

**Hawke Ridge Business Park Ltd and Bellway
Homes Ltd**

Land at Hawke Ridge Business Park

Environmental Statement: Volume 1, Main Text

Chapter 8: Air Quality





8 AIR QUALITY

INTRODUCTION

8.1 This chapter presents the findings of an assessment of local air quality effects associated with the Proposed Development.

8.2 The Proposed Development may introduce the following air quality effects;

- During the construction phase, suspended and re-suspended fugitive dust emissions from demolition / construction activities and vehicular emissions from construction traffic, including re-suspended dust from HGV movements.
- During the operational phase, vehicular emissions (primarily nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}) from increased traffic movements associated with the Proposed Development.

8.3 The potential effects of the Proposed Development on local air quality during both construction and operational phases have been assessed. For both phases, the type, source and significance of potential effects are identified and the measures that should be employed to minimise these effects are described.

8.4 A glossary of common air quality terminology is provided in **Appendix 8.1**.

ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

Scope of Assessment

8.5 The scope of the assessment has been determined in the following way:

- Review of air quality data for the area surrounding the Application Site and background pollutant maps; and
- Review of the traffic flow data, which has been used as an input to the air quality modelling assessment.

8.6 There is the potential for impacts on local air quality during both the construction and operational phases of the Proposed Development. During the construction phase, there is the potential for impacts to occur as a result of dust and PM₁₀ emissions. Guidance provided by the



Institute of Air Quality Management (IAQM) (Ref. 8.1) includes the following criteria for assessing the effects of construction dust:

- A sensitive 'human receptor' within 250m of the site boundary or within 50m of the route used by construction vehicles on public highways up to 250m from the site entrance; and / or
- A sensitive 'ecological receptor' within 50m of the site boundary or within 50m of the route used by construction vehicles on the public highway, up to 250m from the site entrance.

8.7 Residential properties are situated within 250m of the boundary. An assessment of construction phase impacts of dust and particulate matter in relation to human health and nuisance has therefore been included in this assessment. There are no sensitive ecological habitats within 50m of the Application Site boundary, therefore an assessment of construction phase impacts on sensitive ecological habitats has not been considered further.

8.8 During the operation of the Proposed Development there is the potential for impacts on local air quality to occur as a result of emissions from road vehicle trips generated by the operation of the Proposed Development. Guidance provided by the EPUK & IAQM (Ref. 8.2) provides threshold criteria for establishing when significant impacts on local air quality may occur and when a detailed assessment of potential impacts is required. At locations outside an AQMA, a change in light duty vehicles (LDV) of more than 500 per day and / or a change in heavy duty vehicles (HDV) of more than 100 per day is considered to result in potentially significant impacts on air quality. At locations inside an AQMA, a change in LDVs of more than 100 per day and / or a change in HDVs of more than 25 per day is considered to result in potentially significant impacts on air quality.

8.9 The Application Site does not fall within or near to an AQMA. The closest AQMA to the Application Site is the Westbury AQMA, which is located approximately 2.0 km to the southeast of the Application Site. Data provided by the transport consultants indicates that the Proposed Development will result in an increase in LDVs in excess of the threshold values for locations inside and outside an AQMA on a number of local roads. An assessment of impacts arising from vehicle emissions using the local roads has therefore been included in the assessment.

8.10 Based on the criteria provided in Wiltshire's Air Quality SPD and the information above, the Proposed Development is classified as Type 3 (>100 dwellings).



8.11 Consideration has also been given to the suitability of the Application Site for residential development in terms of exposure.

8.12 Details of the assessment methodology and the specific issues considered are provided below.

Construction Phase Methodology

8.13 To assess the potential impacts associated with dust and PM₁₀ releases during the construction phase and to determine any necessary mitigation measures, an assessment based on the latest guidance from the IAQM has been undertaken.

8.14 This approach divides construction activities into the following dust emission sources:

- demolition;
- earthworks;
- construction; and
- trackout.

8.15 The risk of dust effects (low, medium or high) is determined by the scale (magnitude) and nature of the works and the proximity of sensitive human and ecological receptors.

8.16 The significance of the dust effects is based on professional judgement, taking into account the sensitivity of receptors and existing air quality.

Dust Emission Magnitude

8.17 The magnitude of the dust impacts for each source is classified as Small, Medium or Large depending on the scale of the proposed works. Table 8.1 summarises the IAQM criteria that may be used to determine the magnitude of the dust emission. These criteria are used in combination with site specific information and professional judgement.



Table 8.1: Dust Emission Magnitude Criteria

Source	Large	Medium	Small
Demolition	• Total building volume >75,000m³ • Potentially dusty material (e.g. concrete) • Onsite crushing and screening • Demolition activities >12m above ground level.	• Total building volume 12,000 - 75,000m³ • Potentially dusty material • Demolition activities 6-12m above ground level.	• Total building volume <12,000m³ • Construction material with low potential for dust release • Demolition activities <6m above ground level • Demolition during wetter months
Earthworks	• Total site area >110,000m² • Potentially dusty soil type (e.g. clay) • >10 heavy earth moving vehicles active at any one time • Formation of bunds >6m in height	• Total site area 18,000 -110,000m² • Moderately dusty soil type (e.g. silt) • 5 - 10 heavy earth moving vehicles active at any one time • Formation of bunds 3 - 6m in height	• Total site area <18,000m² • Soil type with large grain size (e.g. sand) • <5 heavy earth moving vehicles active at any one time • Formation of bunds <3m in height
Construction	• Total building volume >75,000m³ • On site concrete batching • Sandblasting	• Total building volume 12,000 - 75,000m³ • Potentially dusty construction material (e.g. concrete) • On site concrete batching	• Total building volume <12,000m³ • Material with low potential for dust release (e.g. metal cladding or timber)
Trackout	• >50 HGV movements in any one day (a) • Potentially dusty surface material (e.g. high clay content) • Unpaved road length >100m	• 20 - 50 HGV movements in any one day (a) • Moderately dusty surface material (e.g. silt) • Unpaved road length 50 - 100m	• <20 HGV movements in any one day (a) • Surface material with low potential for dust release • Unpaved road length <50m

(a) HGV movements refer to outward trips (leaving the site) by vehicles of over 3.5 tonnes.

Receptor Sensitivity

8.18 Factors defining the sensitivity of a receptor are presented in Table 8.2.

Table 8.2: Factors Defining the Sensitivity of a Receptor

Sensitivity	Human (health)	Human (dust soiling)	Ecological
High	- Locations where members of the public are exposed over a time period relevant to the air quality objectives for PM₁₀ (a) - Examples include residential dwellings, hospitals, schools and residential care homes.	- Regular exposure - High level of amenity expected. - Appearance, aesthetics or value of the property would be affected by dust soiling. - Examples include residential dwellings, museums, medium and long-term car parks and car showrooms.	- Nationally or Internationally designated site with dust sensitive features (b) - Locations with vascular species (c)
Medium	- Locations where workers are exposed over a time period relevant to the air quality objectives for PM₁₀ (a) - Examples include office and shop workers (d) and parks	- Short-term exposure - Moderate level of amenity expected - Possible diminished appearance or aesthetics of property due to dust soiling - Examples include parks and places of work	- Nationally designated site with dust sensitive features (b) - Nationally designated site with a particularly important plant species where dust sensitivity is unknown
Low	- Transient human exposure - Examples include public footpaths, playing fields, parks and shopping streets	- Transient exposure - Enjoyment of amenity not expected. - Appearance and aesthetics of property unaffected - Examples include playing fields, farmland (e), footpaths, short-term car parks and roads	Locally designated site with dust sensitive features (b)
(a) 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. (b) Ecosystems that are particularly sensitive to dust deposition include lichens and acid heathland (for alkaline dust, such as concrete). (c) Cheffing C. M. & Farrell L. (Editors) (2005), The Vascular Plant. Red Data List for Great Britain, Joint Nature Conservation Committee. (d) Does not include workers exposure to PM₁₀ as protection is covered by Health and Safety at Work legislation. (e) Except commercially sensitive horticulture.			

