$+1 min x $10^{0.1x69dB}$)
  = 65.7 dB at 3 m distance

- *Night-time Specific Noise Level*

  1 x 2 minute at L_p 72 dB at 3 m distance (vehicle arriving and manoeuvring)
  1 x 13 minutes at L_p 67 dB at 3 m distance (vehicle unloading)

  $L_{Aeq(15\ mins)}$ = 10log(1/15)(2 mins x $10^{0.1x72dB}$+13 mins x $10^{0.1x67dB}$)
  = 68.1 dB at 3 m distance

- *Maximum Noise Level*

  L_{Amax} = 85.4 dB at 3m distance

3.2.2 HGV Movements

The following calculations have been used to represent HGVs entering/exiting the former Akzo Nobel Site. The number of HGVs has been based on development traffic flow data as provided by i-Transport which shows that over an 18-hour period there are expected to be 195 HGVs to arrive along the access road. Therefore, for the purposes of this worst-case assessment, an average of 10 arrivals and 10 departures per hour has been calculated for the line sources during the daytime period, with 50% operational movements during the night-time period. The following noise level data have been included in the model as line sources.

- *Daytime Specific Noise Level*

  20 x 10 seconds L_p = 69 dB at 3 m distance (vehicle arrivals and departures)
  $L_{Aeq(60\ mins)}$ = 10log(3600)(200 sec x $10^{0.1x69\ dB}$)
  = 56.5 dB at 3 m distance

- *Night-time Specific Noise Level*

  10 x 10 seconds L_p = 69 dB at 3 m distance (vehicle arrivals and departures)
  Night-time $L_{Aeq(15\ mins)}$ = 10log(3/900)(10 sec x $10^{0.1x69\ dB}$)
  = 59.5 dB at 3 m distance

- *Maximum Noise Level*

  Night-time L_{max} = 73.0 dB at 3 m distance

3.2.3 HGV Parking Event Noise Data

The following worst-case calculations have been based on measurements of ambient HGVs. All measurements were undertaken in free-field conditions. The levels used in the assessment include noise from the vehicle pulling up to a parking bay, manoeuvring into position (1 minute) and then turning off the engine, maintaining a quiet period for 55 minutes and then the vehicle will start its engine, idle and pull away (1 minutes). The calculations are based on a maximum of one event per parking bay per hour. Events have been modelled as a point source.

- *Daytime Specific Noise Level*

  1 x 2 minute at L_p 72 dB at 3 m distance (vehicle arriving and manoeuvring)
  Daytime $L_{Aeq(60\ mins)}$ = $10\log(1/60)(2\ mins \times 10^{0.1 \times 72dB})$
  = 57.2 dB at 3 m distance

- *Night-time Specific Noise Level*

  Night-time $L_{Aeq(15\ mins)}$ = $10\log(1/15)(2\ mins \times 10^{0.1 \times 72dB})$
  = 63.3 dB at 3 m distance

- *Maximum Noise Level*

  Night-time L_{Amax} = 85.4 dB at 3 m distance

3.2.4 Car Park Noise Data

Worst case noise levels from car parking from the commercial development at the proposed units have been based upon observations and measurements taken at the centre of an existing distribution centre car park during a shift change.

- *Distribution Centre Car Park is 54.0 dB at 1.0 m height*

Scenario 2 – Data Centre

The following noise level data has been provided, along with the number of units understood to be proposed on the site.

Table 3.2 'Data Centre' Noise Level Data

Description	Number of Units	Sound Pressure Level per unit (dBA)
AHU Louvre	200	72.0 at 1m distance
Roof Exhaust	272	91.0 at 1m distance

Description	Number of Units	Sound Pressure Level per unit (dBA)
Roof Mounted DX HVAC Unit	56	58.0 at 5m distance
Emergency Generator	52	85.0 at 1m distance

For the purposes of this assessment, it is understood that all plant will be running simultaneously at 100% capacity.

This is with the exception of the emergency generators will only be tested routinely as follows:

- **Scenario 1 (Testing):** Fortnightly for 30 minutes during the daytime only– one generator at any one time.
- **Scenario 2 (Testing):** Twice a year for 1.5 hours during the daytime only – one generator at any one time.
- **Scenario 3 (Emergency):** In event of power outage emergency at site, all generators will operate simultaneously.

As scenario 3 is only in the event of an emergency, for the 'typical' assessment of the site with Section 5.2.1 below, only scenarios 1 & 2 have been assessed, which includes the full operation of one generator at any one time. For the purposes of the worst-case assessment this generator has been taken to be the one within the closest proximity to the surrounding sensitive receptors.

Separate consideration has been given to an 'emergency scenario' within Section 5.2.2

Furthermore, intrinsic mitigation in the form of attenuators / silences for roof mounted exhausts and AHU louvres as well as an acoustic louvred screen around generators have been included in the assessment, the specification of which is presented within Section 5.2.

Traffic Data

Traffic flows have been based on traffic data provided by i-Transport; the following scenarios have been provided:

- **2021 Baseline 1a -** The lawful use of the site – this scenario includes background traffic growth (from 2019), committed developments and 8,070sq.m Research and Development and 52,293sq m of B2 use on the site.
- **2026 Baseline 1b -** The lawful use of the site – this scenario includes background traffic growth (from 2019), committed developments and 8,070sq.m Research and Development and 52,293sq m of B2 use on the site.

- **2021 Baseline 2a -** The existing, underutilised, use of the site – this scenario includes background traffic growth (from 2019), committed developments and 8,070sq.m Research and Development use on the site.
- **2026 Baseline 2b -** The existing, underutilised, use of the site – this scenario includes background traffic growth (from 2019), committed developments and 8,070sq.m Research and Development use on the site.
- **2021 Development Scenario 1a** – this scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings, 8,361sq.m B2 use and 28,428sq.m B8 use.
- **2026 Development Scenario 1b** – this scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings, 8,361sq.m B2 use and 28,428sq.m B8 use.
- **2021 Development Scenario 2a –** this scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings and 36,789sq.m B8 use.
- **2026 Development Scenario 2b –** this scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings and 36,789sq.m B8 use.
- **2021 Development Scenario 3a –** this scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings and 71,535sq.m Data Centre use.
- **2026 Development Scenario 3b –** this scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings and 71,535sq.m Data Centre use.
- **2026 Construction Scenario 1a -** this scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings and 36,789sq.m B8 use. The traffic associated with the construction of the residential development is also included in this scenario.
- **2026 Construction Scenario 1b –** this scenario includes background traffic growth (from 2019), committed developments and development on the site including 1,000 dwellings and 71,535sq.m Data Centre use. The traffic associated with the construction of the residential development is also included in this scenario.

To present a worst-case assessment, the worst-case existing baseline flows with the underutilised site (2021 baseline scenario 2a) have been assessed against future 2026 scenarios for all scenarios (2026 Development Scenario 1b, 2026 Development Scenario 2b, 2026 Development Scenario 3b and both 2026 construction scenarios).

It should be noted that the scenario flows as assessed include contribution from all cumulative sites surrounding the proposed development and are detailed below in Table 3.3. Therefore, this is considered a cumulative worst-case approach.

Table 3.3 Traffic Data

Link	Road	18hr AAWT 2021 Baseline Scenario 2a	18hr AAWT 2026 Development Scenario 1b	18hr AAWT 2026 Development Scenario 2b	18hr AAWT 2026 Development Scenario 3b	18hr AAWT 2026 Construction Scenario 1a	18hr AAWT 2026 Construction Scenario 1b
1	A412 Uxbridge Road North of Broadmark Road	30533	30704	30703	30524	30620	30799
2	A412 Uxbridge Road South of Broadmark Road	31508	31528	31536	31496	31528	31568
3	Broadmark Road	6880	7020	7012	6889	6953	7076
4	Wexham Road North of St Pauls Avenue	17618	17777	17769	17547	17659	17881
5	Wexham Road South of Petersfield Avenue	15887	16340	16356	15719	16097	16734
7	Petersfield Avenue	6802	6802	6802	6802	6802	6802
8	B416 Stoke Road north of Petersfield Avenue	15440	15440	15440	15440	15440	15440
10	B416 Stoke Road South of Stoke Gardens	20646	20646	20646	20646	20702	20702
11	A4 Wellington Street West of Stoke Road	36701	36737	36744	36668	37046	37122
12	A4 Wellington Street East of Stoke Road	29225	29262	29276	29187	29565	29654
13	A4 Wellington street East of HTC Roundabout	43210	43492	43495	42748	42832	43579
14	A4 Wellington Street East of Wexham Road	42631	43163	43172	42430	42430	43172
15	A4 Wellington Street East of Sainsburys	40777	40943	40942	40756	40756	40942

3.3 Sensitive Receptors

Table 3.3 below summarises the closest existing residential receptor locations to the former Akzo Nobel Site. These receptors have been selected to represent worst-case residential receptors with respect to direct noise from the site. The locations of all the receptors are shown on SK02 in Appendix B.

