HOYLAND WEST- PLOT 2

AIR QUALITY ASSESSMENT

VC-103566-AQ-RP-0001
R02

NOVEMBER 2021



VANGUARDIA

DOCUMENT CONTROL			
DOCUMENT TITLE	AIR QUALITY ASSESSMENT	**REVISION**	R02
DOCUMENT NUMBER	VC-103566-AQ-RP-0001	**ISSUE DATE**	NOVEMBER 2021
PROJECT NUMBER	103566	**AUTHOR**	SG
STATUS	ISSUE	**CHECKED**	CW
ISSUED TO	CLIENT	**PASSED**	SG

REVISION HISTORY		
REVISION	**NOTES**	**DATE ISSUED**
R01	UPDATED TRAFFIC DATA	
R02	CLIENT COMMENTS	

This report was prepared on behalf of the Client ("Issued to") and takes into account any particular requirements and instructions from the Client. Its use is governed by the Contract between the Client and Vanguardia LTD. Where reproduced, the document shall be reproduced in full. Any other use shall be subject to the prior written permission of Vanguardia LTD. Unless indicated otherwise, all material in this document is the property of Vanguardia LTD.

VANGUARDIA LIMITED

HEAD OFFICE
21 Station Road West, Oxted
Surrey RH8 9EE

Tel +44 (0) 1883 718690
Fax +44 (0) 8700 516196

office@vanguardia.co.uk
vanguardia.co.uk

CONTENTS

1. INTRODUCTION 4
2. LEGISLATION, POLICY & GUIDANCE CONTEXT 5
3. ASSESSMENT METHODOLOGY 15
4. CONSTRUCTION & OPERATIONAL PHASE IMPACT ASSESSMENT 27
5. MITIGATION 33
6. CONCLUSIONS 34

1. INTRODUCTION

1.1. Vanguardia has been commissioned by Newlands Developments to undertake an Air Quality Assessment (AQA) to consider the potential impacts associated with the proposed development at Hoyland, Barnsley.

1.2. The proposals to which air quality assessment relates to is for:

"full planning application for the development of 2 no. storage and distribution units (Class B8) with ancillary offices including creation of access roads, parking, associated landscaping and infrastructure."

1.3. This AQA sets out the potential dust and traffic impacts associated with the proposed scheme in line with the EPUK & IAQM, (2017) Land-Use Planning and Development Control: Planning for Air Quality[1], and the Barnsley Metropolitan Borough Council (BMBC) (2020) *Air Quality and Emissions Good Practice Planning Guidance*[2] documents.

1.4. An air quality damage calculation in line with these guidance documents was carried out for the hybrid planning permission (Ref: 2020/0647), which granted outline permission to the application site. As the scheme has changed for this Plot, the calculation that has been carried out for this assessment updates the previous calculation.

1.5. This AQA should be read in conjunction with the original AQA[3] (as set out in Appendix A) and Addendum Air Quality Assessment[4] (as set out in Appendix B) for the hybrid planning permission (Ref: 2020/0647).

[1] Environmental Protection UK & Institute of Air Quality Management (EPUK & IAQM) (2017) Land-Use Planning & Development Control: Planning for Air Quality, EPUK & IAQM, London
[2] Barnsley Metropolitan Borough Council (BMBC) (2020) Air Quality and Emissions Good Practice Planning Guidance, BMBC, Barnsley
[3] Hoyland West– Air Quality Assessment dated June 2020 - VC-103210-AQ-RP-0001.
[4] Hoyland West Addendum– Air Quality Assessment dated September 2020 - VC-103210-AQ-RP-0003.

2. LEGISLATION, POLICY & GUIDANCE CONTEXT

EUROPEAN LEGISLATION

2.1. The following text is taken from the legislation.gov.uk website[5] and sets out how EU Legislation will be retained in the United Kingdom after the Brexit transition:

"The UK is no longer a member of the European Union. EU legislation as it applied to the UK on 31 December 2020 is now a part of UK domestic legislation, under the control of the UK's Parliaments and Assemblies, and is published on legislation.gov.uk.

EU legislation which applied directly or indirectly to the UK before 11.00 p.m. on 31 December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'. This is set out in sections 2 and 3 of the European Union (Withdrawal) Act 2018 (c. 16)."

2.2. Air pollutants at high concentrations can give rise to adverse effects upon the health of both humans and ecosystems. The European Union (EU) legislation on air quality forms the basis for the national UK legislation and policy.

2.3. The EU Framework Directive 2008/50/EC came into force in May 2008 and sets out legally binding limits for concentrations of the major air pollutants that can impact on public health. This Directive came into force in England in June 2010. Amendments to this Directive was made following amendments to the 2008/50/EC and 1004/107/EC on air quality made by Directive 2015/1480/EC. The updated Directive, The Air Quality Standards (Amendment) Regulations 2016, came into force on 31st December 2016[6].

NATIONAL LEGISLATION

2.4. Part IV of the Environment Act 1995[7] requires local authorities to review and assess the air quality within their boundaries. As a result, the Air Quality Strategy was adopted in 1997, with national health-based standards and objectives set out for the, then, eight key air pollutants including benzene, 1-3 butadiene, carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter and sulphur dioxide.

[5] EU legislation and UK law. Accessible at: https://www.legislation.gov.uk/eu-legislation-and-uk-law
[6] Statutory Instrument, 2016. The Air Quality Standards Regulations', No. 1184. Queen's Printer of Acts of Parliament.
[7] Department for Environment, Food and Rural Affairs (1995) The Environment Act. HMSO, London.

2.5. Part IV of the Environment Act 2021[8] amends both the Environment Act 1995 and the Clean Air Act 1993. It builds on the foundations provided by Part IV of the Environment Act 1995 and strengthens the local air quality management framework. The act allows the Secretary of State to make provisions for, about or connect with the recall of relevant products that do not meet relevant environmental standards

2.6. The government have resisted calls for the adoption of the recently updated World Health Organisation (WHO) air quality guidelines, specifically targeting particulate matter pollution. The act does introduce a duty on the government to bring forward at least two air quality targets by October 2022 for consultation that will be set in secondary legislation. The first will aim to reduce the annual average level of fine particulate matter ($PM_{2.5}$) in ambient air. The second will be a long-term target (set a minimum of 15 years in the future), which the government says, *"will encourage long-term investment and provide certainty for businesses and other stakeholders".*

2.7. The purpose of the Air Quality Strategy was to identify areas where air quality was unlikely to meet the objectives prescribed in the regulations. The strategy was reviewed in 2000 and the amended Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2000) was published. This was followed by an Addendum in February 2003 and in July 2007, when an updated Air Quality Strategy was published.