8.19 The sensitivity of a receptor will also depend on a number of additional factors including any history of dust generating activities in the area, likely cumulative dust impacts from nearby construction sites, any pre-existing screening such as trees or buildings and the likely duration



of the impacts. In addition, the influence of the prevailing wind direction and local topography may be of relevance when determining the sensitivity of a receptor.

Area Sensitivity

8.20 The sensitivity of the area to dust soiling and health impacts is dependent on the number of receptors within each sensitivity class and their distance from the source. In addition, human health impacts are dependent on the existing PM₁₀ concentrations in the area. Tables 8.3 and 8.4 summarise the criteria for determining the overall sensitivity of the area to dust soiling and health impacts respectively.

Table 8.3: Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the source (a)			
		<20m	<50m	<100m	<250m
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low
(a) For trackout, the distance is measured from the side of roads used by construction traffic. Beyond 50m, the impact is negligible.					

Table 8.4: Sensitivity of the Area to Human Health Impacts

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



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

(a) For trackout, the distance is measured from the side of roads used by construction traffic. Beyond 50m, the impact is negligible.

8.21 For each dust emission source (demolition, construction, earthworks and trackout), the worst-case area sensitivity is used in combination with the dust emission magnitude to determine the risk of dust impacts.

Risk of Dust Impacts

8.22 The risk of dust impacts prior to mitigation for each emission source is presented in Tables 8.5 and 8.6.



Table 8.5: 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

Table 8.6: Risk of Dust Impacts – Earthworks, Construction and Trackout

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 Traffic

8.23 Construction traffic will contribute to existing traffic levels on the surrounding road network. The greatest potential for adverse impacts on air quality from traffic associated with the construction of the Proposed Development will be in the areas immediately adjacent to the principal means of access for construction traffic which would be via Hawkeridge Road. It is anticipated that the additional traffic generated by the construction activities is unlikely to be significant in comparison to the existing traffic flows along the construction routes. A detailed assessment of the impact of emissions from construction traffic has therefore been scoped out of this assessment.

Operational Phase Methodology

8.24 Air pollutant concentrations at and in the vicinity of the Application Site arising from the surrounding road network have been predicted using the ADMS Roads (Version 5.1.0, August 2025) which is a commercially available dispersion model and has been widely validated for this type of assessment and used extensively in the Air Quality Review and Assessment process.

8.25 The ADMS Roads model uses detailed information regarding traffic flows on the local road network and local meteorological conditions to predict pollution concentrations at specific



locations selected by the user. Meteorological data from Yeovilton Meteorological Station for 2024 has been used for the assessment.

8.26 The model has been used to predict road specific concentrations of oxides of nitrogen (NO_x) and Particulate Matter (PM₁₀ and PM_{2.5}) at selected receptors in the vicinity of the surrounding road network and within the Application Site itself. The predicted concentrations of NO_x have been converted to NO₂ using the NO_x to NO₂ calculator available on the Defra air quality website (Ref. 8.3).

8.27 Traffic data for road links adjacent to the Application Site has been provided by the Transport Consultants (IMA Transport Planning). A summary of the traffic data used in the assessment can be found in **Appendix 8.2**. The data includes details of annual average daily traffic flows (AADT), vehicle speeds and percentage Heavy Duty Vehicles (HDV) for the assessment years considered. Low traffic speeds have been assigned to appropriate road links to account for congestion and queuing vehicles.

8.28 The following scenarios have been included in the assessment:

- 2024 – base scenario (for verification purposes);
- 2031 – future base scenario plus committed developments in the opening year; and
- 2031 – future base scenario plus committed developments in the opening year plus traffic associated with the Proposed Development (hereafter referred to as 'with development' scenario)

8.29 The emission factors released by Defra in May 2026, provided in the emissions factor toolkit EFT v14.1, which was the latest available at the time of assessment, have been used to predict traffic related emissions in 2024 (for verification purposes) and 2031.

8.30 To predict local air quality, traffic emissions predicted by the model must be added to local background concentrations. Background concentrations of NO₂, PM₁₀ and PM_{2.5} have been taken from the Defra background maps based on a 2021 reference year that were released in November 2024. The maps provide an estimate of background concentrations between 2021 and 2040 and are the latest available at the time of assessment. The data used for the modelling assessment are set out in Table 8.12.

8.31 Background concentrations for the year 2024 have been used to predict concentrations in 2031 assuming no change in future years. This is considered to represent a conservative



approach to the prediction of future concentrations to take account of uncertainty in future background concentrations.

8.32 To determine the performance of the model at a local level, a comparison of modelled results with the results of monitoring carried out within the study area was undertaken. This process aims to minimise modelling uncertainty and systematic error by correcting the modelled results by an adjustment factor to gain greater confidence in the final results. This process was undertaken using the methodology outlined in Chapter 7, Section 4 of LAQM.TG(22).

8.33 A verification factor of 4.01 was determined which indicates that the model is under-predicting in this area. This factor was applied to the modelled road-NO_x concentrations prior to conversion to annual mean NO₂ concentrations using the NO_x to NO₂ calculator. Further details of the determination of the verification factor are provided in **Appendix 8.3**.

8.34 Insufficient local roadside monitoring data were available for concentrations of PM₁₀ and PM_{2.5}. Modelled PM₁₀ and PM_{2.5} concentrations have therefore been adjusted by the verification factor obtained for NO_x, which is consistent with the guidance provided in LAQM.TG(22).

8.35 A quantitative assessment of air quality at and around the Application Site has been completed against the relevant Air Quality Assessment Levels (AQALs) set out in **Appendix 8.4**.

Significance Criteria

Construction Phase

8.36 The IAQM assessment methodology recommends that significance criteria are only assigned to the identified risk of dust impacts occurring from a construction activity following the application of appropriate mitigation measures. For almost all construction activities, the application of effective mitigation should prevent any significant effects occurring to sensitive receptors and therefore the residual effects will normally be negligible.

Operational Phase

8.37 The significance of the predicted impacts has been determined following the advice provided EPUK & IAQM Guidance. The guidance recommends that the impact at individual receptors is described by expressing the magnitude of incremental change in pollution

concentrations as a proportion of the relevant assessment level and examining this change in the context of the new total concentration and its relationship with the assessment criterion as summarised in Table 8.7.