Table 3.3 Existing Receptor Locations

Ref.	Description	Height (m) Daytime / night-time
R01	96 Hazlemere Road	1.5 / 4.0
R02	64 Hazlemere Road	1.5 / 4.0
R03	20 Hazlemere Road	1.5 / 4.0

Ref.	Description	Height (m) Daytime / night-time
R04	100 Wexham Road	1.5 / 4.0
R05*	100a Wexham Road	1.5 / 7.0
R06	100a Wexham Road	1.5 / 4.0
R07	19 Colonial Road	1.5 / 4.0
R08	89 Victoria Road	1.5 / 4.0
R09	122 Uxbridge Road	1.5 / 4.0
R10	55 Goodman Park	1.5 / 4.0
R11	196 Uxbridge Road	1.5 / 4.0

*during the night-time the dormer window loft room has been represented

4.0 Noise Survey

4.1 Noise Survey Methodology

A monitoring survey was undertaken to characterise baseline ambient noise levels currently experienced on the site and to establish the relative local background and traffic noise levels. Equipment used during the survey included:

Rion NL-32	Environmental Noise Analyser	s/n	213442
Rion NL-52	Environmental Noise Analyser	s/n	843173
Rion NL-52	Environmental Noise Analyser	s/n	253701
Rion NL-52	Environmental Noise Analyser	s/n	732146
Rion NL-52	Environmental Noise Analyser	s/n	342866
Rion NL-52	Environmental Noise Analyser	s/n	264488
Rion NL-52	Environmental Noise Analyser	s/n	1276552
Rion NL-52	Environmental Noise Analyser	s/n	1176464
Rion NL-52	Environmental Noise Analyser	s/n	976224
Rion NC-74	Sound Calibrator	s/n	35046823
Rion NC-75	Sound Calibrator	s/n	35480543

The measurement equipment was checked against the appropriate calibrator at the beginning and end of the measurements, in accordance with recommended practice, a maximum drift of 0.7 dB was observed on all equipment during the survey. The accuracy of the calibrators can be traced to National Physical Laboratory Standards, calibration certificates for which are available on request.

A baseline monitoring survey was undertaken at twenty locations (as specified in the following table and shown in SK01 of Appendix B) from Thursday 13th June 2019 to Tuesday 18th June 2019. Attended short-term measurements were undertaken at eleven locations during day, evening and night-time periods with nine additional locations being measured unattended over a 117-hour period. The raw data collected from the long-term monitoring are available upon request.

Measurements were taken in general accordance with BS 7445-1:2003 *The Description and Measurement of Environmental Noise: Guide to quantities and procedures*. Weather conditions during the survey period were observed as being dry with scattered showers. Anemometer readings confirmed that wind speeds were less than 5 ms^{-1} at all times during the survey, with a predominant south-westerly wind direction, during the survey.

Table 4.1 Noise Monitoring Locations

Ref	Description
LT1	In north-eastern corner of site.
LT2	On eastern boundary of site adjacent to Uxbridge Road.

Ref	Description
LT3	On Cadent gasworks western boundary opposite gasworks plant.
LT4	On cadent gasworks western boundary opposite lorry park.
LT5	On southern boundary of site adjacent to trainline.
LT6	On western boundary of site adjacent to Wexham Road.
LT7	In north-western corner of site south of Arrow Embroidery Limited.
LT8	In north-western corner of site east of Arrow Embroidery Limited.
LT9	On boundary with leased Akzo Nobel offices.
ST1	Goodman Park, facing south-east
ST2	Uxbridge Road, facing Cadent gasworks
ST3	Wexham Road Overbridge
ST4	Uxbridge Road, on the bridge
ST5	The end of India Road, opposite Flat 9
ST6	Petersfield Avenue, in front of Citygate Kia Slough
ST7	On the corner of St Pauls Avenue and Wexham Road
ST8	In front of 92 Hazlemere Road.
ST9	On site, on the northern boundary of Cadent gasworks
ST10	On site, on the western boundary of Cadent Gasworks, 20m south of LT3.
ST11	On site, on the western boundary of Cadent gasworks, 40m north of trainline.

4.2 Noise Survey Results

The dominant noise sources observed in the area included frequent trains along the railway line to the south of the site, road traffic noise from Uxbridge Road to the east of the site, Hazlemere Road to the north of the site, Wexham Road to the west of the site and St Paul's Avenue also to the west of the site. Noise was also audible from forklift and plant activity associated with the Cadent gasworks site located on Uxbridge Road. Observations and measurements during the survey confirm that there was no industrial activity associated with the proposed site.

Table 4.2 Meteorological Conditions during the Survey

Survey Location	Date & Time	Temperature (°C)	Wind Speed (m/s)	Wind Direction	Cloud Cover (Oktas)	Dominant Noise Source
Daytime ST1	17/06/2019 15:48	18.0	1-2	SW	5	Road traffic noise along Uxbridge Road and Goodman Park.
Daytime ST2	17/06/2019 16:11	18.0	2-4	SW	5	Road Traffic along Uxbridge Road.
Daytime ST3	17/06/2019 14:21	18.0	3-4	SW	5	Trains and road traffic along Wexham Road
Daytime ST4	17/06/2019 14:59	18.0	2-3	SW	5	Road traffic along Uxbridge Road.
Daytime ST5	17/06/2019 15:18	18.0	2-3	SW	5	Aircraft, trains and cars idling on India Road.
Daytime ST6	17/06/2019 13:57	17.0	3-4	SW	5	Road traffic along Petersfield Avenue and Wexham Road.

Survey Location	Date & Time	Temperature (ºC)	Wind Speed (m/s)	Wind Direction	Cloud Cover (Oktas)	Dominant Noise Source
Daytime ST7	17/06/2019 13:33	17.0	1-3	SW	5	Road traffic along St Paul's avenue and Wexham Road.
Daytime ST8	17/06/2019 15:57	18.0	1-2	SW	5	Road traffic noise along Uxbridge Road and Hazlemere Road.
Daytime ST9	17/06/2019 14:12	18.0	1-2	SW	5	Traffic along Uxbridge Road and noise from forklifts moving in service yard on Cadent gasworks.
Daytime ST10	17/06/2019 14:31	18.0	1-2	SW	5	Distant road traffic along Uxbridge Road and plant noise from Cadent gasworks.
Daytime ST11	17/06/2019 14:57	18.0	1-2	SW	5	Distant road traffic along Uxbridge Road and vehicle movement in service yard in Cadent gasworks.
Evening ST1	17/06/2019 20:03	16.0	1-2	SW	6	Road traffic noise along Uxbridge Road and Goodman Park.
Evening ST2	17/06/2019 20:20	16.0	1-2	SW	6	Road Traffic along Uxbridge Road.
Evening ST3	17/06/2019 19:39	16.0	0-1	SW	6	Trains and road traffic along Wexham Road
Evening ST4	17/06/2019 20:22	15.0	0-1	SW	6	Road traffic along Uxbridge Road.
Evening ST5	17/06/2019 20:02	15.0	1-2	SW	6	Frequent Trains and aircraft.
Evening ST6	17/06/2019 19:19	16.0	0-1	SW	6	Road traffic along Petersfield Avenue and Wexham Road.
Evening ST7	17/06/2019 19:00	16.0	0-1	SW	6	Road traffic along St Paul's avenue and Wexham Road.
Evening ST8	17/06/2019 19:42	16.0	1-2	SW	6	Road traffic noise along Uxbridge Road and Hazlemere Road.
Night-time ST1	17/06/2019 23:50	12.0	0-1	SW	2	Road traffic noise along Uxbridge Road and Goodman Park.
Night-time ST2	18/06/2019 00:08	12.0	0-1	SW	2	Road Traffic along Uxbridge Road.
Night-time ST3	17/06/2019 23:35	12.0	0-1	SW	2	Trains, road traffic along Wexham Road
Night-time ST4	18/06/2019 00:16	11.0	0-1	SW	2	Road traffic along Uxbridge Road.
Night-time ST5	17/06/2019 23:56	11.0	0-1	SW	2	Distant road traffic along Uxbridge Road and Wexham road.
Night-time ST6	17/06/2019 23:17	12.0	0-1	SW	2	Road traffic along Petersfield Avenue and Wexham Road.
Night-time ST7	17/06/2019 23:00	12.0	0-1	SW	2	Road traffic along St Paul's avenue and Wexham Road.
Night-time ST8	17/06/2019 23:27	12.0	0-1	SW	2	Road traffic noise along Uxbridge Road and Hazlemere Road.

Ambient and background noise levels are usually described using the L_{Aeq} index (a form of energy average) and the L_{A90} index (i.e. the level exceeded for 90% of the measurement period) respectively. Road traffic noise is generally described using the L_{A10} index (i.e. the level exceeded for 10% of the measurement period).

The results of the statistical measurements and frequency measurements conducted during the survey are summarised in the following table. All values are sound pressure levels in dB (re: 2 x 10^{-5} Pa). For the long-term (LT) locations, the presented $L_{Aeq,T}$ and $L_{A10,T}$ are average noise levels whilst the L_{A90} is the modal noise level of each 5 minute measurement over the stated survey period.