2.8. The pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence regarding how each pollutant affects human health. Pollutant objectives are the future dates by which each standard is to be achieved, taking into account economic considerations, practical and technical feasibility.

2.9. The pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence regarding how each pollutant affects human health. Pollutant objectives are the future dates by which each standard is to be achieved, taking into account economic considerations, practical and technical feasibility. The Air Quality Standards Regulations (2016)[9] impose duties on the Secretary of State relating to achieving of the limit values set out within the regulations.

[8] Department for Environment, Food and Rural Affairs (2021) The Environment Act. HMSO, London.
[9] Statutory Instrument, 2016. The Air Quality Standards Regulations', No. 1184. Queen's Printer of Acts of Parliament.

RELEVANT AIR QUALITY STANDARDS AND ENVIRONMENTAL ASSESSMENT LEVELS

2.10. A summary of the relevant Air Quality Objectives (AQO) for human health and environmental receptors relevant to this assessment are presented in Table 1.

Table 1 Air Quality Standards

Pollutant	Average Period	Objective	Percentile Equivalent
Nitrogen Dioxide (NO_2)	Annual Mean	40 µg/m^3	-
	1-hour Mean	200 µg/m^3 not to be exceeded more than 18 times a year	99.79
Particles (PM_{10})	Annual Mean	40 µg/m^3	-
	24-hour Mean	50 µg/m^3 not to be exceeded more than 18 times a year	90.41
Particles ($PM_{2.5}$)	Annual Mean	25 µg/m^3– Stage 1 limit value pre 2020	-
		20 µg/m^3– Indicative Stage 2 limit value post 2020. 15% reduction in background to be achieved between 2010 & 2020 at Urban Background sites	

STATUTORY NUISANCE

2.11. Under Part III of the Environmental Protection Act (1990)[10] , it is the duty of the local authorities to take steps as reasonably practical to investigate issues that could be a 'statutory nuisance', which include complains of:

a. *"any premises in such a state as to be prejudicial to health or a nuisance;*

b. *smoke emitted from premises so as to be prejudicial to health or a nuisance;*

c. *fumes or gases emitted from premises so as to be prejudicial to health or a nuisance*

d. *any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance;*

e. *any accumulation or deposit which is prejudicial to health or a nuisance;*

[…]"

[10] UK Public General Acts, 1990. *Environmental Protection Act 1990, Chapter 43. Queen's Printer of Acts of Parliament.*

2.12. The local authority must serve an abatement notice on the person, premises owner or occupier if one of the statutory nuisances above occur and is unreasonably interfering with the use or enjoyment of someone's premises and/or is prejudicial to health. Should the abatement notice not be complied with, penalties such as a fine or prosecution could occur. However, it is considered as a defence if the best practicable means to stop or reduce a nuisance are employed.

2.13. The most likely cause of a statutory nuisance associated with this AQA is dust. Dust is the generic term used in the British Standard document BS 6069 (Part Two)[11], to describe particulate matter in the size range 1–75µm (micrometres) in diameter. This document has been withdrawn and has been replaced with the BS ISO 4225:2020[12] document. Dust nuisance is the result of the perception of the soiling of surfaces by excessive rates of dust deposition.

PLANNING POLICY

NATIONAL POLICY AND STRATEGY

2.14. The National Planning Policy Framework (NPPF) (2021)[13] sets out the planning policy for England, to help achieve sustainable development within the planning sector.

2.15. Paragraph 105 states:

"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making"

2.16. Paragraph 174 states:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

[..]

[11] The British Standards Institution, 1994. *BS6069-2:1994 - Characterization of air quality.*
[12] The British Standards Institution, 2020. *BS ISO 4225:2020 - Air quality.*
[13] Department of Communities and Local Government (2021). National Planning Policy Framework 2. HMSO, London.

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.

[..]"

2.17. Paragraph 185 states:

"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."

2.18. Paragraph 186 states:

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

2.19. Paragraph 188 states:

"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."

2.20. The NPPF also sets out the national planning policy on biodiversity and conservation. This emphasises that the planning system should seek to minimise effects on and provide net gains in biodiversity, wherever possible, as part of the Government's commitment to halting decline and establishing coherent and resilient ecological networks.

2.21. The NPPF is supported by Planning Practice Guidance (PPG)[14] (DCLG, 2021), which includes guiding principles on how planning can take account of the impacts of new development on air quality.

2.22. Paragraph 001 Reference ID: 32-001-20191101 states:

"The 2008 Ambient Air Quality Directive sets legally binding limits for concentrations in outdoor air of major air pollutants that affect public health such as particulate matter (PM_{10} and $PM_{2.5}$) and nitrogen dioxide (NO_2).

The UK also has national emission reduction commitments for overall UK emissions of 5 damaging air pollutants:

- *fine particulate matter ($PM_{2.5}$)*
- *ammonia (NH_3)*
- *nitrogen oxides (NO_x)*
- *sulphur dioxide (SO_2)*
- *non-methane volatile organic compounds (NMVOCs)*

As well as having direct effects on public health, habitats and biodiversity, these pollutants can combine in the atmosphere to form ozone, a harmful air pollutant (and potent greenhouse gas) which can be transported great distances by weather systems. Odour and dust can also be a planning concern, for example, because of the effect on local amenity."

2.23. Paragraph: 005 Reference ID: 32-005-20191101 states:

"Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the 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 and action plans and/or breach legal obligations (including those relating to 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.