Table 8.7: Impact Descriptors for Individual Receptors

Long Term Average Concentration at Receptor in Assessment Year	% Change in concentration relative to AQAL (a)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight adverse	Moderate adverse
76-94% of AQAL	Negligible	Slight adverse	Moderate adverse	Moderate adverse
95-102% of AQAL	Slight adverse	Moderate adverse	Moderate adverse	Substantial adverse
103-109% of AQAL	Moderate adverse	Moderate adverse	Substantial adverse	Substantial adverse
110% or more of AQAL	Moderate adverse	Substantial adverse	Substantial adverse	Substantial adverse
(a) a change in concentration of less than 0.5% of the AQAL is considered negligible, however changes between 0.5% and 1% are rounded up to 1%.				

8.38 The EPUK & IAQM guidance notes that the criteria in Table 8.7 should be used to describe impacts at individual receptors and should be considered as a starting point to make a judgement on significance of effects, as other influences may need to be accounted for. The EPUK & IAQM guidance states that the assessment of overall significance should be based on professional judgement, taking into account several factors, including:

- The existing and future air quality in the absence of the development;
- The extent of current and future population exposure to the impacts; and
- The influence and validity of any assumptions adopted when undertaking the prediction of impacts.



Sensitive Receptors

8.39 LAQM.TG(22) describes in detail typical locations where consideration should be given to pollutants defined in the Regulations. Generally, the guidance suggests that all locations *‘where members of the public are regularly present’* should be considered. At such locations, members of the public will be exposed to pollution over the time that they are present, and the most suitable averaging period of the pollutant needs to be used for assessment purposes.

8.40 For instance, on a footpath, where exposure will be transient (for the duration of passage along that path) comparison with short-term standard (i.e. 15-minute mean or 1-hour mean) may be relevant. In a school, or adjacent to a private dwelling, however; where exposure may be for longer periods, comparison with long-term (such as 24-hour mean or annual mean) standards may be most appropriate. In general terms, concentrations associated with long-term standards are lower than short-term standards owing to the chronic health effects associated with exposure to low level pollution for longer periods of time.

8.41 To assess the impact of emissions arising from the traffic generated by the Proposed Development concentrations have been predicted at 11 existing sensitive receptors within the vicinity of the Application Site including nearby residential properties. There are no sensitive ecological habitats within the vicinity of the Proposed Development or the roads likely to be affected by the Proposed Development. Details of these sensitive receptors are presented in Table 8.8 and the locations are illustrated in Figure 8.1.

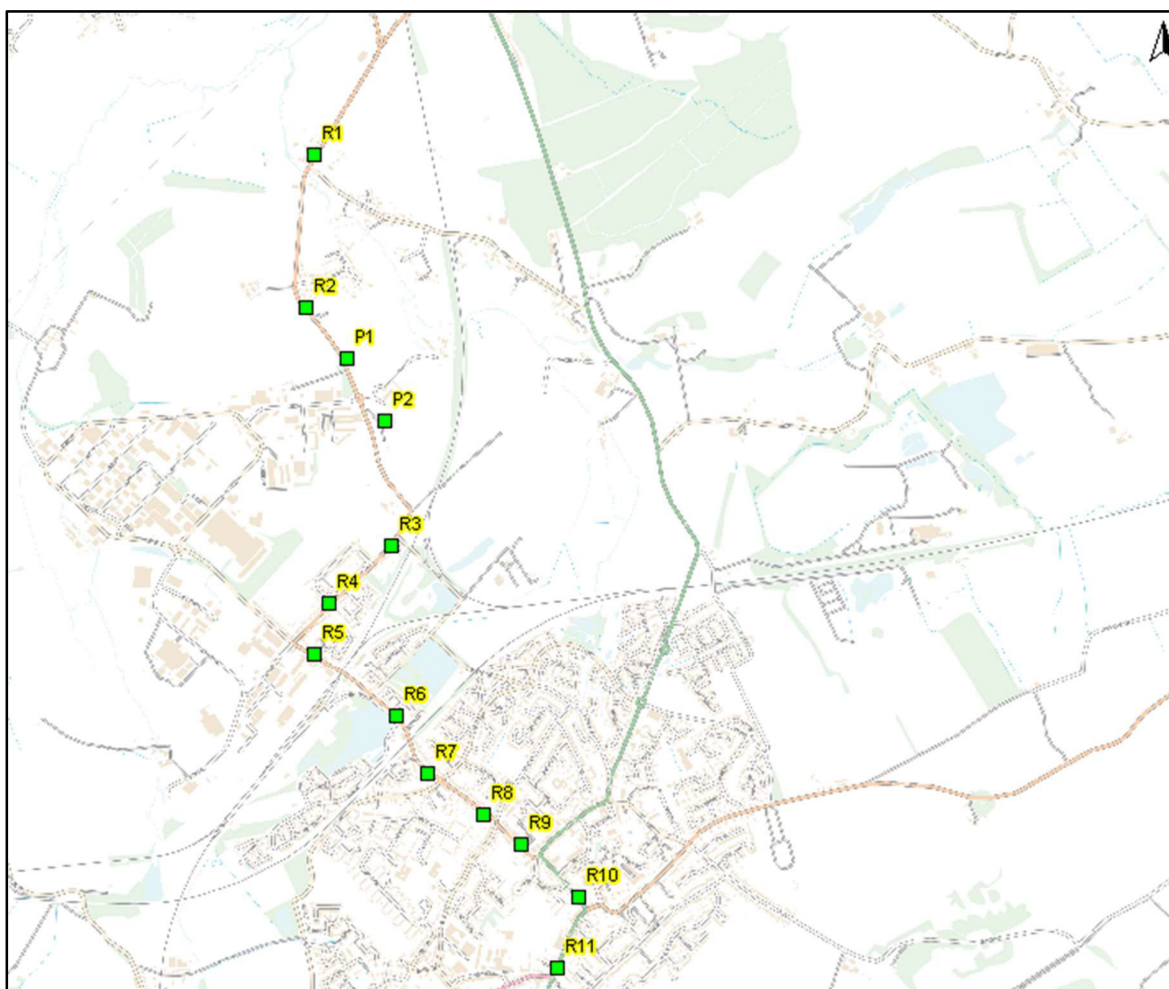
8.42 The modelling assessment also predicted concentrations at two locations representing locations within the Application Site itself to assess the suitability of the Application Site for the proposed end use.

Table 8.8: Location of Sensitive Receptors

ID	Receptor	Type	Easting	Northing
R1	Hawkeridge Road	Residential	386158	154204
R2	Hawkeridge Road	Residential	386127	153579
R3	2 The Ham	Residential	386473	152604
R4	The Ham	Residential	386218	152371
R5	Roman Place	Residential	386159	152161
R6	Station Road	Residential	386495	151904
R7	Station Road	Residential	386620	151668

ID	Receptor	Type	Easting	Northing
R8	Station Road	Residential	386849	151501
R9	Westbury Court Care Home	Residential	387005	151380
R10	Haynes Road	Residential	387240	151163
R11	Warminster Road	Residential	387156	150874
P1	Façade of the Proposed Development	Proposed	386290	153372
P2	Façade of the Proposed Development	Proposed	386445	153115

Figure 8.1: Location of Receptors Considered within ADMS Model



LEGISLATION, PLANNING POLICY AND GUIDANCE

The European Directive on Ambient Air and Cleaner Air for Europe

8.43 European Directive 2008/50/EC (Ref. 8.4) of the European Parliament and of the Council of 21st May 2008, sets legally-binding Europe-wide limit values for the protection of public health and sensitive habitats. The Directive streamlines the European Union's air quality legislation by replacing four of the five existing Air Quality Directives within a single, integrated instrument.