Table 4.3 Results of Baseline Noise Monitoring Survey (Average Levels)

Period	Duration (T)	Monitoring Date and Times	Location	$L_{Aeq,T}$ (dB)	$L_{Amax,T}$ (dB)	$L_{Amin,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
Weekday Daytime 07:00 - 23:00	45 Hours	13/06/2019 - 18/06/2019 13:31 - 10:06	LT1	59.8	101.1	36.9	60.9	54.0
Weekday Night-time 23:00 – 07:00	24 Hours	13/06/2019 - 18/06/2019 23:00 - 07:00		54.8	88.3	35.2	55.6	46.0
Weekend Daytime 07:00 - 23:00	32 Hours	15/06/2019 - 16/06/2019 07:00 - 23:00		60.0	86.1	43.3	62.1	55.0
Weekend Night-time 23:00 – 07:00	16 hours	15/06/2019 - 16/06/2019 23:00 - 07:00		55.1	78.9	37.7	56.7	41.0
Weekday Daytime 07:00 - 23:00	45 Hours	13/06/2019 - 18/06/2019 13:41 - 10:11	LT2	65.1	97.9	40.8	67.5	58.0
Weekday Night-time 23:00 – 07:00	24 Hours	13/06/2019 - 18/06/2019 23:00 - 07:00		59.3	87.1	38.9	61.3	42.0
Weekend Daytime 07:00 - 23:00	32 Hours	15/06/2019 - 16/06/2019 07:00 - 23:00		64.0	97.2	40.1	66.6	57.0
Weekend Night-time 23:00 – 07:00	16 hours	15/06/2019 - 16/06/2019 23:00 - 07:00		58.4	93.2	40.1	61.8	44.0
Weekday Daytime 07:00 - 23:00	45 Hours	13/06/2019 - 18/06/2019 13:51 - 10:11	LT3	59.5	84.3	47.6	61.3	56.0
Weekday Night-time 23:00 – 07:00	24 Hours	13/06/2019 - 18/06/2019 23:00 - 07:00		55.2	80.3	39.4	57.3	46.0
Weekend Daytime 07:00 - 23:00	32 Hours	15/06/2019 - 16/06/2019 07:00 - 23:00		59.3	79.5	50.2	61.3	55.0
Weekend Night-time 23:00 – 07:00	16 hours	15/06/2019 - 16/06/2019 23:00 - 07:00		54.7	75.8	43.5	57.2	48.0
Weekday Daytime 07:00 - 23:00	45 Hours	13/06/2019 - 18/06/2019 14:00 - 10:20	LT4	65.0	93.9	41.6	59.8	52.0
Weekday Night-time 23:00 – 07:00	24 Hours	13/06/2019 - 18/06/2019 23:00 - 07:00		51.6	80.3	36.7	50.9	43.0
Weekend Daytime 07:00 - 23:00	32 Hours	15/06/2019 - 16/06/2019 07:00 - 23:00		57.1	82.3	42.2	58.6	51.0
Weekend Night-time 23:00 – 07:00	16 hours	15/06/2019 - 16/06/2019 23:00 - 07:00		50.1	71.6	39.0	50.5	46.0
Weekday Daytime 07:00 - 23:00	45 Hours	13/06/2019 - 18/06/2019 14:08 - 10:23	LT5	70.5	100.9	40.3	63.6	50.0

Period	Duration (T)	Monitoring Date and Times	Location	$L_{Aeq,T}$ (dB)	$L_{Amax,T}$ (dB)	$L_{Amin,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
Weekday Night-time 23:00 – 07:00	24 Hours	13/06/2019 - 18/06/2019 23:00 - 07:00		65.0	91.9	38.5	51.9	43.0
Weekend Daytime 07:00 - 23:00	32 Hours	15/06/2019 - 16/06/2019 07:00 - 23:00		68.1	93.0	42.8	59.9	50.0
Weekend Night-time 23:00 – 07:00	16 hours	15/06/2019 - 16/06/2019 23:00 - 07:00		61.2	94.0	40.6	50.6	46.0
Weekday Daytime 07:00 - 23:00	45 Hours	13/06/2019 - 18/06/2019 14:35 - 10:55	LT6	69.7	101.8	46.1	72.8	60.0
Weekday Night-time 23:00 – 07:00	24 Hours	13/06/2019 - 18/06/2019 23:00 - 07:00		64.1	88.9	43.5	65.0	46.0
Weekend Daytime 07:00 - 23:00	32 Hours	15/06/2019 - 16/06/2019 07:00 - 23:00		68.7	99.4	45.1	72.4	56.0
Weekend Night-time 23:00 – 07:00	16 hours	15/06/2019 - 16/06/2019 23:00 - 07:00		63.4	87.8	44.2	66.1	48.0
Weekday Daytime 07:00 - 23:00	45 Hours	13/06/2019 - 18/06/2019 13:09 - 09:54	LT7	56.2	88.2	33.0	57.8	52.0
Weekday Night-time 23:00 – 07:00	24 Hours	13/06/2019 - 18/06/2019 23:00 - 07:00		49.9	85.3	37.5	50.8	43.0
Weekend Daytime 07:00 - 23:00	32 Hours	15/06/2019 - 16/06/2019 07:00 - 23:00		55.3	83.3	41.3	57.4	52.0
Weekend Night-time 23:00 – 07:00	16 hours	15/06/2019 - 16/06/2019 23:00 - 07:00		49.1	84.5	38.5	51.0	44.0
Weekday Daytime 07:00 - 23:00	45 Hours	13/06/2019 - 18/06/2019 12:54 - 10:04	LT8	54.5	88.0	39.0	55.5	48.0
Weekday Night-time 23:00 – 07:00	24 Hours	13/06/2019 - 18/06/2019 23:00 - 07:00		48.4	72.6	38.0	48.9	47.0
Weekend Daytime 07:00 - 23:00	32 Hours	15/06/2019 - 16/06/2019 07:00 - 23:00		53.4	84.0	39.3	55.2	48.0
Weekend Night-time 23:00 – 07:00	16 hours	15/06/2019 - 16/06/2019 23:00 - 07:00		48.3	71.7	39.8	49.0	48.0
Weekday Daytime 07:00 - 23:00	45 Hours	13/06/2019 - 18/06/2019 14:26 - 10:31	LT9	60.9	96.5	43.3	59.7	51.0
Weekday Night-time 23:00 – 07:00	24 Hours	13/06/2019 - 18/06/2019 23:00 - 07:00		51.8	81.6	40.7	50.8	46.0
Weekend Daytime 07:00 - 23:00	32 Hours	15/06/2019 - 16/06/2019 07:00 - 23:00		56.5	81.9	43.9	57.7	51.0
Weekend Night-time 23:00 – 07:00	16 hours	15/06/2019 - 16/06/2019 23:00 - 07:00		49.7	71.9	42.3	49.9	46.0
Daytime 9:30-16:30	15 Mins	17/06/2019 15:49	ST1	52.9	71.7	42.3	52.2	47.5
	15 Mins	17/06/2019 16:12	ST2	75.5	88.0	50.6	73.5	70.4
	15 Mins	17/06/2019 14:22	ST3	75.0	91.0	51.2	71.8	71.0

Period	Duration (T)	Monitoring Date and Times	Location	$L_{Aeq,T}$ (dB)	$L_{Amax,T}$ (dB)	$L_{Amin,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
	15 Mins	17/06/2019 14:59	ST4	73.3	87.5	49.8	71.4	71.5
	15 Mins	17/06/2019 15:19	ST5	59.6	78.2	43.8	52.4	47.3
	15 Mins	17/06/2019 13:57	ST6	62.8	80.6	47.8	60.3	54.1
	15 Mins	17/06/2019 13:34	ST7	69.4	83.0	51.9	68.4	67.8
	15 Mins	17/06/2019 15:57	ST8	63.9	93.5	42.4	55.9	45.2
	15 Mins	17/06/2019 14:12	ST9	57.6	73.9	45.7	60.0	51.2
	15 Mins	17/06/2019 14:31	ST10	57.9	72.3	50.9	60.7	52.4
	15 Mins	17/06/2019 14:57	ST11	57.5	79.1	45.5	60.7	48.8
Evening 19:00 - 23:00	15 Mins	17/06/2019 20:03	ST1	50.2	65.1	39.4	53.2	44.2
	15 Mins	17/06/2019 20:20	ST2	74.7	93.9	51.2	78.9	60.7
	15 Mins	17/06/2019 19:39	ST3	73.8	90.0	49.0	71.1	68.1
	15 Mins	17/06/2019 20:22	ST4	72.2	88.4	45.0	69.2	70.7
	15 Mins	17/06/2019 20:02	ST5	60.2	79.6	42.1	51.5	45.7
	15 Mins	17/06/201919:19	ST6	61.6	78.5	44.2	58.7	55.0
	15 Mins	17/06/201919:00	ST7	67.8	91.2	54.9	65.9	65.5
	15 Mins	17/06/2019 19:42	ST8	64.0	91.3	40.2	59.7	43.2
Night-time 23:00 - 07:00	15 Mins	17/06/2019 23:50	ST1	44.1	60.4	38.4	46.2	40.5
	15 Mins	18/06/2019 00:08	ST2	66.3	87.1	40	69.5	45.3
	15 Mins	17/06/2019 23:35	ST3	68.1	89.8	45.4	59.0	48.0
	15 Mins	17/06/2019 00:16	ST4	66.5	84.7	40.5	56.8	44.5
	15 Mins	17/06/2019 23:57	ST5	52.4	69.6	36.6	43.9	39.6
	15 Mins	17/06/2019 23:17	ST6	56.1	74.9	42.4	51.4	45.5
	15 Mins	17/06/2019 23:00	ST7	63.9	86.1	44.5	60.3	59.4
	15 Mins	17/06/2019 23:27	ST8	48.0	65.3	38.8	48.8	40.8

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa

5.0 Assessment of Key Effects

5.1 Scenario 1 – Storage and Distribution Units

Site Operations

5.1.1 Noise Intrusion Assessment

A combined noise intrusion assessment (including all HGV operations and staff car parking) has been undertaken which considers the effects of noise with respect to sleep disturbance and internal noise levels.