Where air quality is a relevant consideration the local planning authority may need to establish:

- *The 'baseline' local air quality, including what would happen to air quality in the absence of the development;*

14 National Planning Practice Guidance web-based resource. Accessible at https://www.gov.uk/government/collections/planning-practice-guidance

- *whether the proposed development could significantly change air quality during the construction and operational phases (and the consequences of this for public health and biodiversity); and*
- *whether occupiers or users of the development could experience poor living conditions or health due to poor air quality"*

2.24. Paragraph: 008 Reference ID: 32-008-20191101 states:

"Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact. It is important that local planning authorities work with applicants to consider appropriate mitigation so as to ensure new development is appropriate for its location and unacceptable risks are prevented. Planning conditions and obligations can be used to secure mitigation where the relevant tests are met.

Examples of mitigation include:

- *maintaining adequate separation distances between sources of air pollution and receptors;*
- *using green infrastructure, in particular trees, where this can create a barrier or maintain separation between sources of pollution and receptors;*
- *appropriate means of filtration and ventilation;*
- *including infrastructure to promote modes of transport with a low impact on air quality (such as electric vehicle charging points);*
- *controlling dust and emissions from construction, operation and demolition; and*
- *contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development."*

National Clean Air Strategy

2.25. The Clean Air Strategy (CAS)[15] was published in January 2019 and sets out how the government will improve air quality nationally. The document aims to tackle the issue of air quality across all parts of government and society to protect public health and the environment, and identifies what needs to be done to achieve this. The document complements the Industrial Strategy (archived), the Clean Growth Strategy[16] and the 25 Year

[15] Department for Environment, Food and Rural Affairs, 2019. Clean Air Strategy 2019.
[16] Department for Business, Energy and Industrial Strategy, 2017. The Clean Growth Strategy.

Environment Plan[17] and is a key part of delivering the government's 25 Year Environmental Plan.

2.26. The document has adopted international targets to reduce emissions of fine particulate matter, ammonia, nitrogen oxides, sulphur dioxide and non-methane volatile organic compounds by 2020 and 2030. The document proposes tougher goals to cut public exposure to particulate matter pollution, as recommended by the World Health Organisation.

2.27. The strategy not only targets the reduction of emissions, but also a reduction in exposure.

Reducing Emissions from Road Transport: Road to Zero Strategy

2.28. The *Reducing emissions from road transport: Road to Zero Strategy*[18] (2018) document produced by the Office for Low Emission Vehicles (OLEV), Office for Zero Emission Vehicles (OZEV) and the Department for Transport (DfT) sets out how the government aims to end the sale of new conventional petrol and diesel cars and vans by 2040, with almost every car and van having zero emissions by 2050. Furthermore, the aim of the government is to see at least 50%, and as many as 70%, of new car sales being ultra-low emission by 2030 (and up to 40% of new van sales).

2.29. A number of measures have been set out in the document which outline how the government will support this gradual transition, some of which are consumer incentives, research and development and innovation support based.

2.30. Since this document was released, the Prime Minister has announced that, as part of the Ten Point Plan for a Green Industrial Revolution (2020)[19] , the government will end the sale of new petrol and diesel cars and vans from 2030, 10 years earlier than set out in the document above.

2.31. This ambitious plan will see road traffic-related NO_x emissions to reduce significantly over the coming decades, likely beyond the scale of reductions forecast in air quality tools used to assess air quality impacts.

[17] Department for Environment, Food and Rural Affairs, 2018. A Green Future: Our 25 Year Plan to Improve the Environment.
[18] Department for Transport, Office for Low Emission vehicles and Office for Zero Emission Vehicles, 2018. Reducing emissions from road transport: Road to Zero Strategy
[19] Department for Transport and Office for Zero Emission Vehicles, 2020. The Ten Point Plan for a Green Industrial Revolution

LOCAL POLICY AND STRATEGY

BMBC Local Plan

2.32. The Barnsley Local Plan[20] was adopted on the 3rd January 2019 and at the time of writing is the current policy framework to aid in deciding planning applications.

2.33. Policy T5 *Reducing the Impact of Road Travel* states:

"We will reduce the impact of road travel by:

- *Developing and implementing robust, evidence-based air quality action plans to improve air quality;*
- *Working with our sub regional partners, fleet and freight operators to improve the efficiency of vehicles and goods delivery, and reduce exhaust emissions; and*
- *Implementing measures to ensure the current road system is used efficiently."*

2.34. Policy Poll1 *Pollution Control and Protection* states:

"Development will be expected to demonstrate that it is not likely to result, directly or indirectly, in an increase in air, surface water and groundwater, noise, smell, dust, vibration, light or other pollution which would unacceptably affect or cause a nuisance to the natural and built environment or to people.

We will not allow development of new housing or other environmentally sensitive development where existing air pollution, noise, smell, dust, vibration, light or other pollution levels are unacceptable and there is no reasonable prospect that these can be mitigated against.

Developers will be expected to minimise the effects of any possible pollution and provide mitigation measures where appropriate."

2.35. Policy AQ1 *Development in Air Quality Management Areas* states:

"Development which impacts on areas sensitive to air pollution in air quality management areas will be expected to demonstrate that it will not have a harmful effect on the health or living conditions of any future users of the development in terms of air quality (including residents, employees, visitors and customers), taking into account any suitable and proportionate mitigation required for the development.

[20] Barnsley Metropolitan Borough Council (2019) Local Plan

We will only allow residential development which impacts on areas sensitive to air pollution, where the developer provides an assessment that shows living conditions will be acceptable for future residents, subject to any required mitigation.

We will only allow development which impacts on areas sensitive to air pollution which could cause more air pollution, where the developer provides an assessment that shows there will not be a significantly harmful effect on air quality, subject to any required mitigation.

Furthermore, development which impacts on areas sensitive to air pollution due to traffic emissions will be expected to demonstrate suitable and proportionate mitigation relative to the increased traffic emissions generated by the development."

BMBC - Air Quality and Emissions Good Practice Planning Guidance

2.36. The BMBC Air Quality guidance[21] document was adopted in March 2020 and was updated in November 2021. The document sets out a methodology for undertaking air quality and a template for integrating air quality considerations into air quality assessments.

2.37. This provides information on air quality in the borough and supports Local Plan Poll1 *Pollution Control and Protection* policy.