8.44 The pollutants included are sulphur dioxide (SO₂), NO₂, PM₁₀, PM_{2.5}, lead (Pb), carbon monoxide (CO), benzene (C₆H₆), ozone (O₃), polycyclic aromatic hydrocarbons (PAHs), cadmium (Cd), arsenic (As), nickel (Ni) and mercury (Hg).

Air Quality Strategy for England, Scotland, Wales & Northern Ireland

8.45 The Government's policy on air quality within the UK is set out in the Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland (AQS) published in July 2007 (Ref. 8.5), pursuant to the requirements of Part IV of the Environment Act 1995 and subsequent amendments in Schedule 11 of the Environment Act 2021. The AQS sets out a framework for reducing hazards to health from air pollution and ensuring that international commitments are met in the UK. The AQS is designed to be an evolving process that is monitored and regularly reviewed.

8.46 The AQS sets standards and objectives for ten main air pollutants to protect health, vegetation and ecosystems. These are C₆H₆, 1,3-butadiene (C₄H₆), CO, Pb, NO₂, PM₁₀, PM_{2.5}, SO₂, O₃ and PAHs.

8.47 The air quality standards are long-term benchmarks for ambient pollutant concentrations which represent negligible or zero risk to health, based on medical and scientific evidence reviewed by the Expert Panel on Air Quality Standards (EPAQS) and the World Health Organisation (WHO). These are general concentration limits, above which sensitive members of the public (e.g. children, the elderly and the unwell) might experience adverse health effects.

8.48 The air quality objectives are medium-term policy-based targets set by the Government which take into account economic efficiency, practicability, technical feasibility and timescale. Some objectives are equal to the EPAQS recommended standards or WHO guideline limits,



whereas others involve a margin of tolerance, i.e. a limited number of permitted exceedances of the standard over a given period.

8.49 For some pollutants, there is both a long-term (annual mean) standard and a short-term standard. In the case of NO₂, the short-term standard is for a 1-hour averaging period, whereas for PM₁₀ it is for a 24-hour averaging period. These periods reflect the varying impacts on health of differing exposures to pollutants (e.g. temporary exposure on the pavement adjacent to a busy road, compared with the exposure of residential properties adjacent to a road).

8.50 The AQS objective levels relevant to this assessment are presented in **Appendix 8.4**.

Air Quality (England) Regulations

8.51 Many of the objectives in the AQS were made statutory in England through the *Air Quality (England) Regulations 2000* (Ref 8.6) and the *Air Quality (England) (Amendment) Regulations 2002* (the Regulations) (Ref 8.7) for the purpose of Local Air Quality Management (LAQM).

8.52 The Air Quality Standards Regulations 2010 (Ref 8.8) came into force on the 10th June 2010 and have adopted into UK law the limit values required by EU Directive 2008/50/EC. These regulations prescribe the 'relevant period' (referred to in Part IV of the Environment Act 1995) that local authorities must consider in their review of the future quality of air within their area. The regulations also set out the air quality objectives to be achieved by the end of the 'relevant period'. The Air Quality Standards (Amendment) Regulations 2016 (Ref 8.9) came into force on 31st December 2016, they amended the Air Quality Standards 2010 to implement the changes made by EU Directive 2015/1480. The Air Quality Standards Regulations were further amended by the Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 (Ref 8.10) in January 2020 with regards to PM_{2.5}.

8.53 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (Ref 8.11) came into force on the 31st January 2023 and adopted a Target Value for PM_{2.5} into UK law.

8.54 Ozone is not included in the Regulations as, due to its transboundary nature, mitigation measures must be implemented at a national level rather than at a local authority level.

Local Air Quality Management (LAQM)

8.55 Part IV of the Environment Act 1995 and subsequent amendments in Schedule 11 of the Environment Act 2021 also requires local authorities to periodically Review and Assess the quality of air within their administrative area. The Reviews have to consider the present and future air quality and whether any air quality objectives prescribed in Regulations are being achieved or are likely to be achieved in the future.

8.56 Where any of the prescribed air quality objectives are not likely to be achieved, the authority concerned must designate that part an Air Quality Management Area (AQMA).

8.57 For each AQMA, the local authority has a duty to draw up an Air Quality Action Plan (AQAP) setting out the measures the authority intends to introduce to deliver improvements in local air quality in pursuit of the air quality objectives. Local authorities are not statutorily obliged to meet the objectives, but they must show that they are working towards them.

8.58 The Department of Environment, Food and Rural Affairs (Defra) has published technical guidance for use by local authorities in their Review and Assessment work (Ref. 8.12). This guidance, referred to in this chapter as LAQM.TG(22), has been used where appropriate in the assessment.

National Planning Policy Framework

8.59 The National Planning Policy Framework (NPPF) (Ref. 8.13) sets out the Government's planning policies for England and how these are expected to be applied. At the heart of the NPPF is a presumption in favour of sustainable development. It requires Local Plans to be consistent with the principles and policies set out in the NPPF with the objective of contributing to the achievement of sustainable development.

8.60 The NPPF states that the planning system has three overarching objectives in achieving sustainable development including a requirement to *'protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.'*

8.61 Under Section 15: Conserving and Enhancing the Natural Environment, the NPPF (paragraph 187) requires that *'planning policies and decisions should contribute to and enhance*



the natural local environment by ...preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible help to improve local environmental conditions such as air and water quality'

8.62 In dealing specifically with air quality the NPPF (paragraph 199) 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 and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan*'.

8.63 Paragraph 201 states that '*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.*'

Planning Practice Guidance (Ref. 8.14)

8.64 National Planning Practice Guidance (PPG) has been developed to support the NPPF. The guidance provides a concise outline as to how air quality should be considered in order to comply with the NPPF and states that air quality is considered relevant to a planning application when:

'a development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies or action plans and / or breach legal obligations (including those relating for the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.'

8.65 The PPG further states:



‘Considerations that may be relevant to determining a planning application include whether the development would:

- Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield. This could be through the provision of electric vehicle charging infrastructure; altering the level of traffic congestion; significantly changing traffic volumes, vehicle speeds 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; could add to turnover in a large car park; to involve 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; biomass boilers or biomass-fuelled Combined Heat and Power plant; centralised boilers or plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area’; or extraction systems (including chimneys) which require approval or permits under pollution control legislation;*
- ‘Expose people to harmful concentrations of air pollutants, including dust. This could be by building new homes, schools, workplaces or other development in places with poor air quality’;*
- ‘Give rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations;*
- Have a potential adverse effect on biodiversity, especially where it would affect sites designated for their biodiversity value.’*

Wiltshire Core Strategy

8.66 The Wiltshire Core Strategy was adopted in January 2015 and is the key planning policy document for the area. The following policy is relevant to air quality and the Proposed Development in this document:

8.67 Core Policy 55 Air Quality, which states

‘Development proposals, which by virtue of their scale, nature or location are likely to exacerbate existing areas of poor air quality, will need to demonstrate that measures can be taken to



effectively mitigate emission levels in order to protect public health, environmental quality and amenity. Mitigation measures should demonstrate how they will make a positive contribution to the aims of the Air Quality Strategy for Wiltshire and where relevant, the Wiltshire Air Quality Action Plan. Mitigation may include:

- i. landscaping, bunding or separation to increase distance from highways and junctions*
- ii. possible traffic management or highway improvements to be agreed with the local authority*
- iii. abatement technology and incorporating site layout/separation and other conditions in site planning*
- iv. traffic routing, site management, site layout and phasing*
- v. where appropriate, contributions will be sought toward the mitigation of the impact a development may have on levels of air pollutants.'*

Wiltshire Council Air Quality Supplementary Planning Guidance

8.68 The Wiltshire Council Air Quality Supplementary Planning Document (SPD) was published in July 2025 seeks to assist developers in improving air quality and lowering transport emissions in line with national planning and the aims and objectives of Wiltshire's Air Quality Action Plan and Air Quality Strategy. This SPD outlines the importance of the following:

- The base design of the development;
- How to classify a development site and what type of air quality assessment is appropriate;
- Emissions calculations; and
- Appropriate mitigation/design including our policy on financial 'off setting' contributions.