Internal noise levels, at nearby sensitive receptors from HGVs manoeuvring, parking and docking, including full use of the car parks, have been assessed both with windows open, where a reduction from a partially open window of 15 dB has been used, and with windows closed where an assumption of single glazing with a sound reduction of 30 dB has been used.

Table 5.1 Combined Assessment Noise Intrusion Levels Daytime $L_{Aeq\ 1\ hour}$

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	BS 8233 / WHO Criteria – Internal L_{Aeq}
R01	43.6	28.6	13.6	35
R02	40.4	25.4	10.4	35
R03	39.4	24.4	9.4	35
R04	44.2	29.2	14.2	35
R05	41.8	26.8	11.8	35
R06	42.3	27.3	12.3	35
R07	28.0	13.0	0.0	35
R08	33.2	18.2	3.2	35
R09	29.6	14.6	0.0	35
R10	30.7	15.7	0.7	35
R11	32.3	17.3	2.3	35

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

Table 5.2 Combined Assessment Noise Intrusion Levels Night-Time $L_{Aeq15\ min}$

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	BS 8233 / WHO Criteria – Internal L_{Aeq}
R01	44.0	29.0	14.0	30
R02	39.4	24.4	9.4	30
R03	39.8	24.8	9.8	30
R04	46.1	31.1	16.1	30
R05	49.7	34.7	19.7	30
R06	47.7	32.7	17.7	30
R07	23.5	8.5	0.0	30
R08	33.2	18.2	3.2	30
R09	30.9	15.9	0.9	30

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	BS 8233 / WHO Criteria – Internal L_{Aeq}
R10	30.9	15.9	0.9	30
R11	32.5	17.5	2.5	30

All values are sound pressure levels in dB re: 2x 10^{-5} Pa.

Table 5.3 Combined Assessment Noise Intrusion Levels Night-Time L_{Amax}

Location	External L_{Amax}	Internal L_{Amax} with windows open	Internal L_{Amax} with windows closed	BS 8233 / WHO Criteria – Internal L_{Amax}
R01	58.8	43.8	28.8	45
R02	54.0	39.0	24.0	45
R03	53.4	38.4	23.4	45
R04	58.6	43.6	28.6	45
R05	64.3	49.3	34.3	45
R06	61.8	46.8	31.8	45
R07	44.6	29.6	14.6	45
R08	48.3	33.3	18.3	45
R09	44.9	29.9	14.9	45
R10	44.0	29.0	14.0	45
R11	47.8	32.8	17.8	45

All values are sound pressure levels in dB re: 2x 10^{-5} Pa.

The assessment presented in the tables above show that internal daytime L_{Aeq}, night-time L_{Aeq} and L_{Amax} noise levels from all potential sources associated with the units, with closed windows would all be below the relevant noise intrusion criteria at all receptors and below the Lowest Observable Adverse Effect Level. With windows open, predicted noise level receptors at Wexham road to the east of the site, have the potential to exceed the relevant guidance during the night-time period. As such additional mitigation measures are considered in section 6.0 below.

5.1.2 BS 4142:2014 Assessment

This assessment has been undertaken to establish the noise from the proposed operations associated with the proposed distribution units (including HGV movements, docking, unloading and parking). The assessment compares the typical existing background L_{A90} noise levels (assuming 24-hour operation) at nearby sensitive receptor locations. In order to account for any potential impulsivity of the noise that may be perceptible at nearby receptors, a + 3 dB correction has been added before comparison with background levels to create the noise rating level in accordance with section 9.2 of BS 4142:2014 + A1:2019.

Table 5.4 BS4142 Assessment for Proposed HGV Operations

Location	Measured Background L_{A90}		Specific level from operations		Rating Level from operations (inclusive of +3dB Correction)		BS 4142 Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R01	54	41	42	43	45	46	-9	5
R02	54	41	36	34	39	37	-15	-4
R03	48	47	36	38	39	41	-9	-6
R04	52	43	42	45	45	48	-8	5
R05	52	43	42	49	45	52	-8	9
R06	52	43	41	47	44	50	-8	7
R07	50	43	28	23	31	26	-19	-17
R08	58	42	33	33	36	36	-22	-6
R09	58	42	30	31	33	34	-26	-8
R10	58	42	30	31	33	34	-25	-8
R11	54	41	30	30	33	33	-21	-8

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

As shown in Table 5.4 above, noise levels from the proposed HGV operations are predicted to be at or below background levels during the daytime, which is an indication of a low impact. However, during the night-time period, noise levels at sensitive receptors along Wexham Road and Hazlemere Road are predicted to be up to 9 dB above background, which is considered to be an indication of an adverse impact. Therefore, taking into account the noise intrusion assessments presented above, additional mitigation has been included for the site within Section 6.0 below.

5.2 Scenario 2 – Data Centre

The assessment below includes noise sources for a proposed 'data centre' use scenario. As discussed above, this scenario includes intrinsic mitigation measures, these are detailed within the table below.

Table 5.5 Intrinsic Mitigation Measures

Plant Unit	Mitigation Measure	Attenuation Provided (dBA)
Roof Exhaust	attenuator / silencer	25.0
AHU Louvres	attenuated Louvre	15.0
Emergency Generators	louvred screen around perimeter of generator areas	10.0

5.2.1 BS 4142:2014 Assessment (Typical Operations)

This assessment has been undertaken to establish the noise from the proposed operations associated with the data centre. As discussed above, under 'typical' scenarios 1 & 2, generators will only be tested during the

daytime, which includes the operation of only 1 generator for a maximum of 1.5 hours, which is reflected within this assessment.

The assessment compares the typical existing background L_{A90} noise levels (assuming 24-hour operation) at nearby sensitive receptor locations. As the plant may have a 'distinguishable hum' which has the potential to be 'clearly perceptible' at the nearest receptors, a + 4 dB correction has been added before comparison with background levels to create the noise rating level in accordance with section 9.2 of BS 4142:2014 + A1:2019.

Table 5.6 BS4142 Assessment for Proposed Data Centre

Location	Measured Background L_{A90}		Specific Noise level		Rating Noise Level (inclusive of +4 dB Correction)		BS 4142 Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R01	54	41	36	36	40	40	-14	-1
R02	54	41	40	40	44	44	-10	3
R03	48	47	40	39	44	43	-4	-4
R04	52	43	43	39	47	43	-5	0
R05	52	43	46	41	50	45	-2	2
R06	52	43	45	39	49	43	-3	0
R07	50	43	30	29	34	33	-16	-10
R08	58	42	34	34	38	38	-20	-4
R09	58	42	33	32	37	36	-22	-6
R10	58	42	38	36	42	40	-17	-2
R11	54	41	33	32	37	36	-17	-5

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

As shown in Table 5.6 above, rating noise levels from the operation of the proposed data centre are predicted to be no more than 3 dB above the existing L_{A90} background noise levels, which is an indication of a low impact.

5.2.2 Back-up Generators (Emergency Scenario)

As the 'emergency scenario' is only ever likely to occur during a power outage it is not considered to be an intrinsic part of the overall sound emanating from the premises or process and therefore falls outside the scope of BS4142. However, a separate assessment has been undertaken in accordance with BS8233:2014 where a noise intrusion assessment (including the combined typical operation of the site, along with the 100% operation of the back-up generators operating during an emergency event) has been undertaken which considers the effects of noise with specific respect to sleep disturbance.

Internal noise levels have been assessed both with windows open, where a reduction from a partially open window of 15 dB has been used, and with windows closed where an assumption of single glazing with a sound reduction of 30 dB has been used.