AIR QUALITY ACTION PLAN

National Air Quality Action Plan

2.38. Defra has produced an Air Quality Plan[22] to tackle roadside nitrogen dioxide (NO_2) throughout the United Kingdom. Along with a package of infrastructure, initiatives and grants, the plan requires Local Authorities to produce local action plans by March 2018, with the aim of reducing the air quality concentrations below the objective as soon as practically possible, should they be predicting exceedances of the air quality objectives beyond 2020.

Local Air Quality Action Plan

2.39. The latest Barnsley Metropolitan Borough Council Air Quality Action Plan[23] was produced in 2017, and further updated in 2019. The document sets out twenty-six measures to aid in reducing emissions.

[21] Barnsley Metropolitan Borough Council (2020) Air Quality and Emissions Good Practice Planning Guidance
[22] Defra (2017) UK plan for tackling roadside nitrogen dioxide concentrations
[23] Barnsley Metropolitan Borough Council (2017) Air Quality Action Plan

3. ASSESSMENT METHODOLOGY

CONSTRUCTION IMPACTS

3.1. There is currently no formal assessment criterion for dust, therefore, the approach developed and published by the Institute of Air Quality Management (IAQM), in the Guidance on the Assessment of Dust from Demolition and Construction (2016) document, has been utilised as part of this assessment. The approach consists of a five step processes to assess the potential level of risks, (Large, Medium, Small or Negligible), regarding the four main phases of development, (demolition, earthworks, construction, and trackout). The assessment includes consideration of pre-mitigation, and post-mitigation impacts, based upon the scale and nature of the proposed development.

3.2. The main air quality impacts that may arise during demolition and construction activities are:

- Dust deposition, resulting in the soiling of surfaces;
- Visible dust plumes, which are evidence of dust emissions;
- Elevated PM_{10} and $PM_{2.5}$ concentrations, as a result of dust generating demolition and construction activities; and
- An increase in concentrations of NO_2 due to exhaust emissions from vehicles and equipment.

3.3. In relation to the most likely impacts, the guidance states the following:

"The most common impacts are dust soiling and increased ambient PM_{10} concentrations due to dust arising from activities on the site. Dust soiling will arise from the deposition of particulate matter in all size fractions.

[...]

Experience of assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) and site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed."

3.4. The approach states that an assessment will normally be required where there are:

- Residential receptors within 350 m of the site boundary and/or within 50 m of the routes used by construction vehicles on the local highway network and up to 500 m from site entrances; and/or

- Ecological receptors within 50 m of the site boundary or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).

3.5. An ecological receptor refers to any sensitive habitat that is susceptible to dust soiling. For locations with a statutory designation, such as Sites of Specific Scientific Interest (SSSI), Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), consideration should be given as to whether the particular site, is sensitive to dust. Some non-statutory sites (such as local nature reserves), may also have to be considered if appropriate

3.6. The degree of risk is then derived from the level of the risk, and the sensitivity of the receptor being considered. To note, not all the criteria for a particular risk class need to be met for magnitude or significance. It is suggested in IAQM (2016) guidance that other criteria (such as professional judgement) can be used to justify the assessment.

3.7. A further consideration of the Construction Dust Impact Assessment methodology is set out in Section 4.

CONSTRUCTION & OPERATIONAL TRAFFIC IMPACTS ON HUMAN RECEPTORS

3.8. The EPUK & IAQM, (2017) guidance provides indicative criteria for the requirement of an Air Quality Impact Assessment, which is summarised below.

Local highway network

Step 1

- If any of the following apply to the development:
  - Contains 10 or more residential units or a site area of more than 0.5ha; or
  - Contains more than 1,000 m^2 of floor space for all other uses or a site area greater than 1ha.
- Coupled with any of the following:
  - The development has more than 10 parking spaces; or
  - The development will have a centralised energy facility or other centralised combustion process.

Step 2

- A change of LDV, (light duty vehicle) flow of:
  - More than 100 AADT within or adjacent to an Air Quality Management Area (AQMA); or
  - More than 500 AADT elsewhere.

- A change of HDV, (heavy duty vehicle) flow of:
  - More than 25 AADT within or adjacent to an AQMA; or
  - More than 100 AADT elsewhere.

3.9. Should these criteria not be met, then the guidance document considers air quality impacts associated with a scheme to be 'insignificant' and no further assessment is required.

3.10. This is further discussed in Section 4.

OPERATIONAL TRAFFIC IMPACTS ON ECOLOGICAL RECEPTORS

3.11. Design Manual for Roads and Bridges (DMRB) LA 105 guidance[24] sets out for when a full impact assessment on sensitive ecological receptors is to be undertaken due to the changes in the following highway conditions (within 200 m of the centre of the affected highway):

- Horizontal road alignment will change by 5 m or more;
- Daily traffic flows will change by more than 1,000 Annual Average Daily Traffic (AADT);
- Heavy Duty Vehicle flows will change by more than 200 AADT; or
- Change in speed band (as per Table A.1 and A.2 in the DMRB guidance).

3.12. To note, the DMRB assessment criterion is based upon considering impacts in isolation and in combination with other plans and projects. Furthermore, increases in vehicular volumes are also reiterated in the IAQM (2020) A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites[25] guidance.

3.13. A review of the traffic data provided by the project transport consultant has been screened against the DMRB criteria. This is further discussed Section 4 (Operational Phase Impact Assessment).

3.14. To note, Paragraph 4.29 of the Natural England (2018) document[26] states:

"If the predicted change in traffic flow is less than 1000 AADT or the level of emissions is <1% of the critical load / level, the associated emissions are not likely to have a significant effect alone but run the risk of in-combination effects should be considered further."

[24] Natural England (2018). Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (NEA001), H.M Government, York.
[25] Institute of Air Quality Management (IAQM) (2020) A guide to the assessment of air quality impacts on designated nature conservation sites, IAQM, London
[26] Highways Agency (2019). Design Manual for Roads and Bridges (DMRB), LA 105. Air Quality.