Control of Dust and Particulates associated with Construction

8.69 Section 79 of the *Environmental Protection Act (1990)* provides the following definitions of statutory nuisance relevant to dust and particles:

- '*Any dust or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance*', and
- '*any accumulation or deposit which is prejudicial to health or a nuisance*'.



8.70 Following this, Section 80 states that where a statutory nuisance is shown to exist, the local authority must serve an abatement notice. Failure to comply with an abatement notice is an offence and if necessary, the local authority may abate the nuisance and recover expenses.

8.71 In the context of the Proposed Development, the main potential for nuisance of this nature will arise during the construction phase – potential sources being the clearance, earthworks, construction and landscaping processes.

8.72 There are no statutory limit values for dust deposition above which 'nuisance' is deemed to exist – 'nuisance' is a subjective concept and its perception is highly dependent upon the existing conditions and the change which has occurred. However, research has been undertaken by a number of parties to determine community responses to such impacts and correlate these to dust deposition rates.

EPUK & IAQM Land Use Planning and Development Control

8.73 Environmental Protection UK (EPUK) & Institute of Air Quality Management (IAQM) published the Land Use Planning and Development Control Air Quality guidance in January 2017 to provide guidance on the assessment of air quality in relation to planning proposals and ensure that air quality is adequately considered within the planning control process.

8.74 The main focus of the guidance is to ensure all developments apply good practice principles to ensure emissions and exposure are kept to a minimum. It also sets out criteria for identifying when a more detailed assessment of operational impacts is required, guidance on undertaking detailed assessments and criteria for assigning the significance of any identified impacts.

8.75 This guidance has been used within this assessment.

IAQM Assessment of Dust from Demolition and Construction

8.76 The IAQM published guidance in 2024 on the assessment of emissions from demolition and construction activities. The guidance sets out an approach to identifying the risk of impacts occurring at nearby sensitive receptors from dust generated during the construction process and sets out recommended mitigation measures based on the identified risk. This guidance has been used within this assessment.

BASELINE CONDITIONS

Wiltshire Council Review and Assessment of Air Quality

8.77 WC have carried out detailed assessments of air quality and as a result have declared eight AQMAs due to elevated concentrations of NO₂ and PM₁₀. The Application Site is not located within or near an AQMA. The closest AQMA to the Application Site is the Westbury AQMA, which is located 2.0km to southeast of the Application Site.

Automatic Local Monitoring Data

8.78 WC operates three automatic monitoring sites. The closest site is Masons Lane, Bradford On Avon, a roadside site located approximately 8.5km to the northwest of the Application Site. Bias adjusted data obtained from this monitoring station is presented in Tables 8.9 and 8.10.

Table 8.9: NO₂ Concentrations recorded at the Continuous Automatic Monitor

Monitoring Site	Statistic	2020	2021	2022	2023	2024
Masons Lane, Bradford On Avon	Annual Mean (µg/m ³)	25	26	28	30	31.1
	Number of 1-hour means > 200 µg/m ³	0	0	3	0	0
Data obtained from WC Air Quality Annual Status Report 2025						

8.79 Exceedances of the AQS objective for annual mean NO₂ concentrations have not been experienced at the Masons Lane monitor throughout the five-year period presented, despite being located at a roadside location within an AQMA.

8.80 No exceedances of the hourly objective have been recorded during the five years of the monitoring presented, therefore the objective was met in all five monitoring years.

8.81 Based on the data recorded at this monitoring site, NO₂ concentrations are expected to meet the annual mean and hourly mean objectives at the Application Site.



Table 8.10: PM₁₀ Concentrations recorded at the Continuous Automatic Monitor

Monitoring Site	Statistic	2020	2021	2022	2023	2024
Masons Lane, Bradford On Avon	Annual Mean (µg/m ³)	18	17	17	23	24.1
	Number of 24-hour means > 50 µg/m ³	0	0	2	3	1
Data obtained from WC Air Quality Annual Status Report 2025						

8.82 Annual mean PM₁₀ concentrations recorded have been consistently below the 40 µg/m³ objective between 2020 and 2024 at the Masons Lane site.

8.83 Exceedances of the 24-hour objective have been recorded at the monitoring station during the five years of the monitoring presented, however the objective allows for 35 exceedances of the 50 µg/m³ limit in any given year therefore the objective was met in all five monitoring years.

8.84 Based on the data recorded at this monitoring site, PM₁₀ concentrations are expected to meet the annual mean and 24-hour mean objectives at the Application Site.

Non-Automatic Monitoring

8.85 WC monitors NO₂ concentrations at a number of sites across Wiltshire using diffusion tubes. No monitoring is undertaken in the immediate vicinity of the Application Site. Ratified data obtained from the closest monitoring sites to the Application Site are presented in Table 8.11 below.

Table 8.11: NO₂ Concentrations recorded at the nearest Diffusion Tube Monitors (µg/m³)

Monitoring Site	Type	Distance to Kerb (m)	2020	2021	2022	2023	2024
21 – 41 Haynes Rd, Westbury	Roadside	1.3	29.9	33.3	30.0	25.9	23.5
22 – Warminster Rd	Roadside	1.7	36.3	40.4	36.0	31.6	29.9
23 – 23 West End, Westbury	Roadside	1.5	25.1	26.1	24.9	21.4	19.7
24 – Leighton Pk (bg), Westbury	Suburban	2.5	8.3	8.3	8.9	8.5	6.5
Data obtained from WC Air Quality Annual Status Report 2025							

8.86 The AQS objective for annual mean NO₂ concentrations has generally been met over the five-year period at all of the above monitoring sites. One exceedance was recorded in 2022 at the diffusion tube site located on Warminster Road.

8.87 Diffusion tubes cannot monitor short-term NO₂ concentrations, however, as previously discussed, research has concluded (Ref. 8.17) that exceedances of the 1-hour mean objective are generally unlikely to occur where annual mean concentrations do not exceed 60 µg/m³. Annual mean NO₂ concentrations were below 60 µg/m³ at all monitoring sites between 2020 and 2024 therefore it is expected that the 1-hour objective is being met at these locations.

Defra Background Maps

8.88 Additional information on background concentrations in the vicinity of the Application Site has been obtained from the Defra background pollutant maps. The Defra background maps provide estimated concentrations for the years 2021 to 2040. For the purposes of this assessment 2024 background concentrations have been obtained.

8.89 The pollutant concentrations from each of the grid squares representing the assessment area have been extracted from the maps which include the Application Site and road links included in the modelling assessment. The background concentration for each pollutant used in the assessment is presented in Table 8.12 below.