Table 5.7 'Emergency Scenario' Assessment Noise Intrusion Levels $L_{Aeq\ 1\ hour}$

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	BS 8233 / WHO Criteria – Internal L_{Aeq} Daytime / Night-time
R01	39.7	24.7	9.7	35 / 30
R02	42.3	27.3	12.3	35 / 30
R03	43.8	28.8	13.8	35 / 30
R04	52.3	37.3	22.3	35 / 30
R05	52.7	37.7	22.7	35 / 30
R06	52.5	37.5	22.5	35 / 30
R07	33.4	18.4	3.4	35 / 30
R08	39.9	24.9	9.9	35 / 30
R09	40.8	25.8	10.8	35 / 30
R10	47.8	32.8	17.8	35 / 30
R11	40.0	25.0	10.0	35 / 30

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

The assessment presented in the table above shows that internal daytime L_{Aeq} and night-time L_{Aeq} noise levels from all potential sources, with closed windows, would all be below the relevant noise intrusion criteria at all receptors and below the Lowest Observable Adverse Effect Level. With windows open, predicted noise level receptors at Wexham road to the east of the site, have the potential to slightly exceed the relevant guidance. However, given the emergency and temporary nature of this sound source and that this scenario is only likely to occur for very short periods of time through a year, this slight exceedance is considered to be of a negligible significance in accordance with note 3 of BS8233:2014 which states *these levels are based on annual average data and do not have to be achieved in all circumstances.* This would include very temporary and emergency events.

Furthermore, note 7 within BS8233:2014 states that *where development is necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up 5 dB and reasonable internal conditions still achieved.*

5.3 Off-site Traffic Noise Assessment

Based on the traffic data provided by i-Transport a number of assessments have been undertaken which compares different scenarios to determine the change in noise levels resulting from the worst-case 2026 future scenario with the Proposed Development scenarios. An assessment of the potential percentage change in traffic has been presented within tables 5.8 and 5.12 below.

Table 5.8 2021 Baseline vs 2026 Development Scenario 1b

Link	Road	18hr AAWT 2021 Baseline	18hr AAWT 2026 Development Scenario 1b	Percentage Change (%)
1	A412 Uxbridge Road North of Broadmark Road	28499	30704	7.7

Link	Road	18hr AAWT 2021 Baseline	18hr AAWT 2026 Development Scenario 1b	Percentage Change (%)
2	A412 Uxbridge Road South of Broadmark Road	29699	31528	6.2
3	Broadmark Road	6233	7020	12.6
4	Wexham Road North of St Pauls Avenue	16211	17777	9.7
5	Wexham Road South of Petersfield Avenue	14054	16340	16.3
7	Petersfield Avenue	6417	6802	6.0
8	B416 Stoke Road north of Petersfield Avenue	14576	15440	5.9
10	B416 Stoke Road South of Stoke Gardens	19495	20646	5.9
11	A4 Wellington Street West of Stoke Road	34601	36737	6.2
12	A4 Wellington Street East of Stoke Road	27549	29262	6.2
13	A4 Wellington street East of HTC Roundabout	39615	43492	9.8
14	A4 Wellington Street East of Wexham Road	39203	43163	10.1
15	A4 Wellington Street East of Sainsburys	38211	40943	7.2

Table 5.9 2021 Baseline vs 2026 Development Scenario 2b

Link	Road	18hr AAWT 2021 Baseline	18hr AAWT 2026 Development Scenario 2b	Percentage Change (%)
1	A412 Uxbridge Road North of Broadmark Road	28499	30703	7.7
2	A412 Uxbridge Road South of Broadmark Road	29699	31536	6.2
3	Broadmark Road	6233	7012	12.5
4	Wexham Road North of St Pauls Avenue	16211	17769	9.6
5	Wexham Road South of Petersfield Avenue	14054	16356	16.4
7	Petersfield Avenue	6417	6802	6.0
8	B416 Stoke Road north of Petersfield Avenue	14576	15440	5.9
10	B416 Stoke Road South of Stoke Gardens	19495	20646	5.9
11	A4 Wellington Street West of Stoke Road	34601	36744	6.2
12	A4 Wellington Street East of Stoke Road	27549	29276	6.3
13	A4 Wellington street East of HTC Roundabout	39615	43495	9.8
14	A4 Wellington Street East of Wexham Road	39203	43172	10.1
15	A4 Wellington Street East of Sainsburys	38211	40942	7.1

Table 5.10 2021 Baseline vs 2026 Development Scenario 3b

Link	Road	18hr AAWT 2021 Baseline	18hr AAWT 2026 Development Scenario 3b	Percentage Change (%)
1	A412 Uxbridge Road North of Broadmark Road	28499	30524	7.1
2	A412 Uxbridge Road South of Broadmark Road	29699	31496	6.1
3	Broadmark Road	6233	6889	10.5
4	Wexham Road North of St Pauls Avenue	16211	17547	8.2
5	Wexham Road South of Petersfield Avenue	14054	15719	11.8
7	Petersfield Avenue	6417	6802	6.0
8	B416 Stoke Road north of Petersfield Avenue	14576	15440	5.9
10	B416 Stoke Road South of Stoke Gardens	19495	20646	5.9
11	A4 Wellington Street West of Stoke Road	34601	36668	6.0
12	A4 Wellington Street East of Stoke Road	27549	29187	5.9
13	A4 Wellington street East of HTC Roundabout	39615	42748	7.9
14	A4 Wellington Street East of Wexham Road	39203	42430	8.2
15	A4 Wellington Street East of Sainsburys	38211	40756	6.7

Table 5.11 2021 Baseline vs 2026 Construction Scenario 1a

Link	Road	18hr AAWT 2021 Baseline	18hr AAWT 2026 Construction Scenario 1a	Percentage Change (%)
1	A412 Uxbridge Road North of Broadmark Road	28499	30620	7.4
2	A412 Uxbridge Road South of Broadmark Road	29699	31528	6.2
3	Broadmark Road	6233	6953	11.5
4	Wexham Road North of St Pauls Avenue	16211	17659	8.9
5	Wexham Road South of Petersfield Avenue	14054	16097	14.5
7	Petersfield Avenue	6417	6802	6.0
8	B416 Stoke Road north of Petersfield Avenue	14576	15440	5.9
10	B416 Stoke Road South of Stoke Gardens	19495	20702	6.2
11	A4 Wellington Street West of Stoke Road	34601	37046	7.1
12	A4 Wellington Street East of Stoke Road	27549	29565	7.3
13	A4 Wellington street East of HTC Roundabout	39615	42832	8.1
14	A4 Wellington Street East of Wexham Road	39203	42430	8.2
15	A4 Wellington Street East of Sainsburys	38211	40756	6.7

Table 5.12 2021 Baseline vs 2026 Construction Scenario 1a

Link	Road	18hr AAWT 2021 Baseline	18hr AAWT 2026 Construction Scenario 1b	Percentage Change (%)
1	A412 Uxbridge Road North of Broadmark Road	28499	30799	8.1
2	A412 Uxbridge Road South of Broadmark Road	29699	31568	6.3
3	Broadmark Road	6233	7076	13.5
4	Wexham Road North of St Pauls Avenue	16211	17881	10.3
5	Wexham Road South of Petersfield Avenue	14054	16734	19.1
7	Petersfield Avenue	6417	6802	6.0
8	B416 Stoke Road north of Petersfield Avenue	14576	15440	5.9
10	B416 Stoke Road South of Stoke Gardens	19495	20702	6.2
11	A4 Wellington Street West of Stoke Road	34601	37122	7.3
12	A4 Wellington Street East of Stoke Road	27549	29654	7.6
13	A4 Wellington street East of HTC Roundabout	39615	43579	10.0
14	A4 Wellington Street East of Wexham Road	39203	43172	10.1
15	A4 Wellington Street East of Sainsburys	38211	40942	7.1

In accordance with the guidance presented within 'Design Manual for Roads and Bridges' (DMRB) HD 213/11 section 3, a 25% increase in road traffic volumes would be required to result in a 1 dB(A) change in noise level. The tables above demonstrate that there are no potential changes above 25% and therefore a noise level change of less than 1 dB(A) is predicted in all surrounding areas of the Proposed Development.

With reference to table 2.2 within section 2.0 above, a change of less than 1 dB(A) is considered to be 'Negligible Adverse' (noise level changes of ±3 dB are generally imperceptible to the human ear) and the change in noise levels fall within the No Observed Adverse Effect Level (NOAEL).

6.0 Mitigation

6.1 Scenario 1 – Storage and Distribution Units

The assessments above indicate that, in the absence of any additional mitigation, the relevant noise guideline criteria have the potential to be exceeded, particularly during the night-time period. Therefore, additional mitigation has been included at the site in the form of a 5.0m acoustic barrier along part of the western boundary (adjacent to Wexham Road) and a 3.0m barrier along the southern boundary of the Plot 1 / 2 HGV service yard area. The location of the barriers is shown illustratively on SK04 within Appendix B; the assessments presented below are inclusive of this mitigation.