SENSITIVE HUMAN RECEPTORS

3.15. The concentrations of NO_2, PM_{10} and $PM_{2.5}$ have been considered as part of this assessment.

3.16. While selecting the receptor locations, careful consideration was made to receptors located near key road junctions, where congestion may occur, or where a number of highway links merge.

3.17. The modelling receptor locations are described in Table 2 and illustrated in Figure 1. To note, these receptor locations are the same as per the historical AQA[27,28], which were agreed with BMBC.

Table 2 Receptor Locations

Receptor	Description	Grid References		
		x	y	Z (Height)
1	DT24 (Monitoring Site)	435274	400384	2.8
2	DT25 (Monitoring Site)	434832	400405	2.9
3	DT26 (Monitoring Site)	434820	400421	2.8
4	DT27 (Monitoring Site)	434823	400398	2.9
5	School	435438	400246	1.5
6	Residential	435536	400127	1.5
7	Residential	435379	400125	1.5
8	School	434614	400236	1.5
9	Residential	434629	400706	1.5
10	Residential	434610	401001	1.5
11	Residential	436128	399484	1.5
12	Residential	435810	399902	1.5
13	Residential	435385	399957	1.5
14	Residential	435551	400170	1.5
15	Care Home	435525	400169	1.5
16	Residential	435572	400145	1.5

[27] Hoyland West– Air Quality Assessment dated June 2020 - VC-103210-AQ-RP-0001.
[28] Hoyland West Addendum– Air Quality Assessment dated September 2020 - VC-103210-AQ-RP-0003.

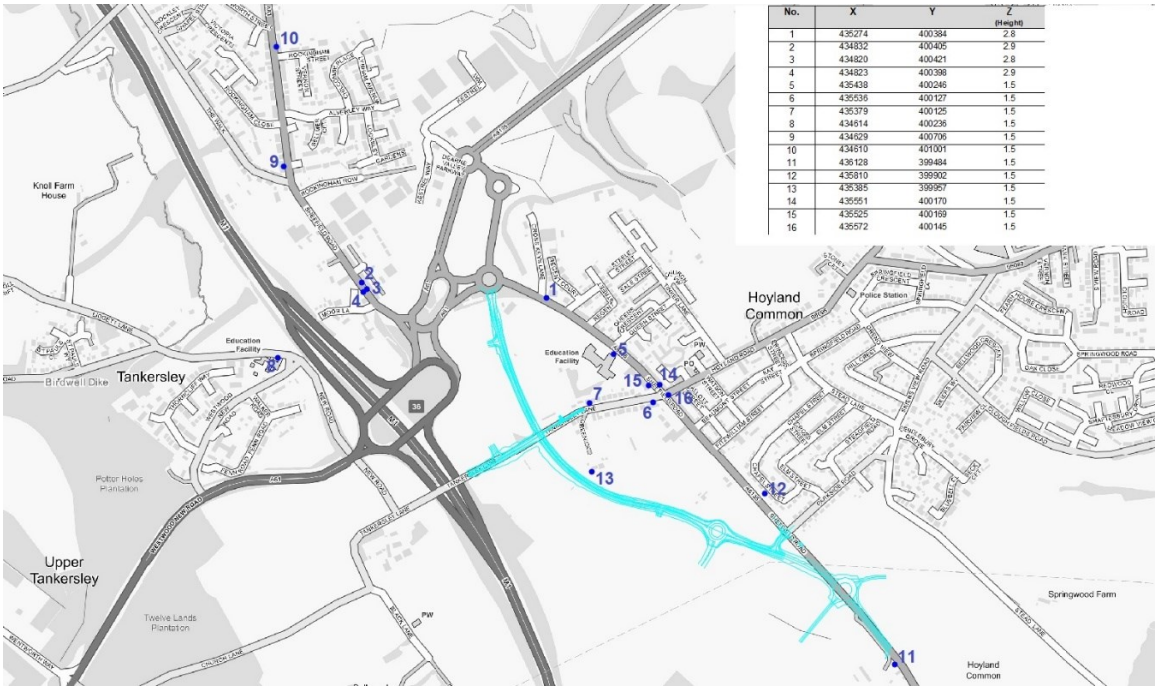


Figure 1 Modelling Locations

SENSITIVE ECOLOGICAL RECEPTORS

3.18. Along with human receptors, there is also the potential for ecological receptors to be impacted by air quality changes. The IAQM (2020) A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites[29] recommends the following ecological sites could have wildlife which could be impacted by air quality:

- 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); and,
- Areas of Ancient Woodland (AW).

[29] Institute of Air Quality Management (EPUK & IAQM) (2020) A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites, IAQM, London

3.19. A review of the Multi-Agency Geographic Information for the Countryside (MAGIC) website[30], indicates two Local Nature Reserves (*Potter Holes Plantation* and *Worsbrough Country Park*) are located near to the proposed development (as illustrated in Figure 2). As they are within 200 m of a highway which would be impacted as a result of the proposed scheme, a screening exercise has been undertaken of the traffic impacts for the construction and operational traffic phases in line with the DMRB (2019) and Natural England (2018) documents.