Table 8.12: Estimated Annual Mean Background Concentrations from Defra Maps (µg/m³)

Grid Square	Receptor	NO ₂	PM ₁₀	PM _{2.5}
386500, 154500	R1	5.9	11.4	6.7
386500, 153500	R2, P1, P2	6.0	11.4	6.8
386500, 152500	R3, R4, R5	6.1	11.1	6.7
386500, 151500	R6, R7, R8	6.0	11.2	6.9
387500, 151500	R9, R10, 21	6.7	11.7	7.2
387500, 150500	R11, 22	5.6	11.3	6.7



IDENTIFICATION AND EVALUATION OF KEY EFFECTS

Construction Phase Effects

Area Sensitivity

8.90 There are no buildings onsite to be demolished, therefore demolition impacts have been scoped out of this assessment.

8.91 The assessment of dust impacts is dependent on the proximity of the most sensitive receptors to the Application Site boundary. A summary of the receptor and area sensitivity to health and dust soiling impacts for each phase is presented in Table 8.13 below.

Table 8.13: Sensitivity of Receptors and the Local Area to Dust Impacts

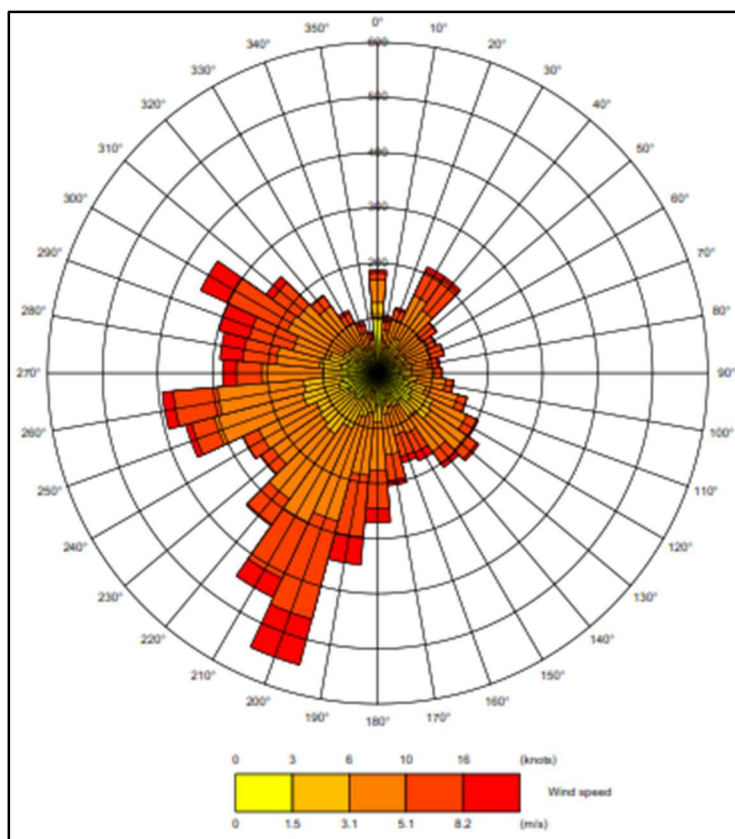
Receptor	Distance from Site Boundary (m)	Approx. Number of Receptors	Sensitivity to Health Impacts (a)		Sensitivity to Dust Soiling Impacts	
			Receptor	Area	Receptor	Area
Existing Residential Properties	<20 m	1-10	High	Low	High	Medium
	<50 m	1-10	High	Low	High	Low
Places of Work	<20 m	>1	Medium	Low	Medium	Medium
Overall Sensitivity of the Area			Low		Medium	
(a) Estimated background PM ₁₀ concentration is 11.4 µg/m ³ .						

8.92 It is understood that construction traffic will travel along Hawkeridge Road and Mill Lane to gain access to the Application Site. Within the IAQM guidance it is indicated that the impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50m from the edge of the road. There are more than ten sensitive receptors located within 20m of these roads. The sensitivity of the surrounding area to dust soiling and health effects due to PM₁₀ concentrations as a result of trackout are therefore high for nuisance dust and low for human health.

8.93 The precise behaviour of the dust, its residence time in the atmosphere, and the distance it may travel before being deposited will depend upon a number of factors. These include wind direction and strength, local topography and the presence of intervening structures (buildings, etc.) that may intercept dust before it reaches sensitive locations. Furthermore, dust would be naturally suppressed by rainfall.

8.94 A wind rose from Yeovilton is provided in Figure 8.2, which shows that the prevailing wind is from the southwest, therefore receptors to the northeast of the Application Site are the most likely to experience dust impacts from the Proposed Development. The area to the northeast of the Application Site is comprised of residential dwellings along Mill Lane, woodland and agricultural fields. The highest risk of impacts is expected to occur in this location.

Figure 8.2: Wind Rose for Yeovilton Meteorological Station (2024)



Dust Emission Magnitude

8.95 Earthworks will primarily involve excavating material, haulage, tipping and stockpiling. This may also involve levelling and landscaping. The development area of the Application Site is greater than 110,000m². Therefore, the dust emissions magnitude is considered to be large.

8.96 Dust emissions during construction will depend on the scale of the works, method of construction, construction materials and duration of build. The volume of the proposed buildings is expected to be greater than 75,000m³, therefore the dust emission magnitude is considered to be large.



8.97 Factors influencing the degree of trackout and associated magnitude of effect include vehicle size, vehicle speed, vehicle numbers, geology and duration. Based on the size of the Application Site, dust emission magnitude due to trackout is considered to be large.

Dust Risk Effects

8.98 A summary of the potential risk of dust impacts is presented in Table 8.14.

Table 8.14: Risk of Dust Impacts Prior to Mitigation

Source	Impact Magnitude	Human Health Risk	Dust Soiling Risk
Earthworks	Large	Low	Medium
Construction	Large	Low	Medium
Trackout	Large	Low	High

Operational Phase Effects

Predicted NO₂ Concentrations

8.99 Annual mean NO₂ concentrations, predicted at the identified receptor locations are presented in Table 8.15 below.

Table 8.15: Predicted Annual Mean NO₂ Concentrations (µg/m³)

Receptor	Completed Development at Year 2031		
	Base + Committed	With Development	Change as a result of Development (as % of the AQAL)
R1	8.5	8.9	1.0
R2	9.2	9.7	1.3
R3	8.5	9.1	1.6
R4	7.7	8.1	1.1
R5	8.8	9.3	1.2
R6	9.6	10.2	1.5
R7	7.8	8.1	0.8



Receptor	Completed Development at Year 2031		
	Base + Committed	With Development	Change as a result of Development (as % of the AQAL)
R8	7.5	7.8	0.6
R9	9.8	10.3	1.3
R10	12.7	13.0	0.9
R11	12.3	12.6	0.6
P1	-	8.8	-
P2	-	6.5	-

8.100 The results of the assessment indicate that there are no exceedances of the annual mean AQS objective level for NO₂ at any of the existing sensitive receptors either with or without the Proposed Development.

8.101 The greatest increase in annual mean NO₂ concentrations as a result of the Proposed Development is a concentration of 0.64µg/m³ (1.6% of the AQS objective level). This is predicted at receptor R3. At this and all the other sensitive receptors included in the assessment, the impact of the scheme is classified as negligible in accordance with the EPUK & IAQM significance criteria.