6.1.1 Noise Intrusion Assessment (Including Mitigation)

Table 6.1 Combined Assessment Noise Intrusion Levels Daytime $L_{Aeq\ 1\ hour}$ (Including Mitigation)

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	BS 8233 / WHO Criteria – Internal L_{Aeq}
R01	40.2	25.2	10.2	35
R02	39.6	24.6	9.6	35
R03	39.4	24.4	9.4	35
R04	43.2	28.2	13.2	35
R05	38.0	23.0	8.0	35
R06	39.4	24.4	9.4	35
R07	28.0	13.0	0.0	35
R08	33.2	18.2	3.2	35
R09	29.6	14.6	0.0	35
R10	30.7	15.7	0.7	35
R11	31.4	16.4	1.4	35

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

Table 6.2 Combined Assessment Noise Intrusion Levels Night-Time $L_{Aeq\ 15min}$ (Including Mitigation)

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	BS 8233 / WHO Criteria – Internal L_{Aeq}
R01	40.7	25.7	10.7	30
R02	39.0	24.0	9.0	30
R03	39.7	24.7	9.7	30
R04	43.7	28.7	13.7	30
R05	49.0	34.0	19.0	30
R06	44.0	29.0	14.0	30
R07	23.5	8.5	0.0	30
R08	33.2	18.2	3.2	30
R09	30.9	15.9	0.9	30
R10	30.9	15.9	0.9	30
R11	31.6	16.6	1.6	30

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

Table 6.3 Combined Assessment Noise Intrusion Levels Night-Time L_{Amax} (Including Mitigation)

Location	External L_{Amax}	Internal L_{Amax} with windows open	Internal L_{Amax} with windows closed	BS 8233 / WHO Criteria – Internal L_{Amax}
R01	53.2	38.2	23.2	45
R02	46.2	31.2	16.2	45
R03	53.4	38.4	23.4	45
R04	54.3	39.3	24.3	45
R05	63.1	48.1	33.1	45
R06	55.8	40.8	25.8	45
R07	44.6	29.6	14.6	45
R08	48.3	33.3	18.3	45
R09	44.9	29.9	14.9	45
R10	44.0	29.0	14.0	45
R11	40.6	25.6	10.6	45

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

The assessment presented in the tables above show that, with the inclusion of mitigation, internal daytime L_{Aeq}, night-time L_{Aeq} and L_{Amax} noise levels from all potential sources, with closed and open windows would all be below the relevant noise intrusion criteria at existing residential receptors and below the Lowest Observable Adverse Effect Level with the exception of R05 (101a Wexham Road) where further mitigation will be considered.

6.1.2 BS 4142:2014 Assessment (Including Mitigation)

Table 6.4 BS4142 Assessment for Proposed HGV Operations (Including Mitigation)

Location	Measured Background L_{A90}		Specific level from operations		Rating Level from operations (inclusive of +3dB Correction)		BS 4142 Score	
	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time
R01	54	41	36	38	39	41	-15	0
R02	54	41	33	33	36	36	-18	-5
R03	48	47	36	38	39	41	-9	-6
R04	52	43	39	41	42	44	-10	1
R05	52	43	37	49	40	52	-12	9
R06	52	43	38	41	41	44	-12	1
R07	50	43	28	23	31	26	-19	-17
R08	58	42	33	33	36	36	-22	-6
R09	58	42	30	31	33	34	-26	-8
R10	58	42	30	31	33	34	-25	-8
R11	54	41	28	29	31	32	-23	-9

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

As shown in Table 6.4 above, with the inclusion of mitigation, noise levels from the proposed HGV operations

are predicted to be no more than 1 dB above background levels during both the daytime and night-time, which is an indication of a low impact at existing residential properties. However, as identified above, this is with the exception of R05 (101a Wexham Road) where further mitigation will be considered.

6.1.3 Proposed Residential Area

It is understood that, as part of the wider scheme, there is a proposed residential area to the south of the proposed industrial site (as labelled on SK02 within Appendix B). Although there is no fixed masterplan, an indicative assessment has been undertaken to assess the predicted noise levels from the proposed industrial site at the worst-case potential facades of these proposed dwellings. An indicative layout and sensitive receptor locations are shown on SK02.

Table 6.5 Noise Intrusion Levels Daytime $L_{Aeq\ 1\ hour}$ (Proposed Dwellings)

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	BS 8233 / WHO Criteria – Internal L_{Aeq}
PR01	50.4	35.4	20.4	35
PR02	50.0	35.0	20.0	35
PR03	52.0	37.0	22.0	35
PR04	52.2	37.2	22.2	35

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

Table 6.6 Noise Intrusion Levels Night-Time $L_{Aeq\ 15min}$ (Proposed Dwellings)

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	BS 8233 / WHO Criteria – Internal L_{Aeq}
PR01	40.0	25.0	10.0	30
PR02	36.1	21.1	6.1	30
PR03	47.4	32.4	17.4	30
PR04	40.5	25.5	10.5	30

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

Table 6.7 Noise Intrusion Levels Night-Time L_{Amax} (Proposed Dwellings)

Location	External L_{Amax}	Internal L_{Amax} with windows open	Internal L_{Amax} with windows closed	BS 8233 / WHO Criteria – Internal L_{Amax}
PR01	68.7	53.7	38.7	45
PR02	68.7	53.7	38.7	45
PR03	69.9	54.9	39.9	45
PR04	70.7	55.7	40.7	45

All values are sound pressure levels in dB re: $2x\ 10^{-5}$ Pa.

As shown within the table above, assuming a window closed scenario, noise level criteria is met across both the daytime and night-time scenario. However, with windows open, noise level criteria have the potential to be exceeded. It is considered that the detailed design of the proposed residential site will require a separate noise assessment, however, the predictions above demonstrate that the dwellings will need to include intrinsic acoustic mitigation in the form of standard double glazing (with a minimum sound reduction of R_w + C_{tr} 30 dB) and alternative means of ventilation which matches the performance of the glazing to achieve the BS 8233 target internal noise level criteria.

6.2 Scenario 2 – Data Centre

As discussed above, the assessment above includes noise sources for a proposed 'data centre' use scenario**.** As discussed above, this scenario includes intrinsic mitigation measures, these are detailed within the table below.

Table 6.8 Intrinsic Mitigation Measures

Plant Unit	Mitigation Measure	Attenuation Provided (dBA)
Roof Exhaust	attenuator / silencer	25.0
AHU Louvres	attenuated Louvre	15.0
Emergency Generators	louvred screen around perimeter of generator areas	10.0

6.2.1 Proposed Residential Area

It is understood that, as part of the wider scheme, there is a proposed residential area to the south of the proposed industrial site (as labelled on SK02 within Appendix B). Although there is no fixed masterplan, an indicative assessment has been undertaken to assess the predicted noise levels from the proposed emergency use of the data centre at the worst-case potential facades of these proposed dwellings. An indicative layout and sensitive receptor locations are shown on SK02.

Table 6.9 Noise Intrusion Levels Daytime $L_{Aeq\ 1\ hour}$ (Proposed Dwellings)

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	BS 8233 / WHO Criteria – Internal L_{Aeq}
PR01	40.3	25.3	10.3	35
PR02	42.6	27.6	12.6	35
PR03	43.9	28.9	13.9	35
PR04	43.9	28.9	13.9	35

All values are sound pressure levels in dB re: 2x 10^{-5} Pa.

Table 6.10 Noise Intrusion Levels Night-Time $L_{Aeq\ 15min}$ (Proposed Dwellings)

Location	External L_{Aeq}	Internal L_{Aeq} with windows open	Internal L_{Aeq} with windows closed	BS 8233 / WHO Criteria – Internal L_{Aeq}
PR01	40.3	25.3	10.3	30
PR02	42.6	27.6	12.6	30
PR03	43.9	28.9	13.9	30
PR04	43.9	28.9	13.9	30

All values are sound pressure levels in dB re: 2x 10^{-5} Pa.

As shown within the table above, noise level criteria is met across both the daytime and night-time scenario assuming windows open or windows closed. Furthermore, it is considered that the detailed design of the proposed residential site will require a separate noise assessment.

7.0 Conclusions of Noise Assessment

This report presents the details of a noise assessment for an outline planning application for the development of the former Akzo Nobel Site situated off Wexham Road, Slough. The NPPF provides test points against which the proposed development has been assessed. Considering these points, the following conclusions can be drawn:

NPPF paragraphs 170 (e) and 180 (a)

Scenario 1 Storage & Distribution Units

A worst-case cumulative noise intrusion assessment has shown that, including mitigation, BS 8233/WHO noise intrusion criteria will be achieved at all of the closest sensitive receptors during both the daytime and night-time with windows open or closed.

Furthermore, a background noise comparison assessment (in accordance with BS4142:2014), which considers worst-case noise levels, has shown that, including mitigation, noise rating levels are predicted to be no more than 1 dB above the background noise level, which is an indication of a low impact.

The finalized mitigation measures in respect of 101A Wexham Road will be dependent on the Reserved Matters layout submitted for a B2/B8 scheme. Bases on the indicative master plan for B2/B8, a 5m acoustic fence has been shown to mitigate noise issues, whilst in respect of the data centre scenario modelled there is no mitigation to this property.