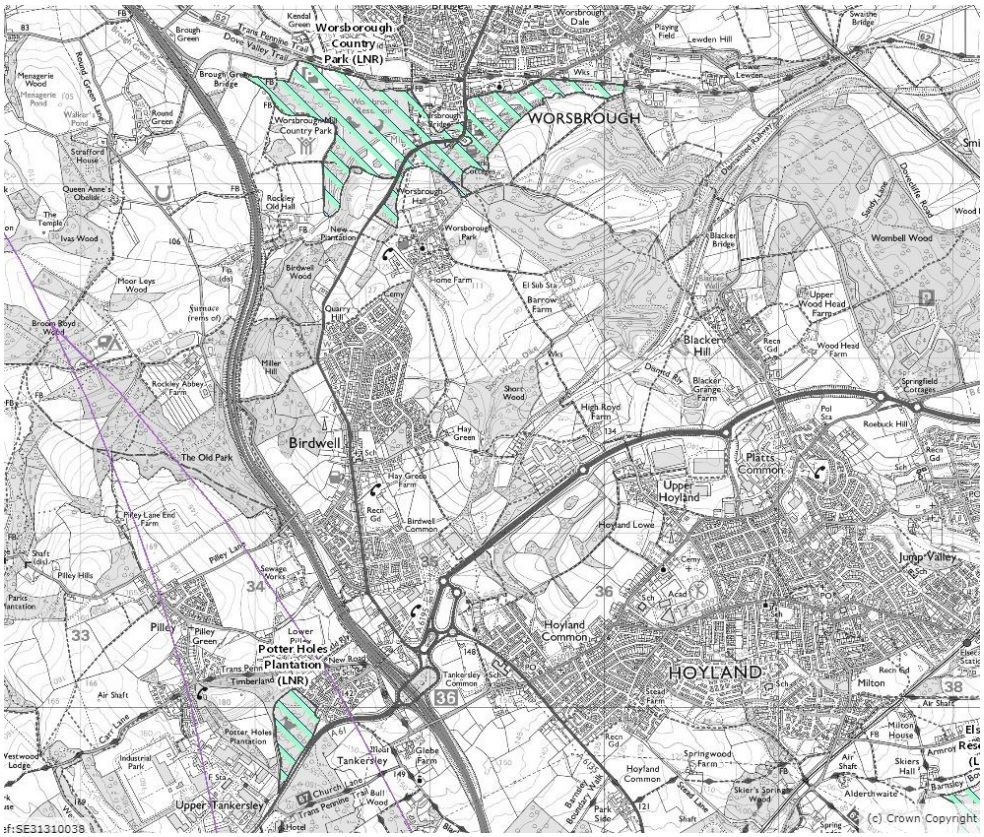


Figure 2 Local Ecological Sites

ASSESSMENT SCENARIOS

3.20. The updated traffic data, (and the assumptions built into this traffic data) utilised within this assessment has been provided by Fore Consulting and this data is set out in Appendix D. Vanguardia have been advised that both TEMPRO and Plot no.1 associated with the wider hybrid planning permission (Ref: 2020/0647) for the site have been considered within this traffic data.

[30] Defra: MAGIC. https://magic.defra.gov.uk/magicmap.aspx

3.21. Based upon this traffic data and the aim of the proposed development to be operational by 2022, the following scenarios have considered as part of this assessment:

- Scenario 1 – 2019 Baseline (Verification Process);
- Scenario 2 – 2022 Baseline;
- Scenario 3 – 2022 Baseline + Plot no.2

MODELLING METHODOLOGY

3.22. The modelling of the release of vehicular emissions, (dispersion), into the air has been carried out using the latest version of the air dispersion model: ADMS-Roads (v5.0.0.1). The model calculates pollution concentrations and deposition over a specified area and/or at a specified location, based upon the following input information:

- Source parameters: e.g. highway width, average speed of vehicles, the number of vehicles per hour and the diurnal traffic profile;
- Meteorological parameters: e.g. wind speed, direction, precipitation, temperature, and atmospheric stability; and
- Topographical factors: e.g. ground levels, buildings, and surface roughness.

3.23. The meteorological data required for the ADMS model, must be sourced from a representative location to the study site and include a full year of sequential readings. A review of the nearest available metrological stations indicates Emley Moor is the most suitable site with the most complete/representative information.

3.24. It is recognised that a minimum data capture of 90% is recommended for representing hourly dispersion conditions within the dispersion model[31]. Missing lines of meteorological data can be interpolated or filled by data for these specific hours from a neighbouring site. The data capture for Emley Moor in 2019 was within an acceptable margin error for use. The wind rose for this site is illustrated in Figure 3.

[31] DEFRA (2018) 'LAQM Technical Guidance LAQM.TG(1)', London DEFRA.

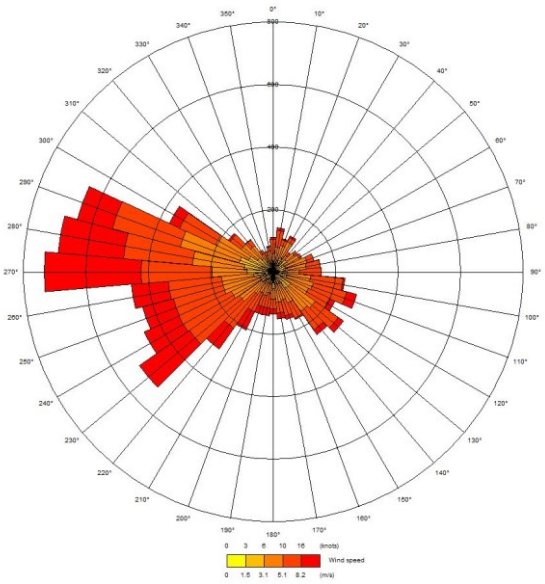


Figure 3 Meteorological Windrose (2019)

3.25. A standard diurnal profile from the Department of Transport website[32] has been utilised as part of the modelling process for an average 7 day week in 2019. The diurnal profile is illustrated in Figure 4.