8.102 As discussed previously LAQM.TG(22) does not provide a method for the conversion of annual mean NO₂ concentrations to 1-hour mean NO₂ concentrations. However, research (Ref. 8.18) has concluded that exceedances of the 1-hour mean objective are generally unlikely to occur where annual mean concentrations do not exceed 60 µg/m³. The predicted annual mean NO₂ concentrations are all well below 60µg/m³ at all of the existing sensitive receptors included in the assessment both with and without the Proposed Development. Therefore, it is considered unlikely that the AQS objective for hourly mean NO₂ concentrations will be exceeded and the impact on hourly mean NO₂ concentrations is considered to be negligible.

8.103 Within the Application Site itself, the predicted concentrations are well below (less than 75%) the AQS objective level for annual mean NO₂ concentrations. The impact of the Proposed



Development in terms of exposure of the future residents for both annual and hourly NO₂ is therefore considered to be negligible in accordance with the IAQM criteria.

Predicted PM₁₀ Concentrations

8.104 Predicted annual mean PM₁₀ concentrations at the selected receptor locations are presented below in Table 8.16.

Table 8.16: Predicted Annual Mean PM₁₀ Concentrations (µg/m³)

Receptor	Completed Development at Year 2031		
	Base + Committed	With Development	Change as a result of Development (as % of the AQAL)
R1	12.8	13.1	0.6
R2	13.1	13.4	0.7
R3	12.8	13.2	1.2
R4	12.2	12.5	0.8
R5	13.0	13.4	0.8
R6	13.5	13.9	1.0
R7	12.4	12.6	0.5
R8	12.2	12.4	0.4
R9	13.9	14.2	0.9
R10	15.4	15.6	0.6
R11	15.7	15.8	0.4
P1	-	12.9	-
P2	-	11.7	-

8.105 The results of the assessment indicate that there are no exceedances of the annual mean AQS objective level for PM₁₀ at any of the existing sensitive receptors either with or without the Proposed Development.

8.106 The greatest increase in annual mean PM₁₀ concentrations as a result of the Proposed Development is a concentration of 0.47µg/m³ (1.2% of the AQS objective level). This is



predicted at receptor R3. At this and all the other sensitive receptors included in the assessment, the impact of the scheme is classified as negligible in accordance with the EPUK & IAQM significance criteria.

8.107 LAQM.TG(22) provides a relationship between predicted annual mean concentrations and the likely number of exceedances of the short-term (24-hour mean) PM_{10} objective of $50 \mu g/m^3$ (N), where:

$$N = -18.5 + 0.00145 \times \text{annual mean}^3 + (206/\text{annual mean}).$$

8.108 The objective allows 35 exceedances per year, which is equivalent to an annual mean of $32 \mu g/m^3$.

8.109 Based on the above approach, the maximum number of days where PM_{10} concentrations are predicted to exceed $50 \mu g/m^3$ is less than 1 day at the selected receptors. The results predict a change of less than one day as a result of the operation of the Development. The impact on 24-hour PM_{10} concentrations is therefore also considered to be negligible.

8.110 Within the Application Site itself, the predicted concentrations are well below (less than 75%) the AQS objective level for annual mean PM_{10} concentrations. The maximum number of days where the PM_{10} concentrations are predicted to exceed $50 \mu g/m^3$ within the Proposed Development is less than 2 days. The impact of the Proposed Development in terms of exposure of the future residents for both annual and 24 hour PM_{10} is therefore considered to be negligible.

Predicted $PM_{2.5}$ Concentrations

8.111 Predicted annual mean $PM_{2.5}$ concentrations at the identified receptor locations are presented in Tables 8.17 below.

Table 8.17: Predicted Annual Mean PM_{2.5} Concentrations (µg/m³)

Receptor	Completed Development at Year 2031			
	Base + Committed	With Development	Change as a result of Development (as % of the AQAL)	Change as a result of the Development (as a % of the Interim Target)
R1	7.6	7.8	0.7	1.1
R2	7.9	8.1	0.8	1.4
R3	7.7	8.0	1.5	2.5
R4	7.4	7.5	1.0	1.6
R5	7.9	8.1	1.1	1.8
R6	8.4	8.7	1.3	2.1
R7	7.7	7.9	0.7	1.1
R8	7.6	7.7	0.6	0.9
R9	8.6	8.8	1.2	2.0
R10	9.6	9.7	0.7	1.2
R11	9.5	9.6	0.5	0.9
P1	-	7.8	-	
P2	-	7.0	-	

8.112 The results of the assessment indicate that there are no exceedances of the annual mean AQS objective level for PM_{2.5} at any of the existing sensitive receptors either with or without the Proposed Development.

8.113 The greatest increase in annual mean PM_{2.5} concentrations as a result of the Proposed Development is a concentration of 0.39µg/m³ (1.5% of the AQS objective level and 2.5% of the Interim Target Level). This is predicted at receptor R3. At this and all the other sensitive receptors included in the assessment, the impact of the scheme is classified as negligible in accordance with the EPUK & IAQM significance criteria.

8.114 Within the Application Site itself, the predicted concentrations are well below (less than 75%) the AQS objective level and Interim Target Level for annual mean PM_{2.5} concentrations. The impact of the Proposed Development in terms of exposure of the future residents for annual PM_{2.5} concentrations is therefore considered to be negligible.



Uncertainty

8.115 There are many components that contribute to the uncertainty of the predicted concentrations. The model used in this assessment uses traffic data that will have inherent uncertainties and the model is required to simplify real-world conditions into a series of algorithms.

8.116 Defra issued revised emission factors in May 2026 which better reflect the anticipated change in future year emissions. This assessment has used these emissions factors in conjunction with background concentrations obtained from background maps based on 2021 monitored concentrations to reduce the uncertainty in the prediction of future concentrations.

ASSESSMENT OF CUMULATIVE EFFECTS

8.117 Cumulative effects can potentially be experienced during both the construction and operational phases. During the construction phase, cumulative effects of dust and particulate matter generated from on-site activities may be experienced in locations in close proximity to two or more development sites and when the timing of the construction phases overlap. There may also be an effect due to the increased construction traffic on local roads if construction vehicles are to use the same routes to access the sites. During the operational phase, cumulative effects may be experienced due to the additional road vehicles generated by one or more schemes if the traffic is likely to affect the same local roads.

8.118 Details of the committed developments considered within this assessment are outlined in Chapter 3.

Construction Phase Effects

8.119 Guidance provided by the IAQM suggests that effects of dust and particulate matter generated from a construction site may be experienced up to 250m from the site. The Development Site 'Glenmore Farm' (Planning Ref. PL/2021/03749) and the 'Land at Shallow Waggon Lane' are located sufficiently close to the Application Site that there are areas that are within 250m of both the Application Site and these sites. However, due to the settlement fringe nature of the surrounding area, there are relatively few sensitive locations that would be affected by dust arising from both the construction activities at the Application Site and activities on the aforementioned sites should the construction phases overlap.



8.120 All construction sites would be the subject of stringent mitigation measures similar to those that would be implemented during construction of the Proposed Development. The cumulative impact of the Proposed Development and the committed developments is therefore considered to remain negligible following the implementation of the relevant site specific CEMPs.