Scenario 2 Data Centre

A background noise comparison assessment (in accordance with BS4142:2014), which considers worst-case noise levels, has shown that, including mitigation, noise rating levels are predicted to be no more than 3 dB above the background noise level, which is an indication of a low impact.

Furthermore, a worst-case cumulative noise intrusion assessment of a emergency scenario has shown that, including mitigation, BS 8233/WHO noise intrusion criteria will be achieved at all of the closest sensitive receptors during both the daytime and night-time with windows closed.

NPPF Paragraphs 180 (b), 182 and 183

Given the current industrial use of the site and surrounding area, and the results of the assessment described above, no nearby businesses are expected to have unreasonable restrictions put on them as a result of the proposals. In addition, it is considered that the continued commercial/industrial use of the site will not have an adverse effect on the tranquillity of the areas and local access to areas of greater tranquillity.

Therefore, for either scenario use, the proposed development is not expected to have a 'significant adverse impact' on health or quality of life.

Off-site Traffic Assessment

An assessment of the change in off-site road traffic noise has been undertaken. The assessments show there are no potential changes above 25% as a result of the development under any potential scenarios and therefore a noise level change of less than 1 dB(A) is predicted in all surrounding areas of the Proposed Development. A change of less than 1 dB(A) is considered to be 'Negligible Adverse' and the change in noise levels fall within the No Observed Adverse Effect Level (NOAEL).

Appendices

Appendix A – Acoustic Terminology and Abbreviations

Acoustic Terminology

dB — Sound levels from any source can be measured in frequency bands in order to provide detailed information about the spectral content of the noise, i.e. whether it is high-pitched, low-pitched, or with no distinct tonal character. These measurements are usually undertaken in octave or third octave frequency bands. If these values are summed logarithmically, a single dB figure is obtained. This is usually not very helpful as it simply describes the total amount of acoustic energy measured and does not take any account of the ear's ability to hear certain frequencies more readily than others.

dB(A) — Instead, the dBA figure is used, as this is found to relate better to the loudness of the sound heard. The dBA figure is obtained by subtracting an appropriate correction, which represents the variation in the ear's ability to hear different frequencies, from the individual octave or third octave band values, before summing them logarithmically. As a result the single dBA value provides a good representation of how loud a sound is.

L_{Aeq} — Since almost all sounds vary or fluctuate with time it is helpful, instead of having an instantaneous value to describe the noise event, to have an average of the total acoustic energy experienced over its duration. The $L_{Aeq,\ 07:00 - 23:00}$ for example, describes the equivalent continuous noise level over the 12 hour period between 7 am and 11 pm. During this time period the L_{pA} at any particular time is likely to have been either greater or lower that the $L_{Aeq,\ 07:00 - 23:00}$.

L_{Amin} — The L_{Amin} is the quietest instantaneous noise level. This is usually the quietest 125 milliseconds measured during any given period of time.

L_{Amax} — The L_{Amax} is the loudest instantaneous noise level. This is usually the loudest 125 milliseconds measured during any given period of time.

L_n — Another method of describing, with a single value, a noise level which varies over a given time period is, instead of considering the average amount of acoustic energy, to consider the length of time for which a particular noise level is exceeded. If a level of x dBA is exceeded for say 6 minutes within one hour, then that level can be described as being exceeded for 10% of the total measurement period. This is denoted as the $L_{A10,\ 1\ hr}$ = x dB.

The L_{A10} index is often used in the description of road traffic noise, whilst the L_{A90}, the noise level exceeded for 90% of the measurement period, is the usual descriptor for underlying background noise. L_{A1} and L_{Amax} are common descriptors of construction noise.

R_w — The *weighted sound reduction index* determined using the above *measurement* procedure, but weighted in accordance with the procedures set down in BS EN ISO 717-1. Partitioning and building board manufacturers commonly use this index to describe the inherent sound insulation performance of their products.

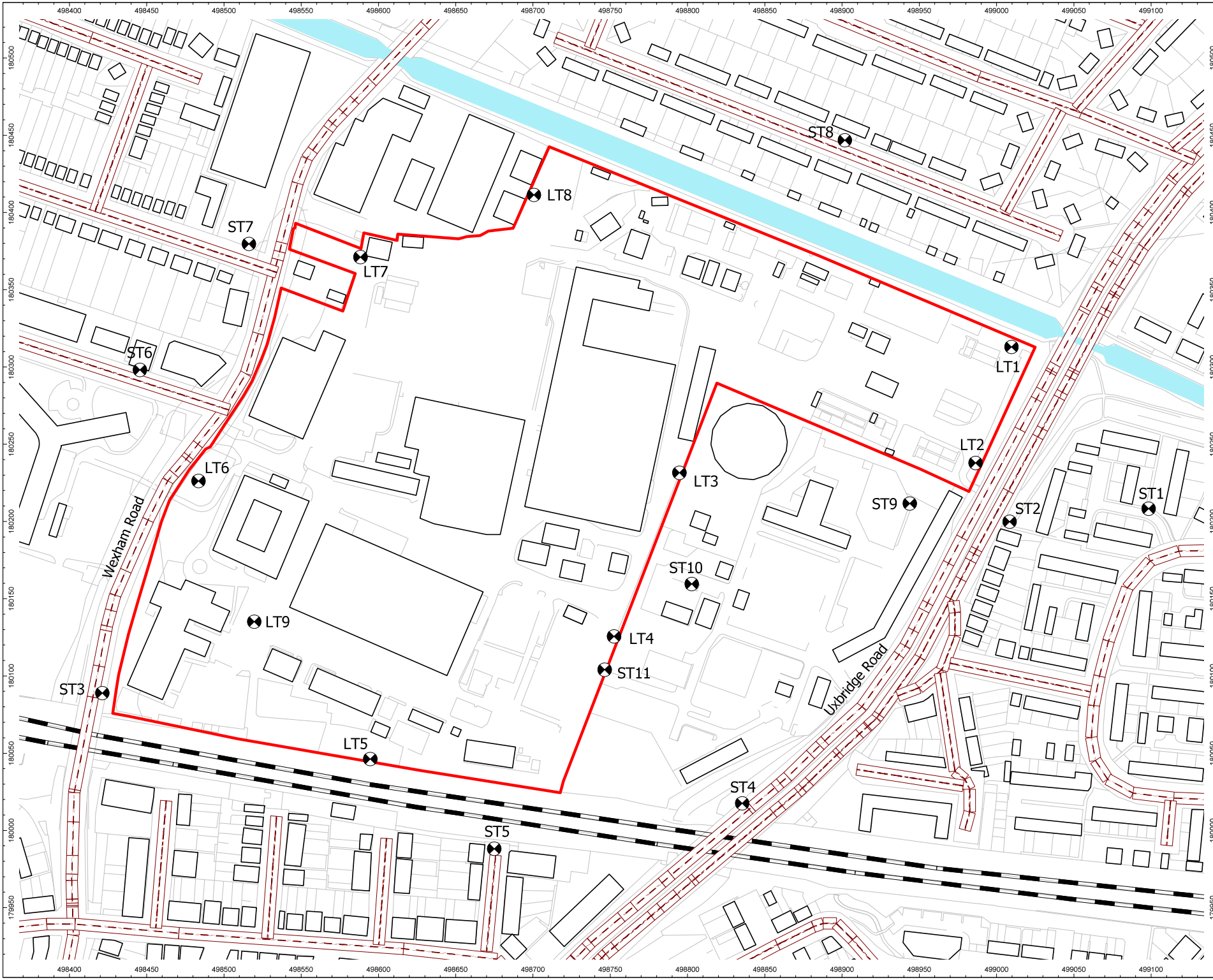
Appendix B – Sketches

SK01 Noise Monitoring Locations

SK02 Sensitive Receptor Locations

SK03 Noise Level Contour Plot, Night-time L_{Aeq} (Including Mitigation) – Storage & Distribution Units

SK04 Typical Noise Level Contour Plot, L_{Aeq} (Including Mitigation) – Data Centre