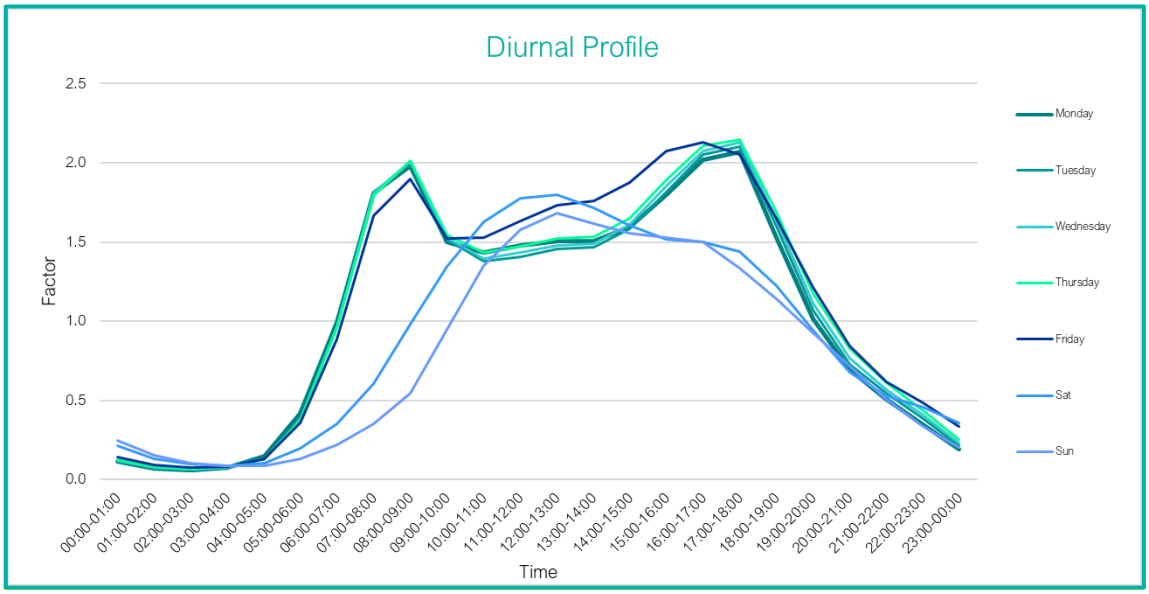


Figure 4 Standard Diurnal Traffic Profile

[32] Department of Transport. Table TRA0307. https://www.gov.uk/government/collections/road-traffic-statistics

EMISSION FACTORS

3.26. There are numerous sources of NO_2, PM_{10} and $PM_{2.5}$ which include for example, industry and domestic origins. However, the main source is usually road transport. For the purpose of this assessment, and due to the absence of other sources in the area, only road traffic emissions have been modelled.

3.27. The potential impacts have been modelled using the ADMS Roads atmospheric dispersion model using the Emission Factor Toolkit[33] (v9.0) which is built into the ADMS model.

3.28. It has been widely known for some time that NO_x/NO_2 levels historically have not been reducing as quickly as anticipated which was identified by Defra[34] in 2011 and reiterated in an IAQM Interim Position Statement[35] released in October 2018, recognising that emissions from diesel vehicles have not declined as expected by Defra. This document has since been formally withdrawn, stating:

"There is a growing body of evidence to suggest that the latest COPERT vehicle emission factors, which feed into the EFT (v9 and onwards), reflect the real-world NO_x emissions more accurately.

It is judged that an exclusively vehicle emissions-based sensitivity test is no longer necessary.

On this basis, the EFT may be used for future year modelling with greater confidence when considering the per vehicle emission, provided that the assessment is verified against measurements made in the year 2016 or later."

3.29. On this basis it is anticipated the most up to date (EFT) v10.1 could be relied upon to provide a good representation of the air quality concentrations and impacts, and no sensitivity test has therefore been undertaken. It is noted that EFT v11.0 has been released in November 2021. However, at the time of writing the ADMS-Roads model has not been updated to reflect this release, so this is not possible to currently consider. The latest EFT has been utilised for the Air Quality Damage Calculation.

3.30. Vehicles emit NO_x with different proportions of NO_2. In the atmosphere, chemical reactions take place between NO, NO_2 and Ozone. In this assessment, the screening of NO_x emissions has taken place and the resulting NO_2 concentration has been calculated post modelling using the DEFRA NO_x to NO_2 Calculator (v8.1)[36].

[33] Defra (2016). Emissions Factor Toolkit. http://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html
[34] Carslaw, D., Beevers, S., Westmoreland, E. and Williams, M. (2011) Trends in NO_x and NO_2 emissions and ambient measurements in the UK.
[35] IAQM. (2018). Interim Position Statement : Dealing with Uncertainty in Vehicle NO_x Emissions within Air Quality Assessments.
[36] http://laqm.defra.gov.uk/tools-monitoring-data/no-calculator.html.

VERIFICATION METHOD

3.31. Whilst ADMS-Roads is widely accepted for its use in assessments of this nature, it is still important that a model verification process is undertaken to confirm that the model's performance for the Site, is within an acceptable margin of error. Therefore, a comparison of modelled results with monitored results has been undertaken in line with LAQM.TG(16)[37].

3.32. Details of the verification process are set out Appendix C. The model was found to be under-predicting compared to the monitored concentrations, which is not unusual. Therefore, adjustment factors have been derived, as set out in Appendix C.

MODELLING UNCERTAINTY

3.33. There are many uncertainties when considering both measured and predicted pollution concentrations. The model is dependent upon the traffic data provided for the project, and should this be subject to change, so may the resulting modelled pollution concentrations.

3.34. Due to the ongoing uncertainty regarding 2020 air quality monitoring data as a result of the pandemic, and to ensure a conservative assessment of future exposure and impacts is made, the verification process has used 2019 monitoring data.

3.35. The emissions factors within the latest emission factors are based on assumptions which were current before the occurrence of the Covid-19 pandemic. As such, these data will not reflect any changes that have occurred or may occur in the future as a result of behavioural change caused by the pandemic and / or as a result of measures implemented by governing authorities (e.g. lockdowns, travel restrictions etc.).

3.36. This is highlighted by a recent statement published by DEFRA, which states:

"Users of the updated LAQM tools should be aware that the projections in the 2018 reference year background maps and associated tools are based on assumptions which were current before the Covid-19 outbreak in the UK. In consequence these tools do not reflect short or longer term impacts on emissions in 2020 and beyond resulting from behavioural change during the national or local lockdowns."

[37] Department for Environment, Food and Rural Affairs (2021) Local Air Quality Management Technical Guidance LAQM, TG (16).DEFRA. London

SIGNIFICANCE IMPACT CRITERIA

Construction

3.37. The IAQM (2016) guidance does not provide a method for assessing the significance of effects before mitigation and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place, (as set out in Appendix A) the IAQM (2016) guidance is clear that the residual effect will normally be 'not significant'.

3.38. Currently there is no formal guidance on the absolute magnitude and significance criteria for the assessment of air quality impacts. However, the IAQM & EPUK (2017) document have published recommendations for describing the impact at individual receptor locations as set out in Table 3 and utilised to determine the description of any impact.