Operational Phase Effects

8.121 The traffic flows used for the assessment were calculated to account for the additional traffic from general growth in the area and a number of committed developments. The assessment of the significance of the Proposed Development effects has therefore taken into account the cumulative effect of the Application Site and a likely amount of development in the area on predicted future pollutant concentrations.

Inter-Relationship Effects

8.122 There are inter-relationships with the transport chapter as identified through the use of traffic data within the assessment. No other inter-relationships with other topics are identified.

ENHANCEMENT, MITIGATION AND RESIDUAL EFFECTS

Mitigation

Construction Phase

8.123 The control of dust emissions from construction site activities relies upon management provision and mitigation techniques to reduce emissions of dust and limit dispersion. Where dust emission controls have been used effectively, large-scale operations have been successfully undertaken without impacts to nearby properties.

8.124 A high risk of dust soiling impacts and a low risk of human health (PM₁₀) effects is predicted at adjacent receptors during construction of the Proposed Development. Appropriate mitigation measures for the Application Site have been identified following the IAQM guidance and based on the risk effects presented in Table 8.12. It is recommended that the 'highly recommended' measures set out within the IAQM guidance and reproduced below are incorporated into a Dust Management Plan (DMP) and approved by WC prior to commencement of any work on site, in line with the Wiltshire Council Air Quality SPD.



8.125 “Highly Recommended” Measures

- develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
- display the name and contact details of the person accountable for air quality and dust issues on the site boundary (i.e. the environment manager/engineer or site manager);
- display the head or regional office contact information;
- develop and implement a 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;
- record all dust and air quality complaints, identify cause, 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 off- site and the action taken to resolve the situation in the log book;
- hold regular liaison meetings with other high risk construction sites within 250 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes;
- undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspections results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided in necessary;
- carry out regular site inspections to monitor compliance with the DMP, record inspection results and make inspection log available to SDC when asked;
- 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 frequency of site inspection 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 periods of dry or windy conditions;
 - 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.
 - 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;
 - fully enclose site or specific operations where there is a high potential for dust production and the activities are being undertaken 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 being re-used on site, cover as detailed below;
 - cover, seed or fence stockpiles to prevent wind whipping;
 - 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;
 - impose and signpost a maximum-speed limit of 15mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate);
 - produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials;
 - implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking and car-sharing);
 - 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 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;
 - re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
 - use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable;
 - only remove the cover in small areas during work and not all at once;
 - avoid scabbling (roughening of concrete surfaces) if possible;
 - 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;
 - ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery;
 - use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site;
 - avoid dry sweeping of large areas;
 - ensure vehicles entering and leaving the site are covered to prevent the escape of materials during transport;
 - inspect on-site haul routes for integrity and instigate necessary repairs to the surfaces as soon as reasonably practicable;
 - record all inspections of haul routes and any subsequent action in a site log book;
 - install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned;
 - implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);
 - ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit; and
 - access gates to be located at least 10 m from receptors where possible.



8.126 In addition to the 'recommended' measures, the IAQM guidance also sets 'desirable' measures which should also be considered for inclusion in the DMP as follows:

- For smaller supplied of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

Operational Phase

8.127 The detailed dispersion modelling indicates that the impact of the operation of the Proposed Development on local pollutant concentrations is negligible and that the concentrations of relevant pollutants (NO₂, PM₁₀ and PM_{2.5}) at nearby sensitive receptors and at the Application Site will meet the relevant air quality objectives. Nonetheless, in accordance with the advice provided in Wiltshire's Air Quality SPD, mitigation measures will be implemented to reduce operational emissions.

Mitigation Statement

8.128 The following mitigation measures are proposed:

- All dwellings and retail units will be provided with access to EV charging points;
- Travel Plan seeking to encourage and enable use of the more sustainable modes of travel, seeking to reduce the use of private cars which will reduce the impact of the Proposed Development on the local air quality.

Residual Effects

Construction Phase

8.129 Following implementation of the measures recommended for inclusion within the DMP the impact of emissions during construction of the Proposed Development would be *negligible*.

Operational Phase

8.130 The effect of traffic associated with the Proposed Development on concentrations of NO₂, PM₁₀ and PM_{2.5} is predicted to be negligible in accordance with the EPUK & IAQM guidance. No exceedances of the relevant air quality standards are predicted. The impact will be further reduced by the mitigation measures proposed. Residual effects are therefore also considered to be negligible.



SUMMARY

8.131 An air quality impact assessment has been undertaken to assess both construction and operational effects associated with the Proposed Development.

8.132 An assessment of the potential effects during the construction phase identified that releases of dust and particulate matter are likely to occur during site activities. Through good site practice and the implementation of suitable mitigation measures, the effect of dust and particulate matter releases may be effectively mitigated and the resultant effects are considered to be negligible.

8.133 Dispersion modelling has been carried out to assess the impact of the operational development on local air quality. The results of the modelling indicate that concentrations of relevant pollutants (NO_2 , PM_{10} and $\text{PM}_{2.5}$) will meet the relevant AQS objective levels at nearby sensitive receptors and within the Application Site itself. The significance of the effects of the emissions arising from the traffic associated with the operation of the Proposed Development is considered to be negligible in accordance with the EPUK & IAQM significance criteria. Mitigation measures have been proposed in line with Wiltshire Council's Air Quality Supplementary Planning Document.

8.134 It is therefore considered that air quality does not pose any constraints to the development of the Application Site as proposed.



Table 8.18: Air Quality Summary Table

Potential Effect	Nature of Effect (Permanent or Temporary)	Significance (using nationally accepted EPUK & IAQM criteria)	Mitigation/ Enhancement Measures	Residual Effects (using nationally accepted EPUK & IAQM criteria)
Dust and particulate matter generated during the construction phase	Temporary	-	The adoption of <i>best practice and measures outlined in the IAQM guidance</i>	Negligible
Effects on Local Air Quality from emissions from road traffic generated by the operation of the Proposed Development	Permanent	Negligible	Encourage sustainable modes of transport via Travel Plan EV charging	Negligible

REFERENCES

- Ref 8.1:** Institute of Air Quality Management (Jan 2024); 'Guidance on the assessment of dust from demolition and construction version 2.2'.
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- Ref 8.3:** <http://uk-air.defra.gov.uk>
- Ref 8.4:** Air Quality Directive 2008/50/EC
- Ref 8.5:** The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)
- Ref 8.6:** The Air Quality (England) Regulations 2000 - Statutory Instrument 2000 No.928
- Ref 8.7:** The Air Quality (England) (Amendment) Regulations 2002 - Statutory Instrument 2002 No.3043
- Ref 8.8:** The Air Quality Standards Regulations 2010 – Statutory Instrument 2010 No. 1001
- Ref 8.9:** The Air Quality Standards (Amendment) Regulations 2016 – Statutory Instrument 2016 No. 1184
- Ref 8.10:** The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 – Statutory Instrument 2020 No 1313
- Ref 8.11:** The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 – Statutory Instrument 2023 No 96
- Ref 8.12:** Department for Environment, Food and Rural Affairs (Defra), (2022): Part IV The Environment Act 2021 Local Air Quality Management Review and Assessment Technical Guidance LAQM.TG(22).
- Ref 8.13:** Ministry of Housing, Communities & Local Government (December 2024, amended February 2025). National Planning Policy Framework.
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