Client: Panattoni Ltd

SBC PLANNING RECEIVED : 19.12.19

Project:
Akzo Nobel, Slough

Project Number:
A114100

Drawing Title / Scenario:
Noise Monitoring Locations

Drawing Number:
SK01

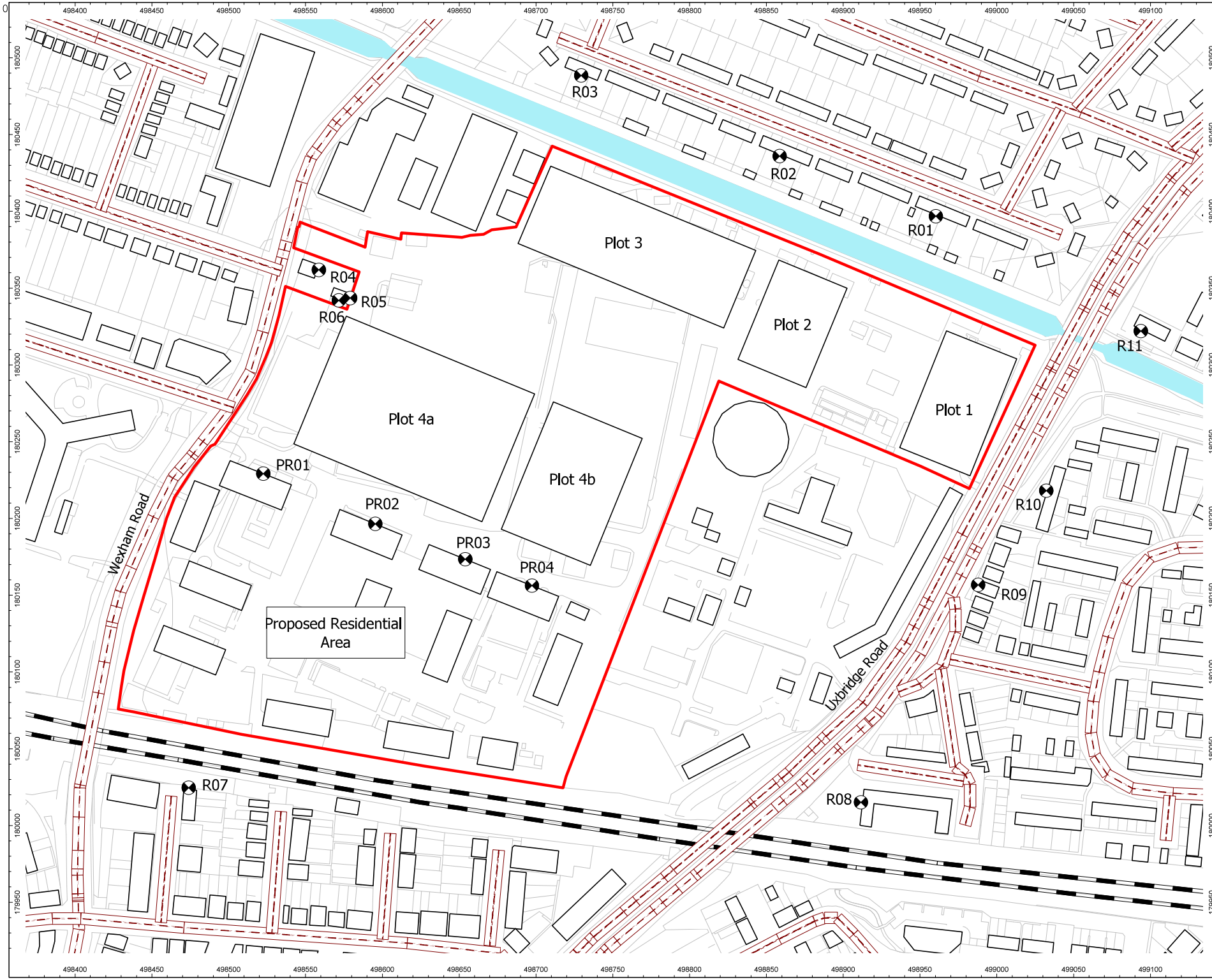
Key:

Site Boundary:

Scale : Not to scale

WYGE Leicester 25.10.19

Executive Park
Avalon Way
Anstey
Leicestershire
LE7 7GR
Tel 0116 234 8000



Client:
Panattoni Ltd

Project:
Akzo Nobel, Slough

Project Number:
A114100

Drawing Title / Scenario:
Sensitive
Receptor Locations

Drawing Number:
SK02

Key:

Site Boundary:

Scale : Not to scale

WYGE Leicester 25.10.19

Executive Park
Avalon Way
Anstey
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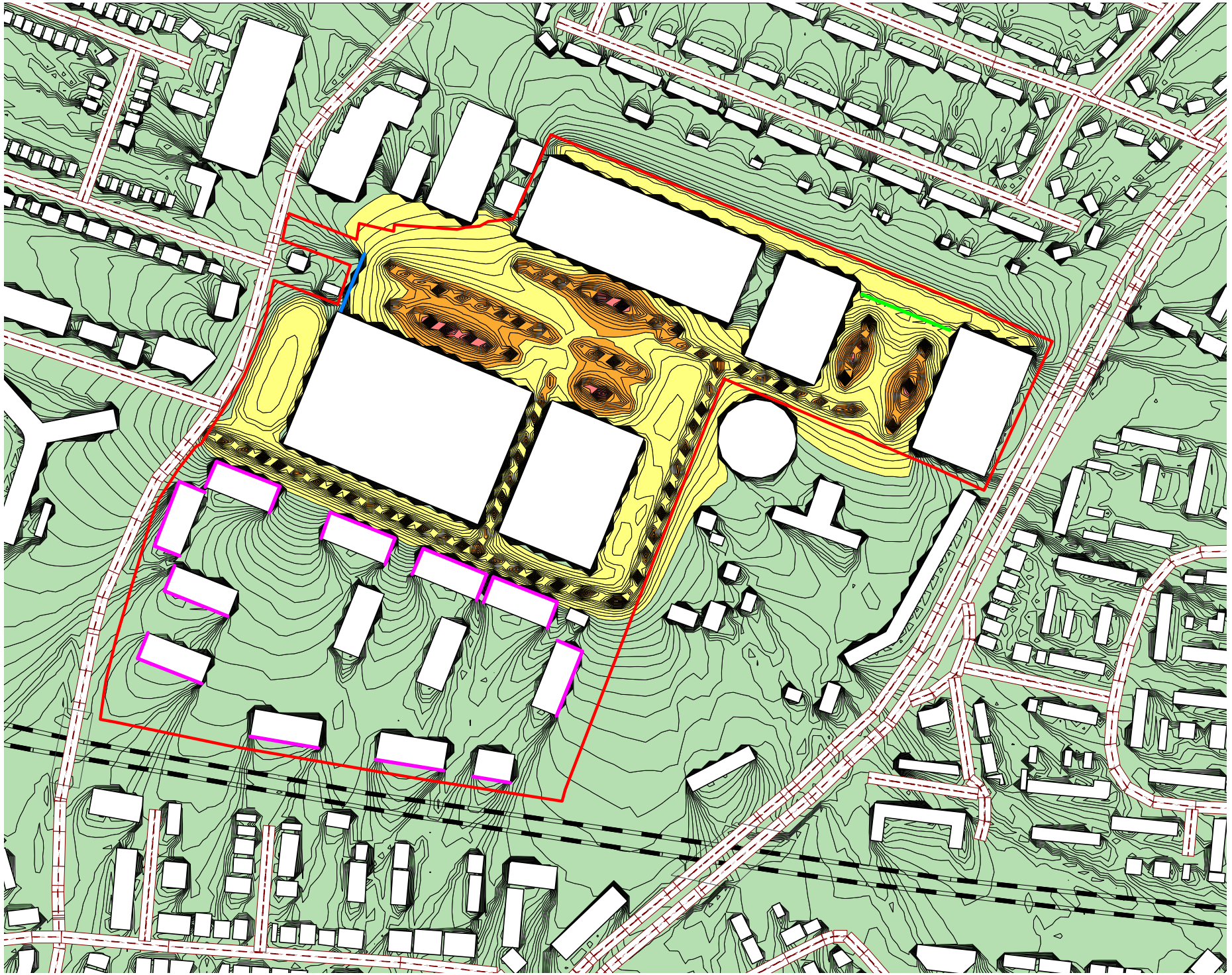
LE7 7GR
Tel 0116 234 8000



Client: Panattoni Ltd

Project:
Akzo Nobel, Slough

Project Number:
A114100

Drawing Title / Scenario:
Noise Level Contour Plot LAeq,1hour (Including Mitigation) Storage & Distribution Units

Drawing Number:
SK03

Key:

Site Boundary:

5.0m Acoustic Barrier:

3.0m Acoustic Barrier:

Indicative Enhnaced Glazing and Ventilation:

- 0.0 - 50.0 dB
- 50.0 - 60.0 dB
- 60.0 - 70.0 dB
- > 70.0 dB

Scale : Not to scale

WYGE Leicester 27.11.19

Executive Park
Avalon Way
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Client:
Panattoni Ltd

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Project:
Akzo Nobel, Slough

Project Number:
A114100

Drawing Title / Scenario:
Noise Level Contour Plot LAeq,1hour (Including Mitigation) Worst-case Indicative Layout of Data Centre in Two Buildings

Drawing Number:
SK03

Key:

Site Boundary:

- 0.0 - 50.0 dB
- 50.0 - 60.0 dB
- 60.0 - 70.0 dB
- > 70.0 dB

Scale : Not to scale

WYGE Leicester 02.12.19

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Appendix C – Report Conditions

This Report has been prepared using reasonable skill and care for the sole benefit of [Panattoni] ("the Client") for the proposed uses stated in the report by [WYG Environment Planning Transport Limited] ("WYG"). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors.

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