Table 3 Air Quality Impact Descriptors for Individual Receptors

Long term average Concentration at receptor in assessment year.	% Change in concentration relative to Air Quality Action Level (AQAL*)				
	<0.5	1	2-5	6-10	>10
75% of less of AQAL	Negligible	Negligible	Negligible	Slight	Moderate
76-94% of AQAL	Negligible	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Negligible	Slight	Moderate	Moderate	Substantial
103-109% of AQAL	Negligible	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Negligible	Moderate	Substantial	Substantial	Substantial

*AQAL are considered to be the objective levels

3.39. The EPUK & IAQM (2017) document provides guidance on the severity of an impact as a descriptor. Although the impacts might be considered 'Slight', 'Moderate' or 'Substantial' at one or more receptor location, the overall effects of a proposed development may not always be judged as being significant.

3.40. The guidance believes that the assessment of significance should be based on professional judgement, with the overall air quality impact of the scheme described as either significant or not significant. In drawing this conclusion, the following factors should be taken into account:

- Receptor Sensitivity;
- 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.

3.41. The judgement of the significance should be made by a competent professional who is suitably qualified.

4. CONSTRUCTION & OPERATIONAL PHASE IMPACT ASSESSMENT

CONSTRUCTION DUST IMPACTS

4.1. A detailed dust risk assessment was undertaken as part of the outline planning consent (Ref: 2020/0647) for this plot. It is anticipated the same mitigation measures will be in place as per the outline planning consent. Therefore, in line with the previous conclusions associated with the original Air Quality Assessment[38] (as set out in Appendix A) associated with the planning consent and the IAQM (2016) guidance, with mitigation measures in place the impacts will be temporary, but 'not significant.'

SCREENING OF CONSENTED CONSTRUCTION PHASE TRAFFIC AGAINST PROPOSED SCHEME

4.2. The project construction company (Winvic) have undertaken a trip generation exercise for Plot no.2 scheme, with has been screened against the EPUK & IAQM (2017) guidance, as set out in Section 3.

4.3. Winvic have advised that the proposed would generate (on average) 22 daily car / van / LGV movements and 40 HGV movements. To note, although the site is located outside an AQMA, one is located near to the site. However, it is anticipated this level of potential daily vehicular trip generation will be similar to the original consented scheme. On the basis the original Air Quality Assessment (as set out in Appendix A) for the wider Hoyland West Masterplan demonstrated no temporary adverse impacts, these proposals are anticipated to be the same.

SCREENING OF CONSENTED OPERATIONAL PHASE TRAFFIC AGAINST PROPOSED SCHEME

4.4. The project transport consultants (Fore Consulting) have undertaken an AADT trip comparison exercise of the current consented outline scheme for Plot no.2 against the proposed Plot no.2 scheme, as set out in Table 4.

[38] Hoyland West– Air Quality Assessment dated June 2020 - VC-103210-AQ-RP-0001.

Table 4 AADT Development Trip Generation Comparison

Scenario	AADT Lights (LDV)	AADT Heavies (HDV)
Consented	1,333	301
Proposed	651	371
Difference	-682	+70

To note, the EPUK & IAQM, (2017) *"recommends that impacts be assessed for the new permission sought against the current baseline for the site, disregarding the extant permission; this will reflect the 'real world' increase experienced by receptors."*

4.5. It is noted that the extant permission (planning consent ref: 2020/0647) has already been implemented and Plot no.1 is in the process of being constructed at the time of writing.

4.6. On the basis the figures in Table 4 exceed Step 2 of the EPUK & IAQM (2017) guidance (as set out in paragraph 3.8) a screening of the potential impacts has been undertaken for the operational year of 2022 for the scenarios set out in Section 3.

4.7. The predicted '2022 baseline' NO_2, PM_{10} and $PM_{2.5}$ concentrations at the previously specified receptor locations, have been compared to the predicted operational vehicular impacts concentrations, and are set out in Table(s) 5 to 7. The table also set out the impact descriptor at each receptor location in line with the assessment matrix in Table 3.

Table 5 2022 Operational Impacts on NO_2 Concentrations (µg/m^3)

Receptor	Annual Mean (µg/m^3)			
	2022 Baseline	2022 Baseline + Operational Traffic	% Change of Objective	Impact Descriptor
		NO_2		
1	22.5	22.6	0	Negligible
2	31.9	32.0	0	Negligible
3	31.8	31.9	0	Negligible
4	30.5	30.6	0	Negligible
5	19.3	19.3	0	Negligible
6	18.8	18.9	0	Negligible
7	17.3	17.4	0	Negligible
8	17.0	17.0	0	Negligible
9	29.2	29.2	0	Negligible
10	27.6	27.6	0	Negligible

11	15.1	15.5	1	Negligible
12	16.9	17.0	0	Negligible
13	17.1	17.5	1	Negligible
14	28.9	29.0	0	Negligible
15	22.1	22.2	0	Negligible
16	32.9	33.0	0	Negligible

Table 6 2022 Operational Impacts on PM_{10} Concentrations ($\mu g/m^3$)

Receptor	Annual Mean ($\mu g/m^3$)			
	202 Baseline	2022 Baseline + Operational Traffic	% Change of Objective	Impact Descriptor
1	13.0	13.1	0	Negligible
2	16.1	16.1	0	Negligible
3	16.1	16.1	0	Negligible
4	15.6	15.6	0	Negligible
5	12.3	12.3	0	Negligible
6	12.0	12.1	0	Negligible
7	11.7	11.8	0	Negligible
8	12.5	12.6	0	Negligible
9	15.4	15.5	0	Negligible
10	14.9	14.9	0	Negligible
11	12.0	12.2	0	Negligible
12	13.4	13.4	0	Negligible
13	13.2	13.4	0	Negligible
14	14.2	14.3	0	Negligible
15	12.8	12.8	0	Negligible
16	15.2	15.2	0	Negligible

Table 7 2022 Operational Impacts on $PM_{2.5}$ Concentrations ($\mu g/m^3$)

Receptor	Annual Mean ($\mu g/m^3$)			
	2022 Baseline	2022 Baseline + Operational Traffic	% Change of Objective	Impact Descriptor
1	8.1	8.1	0	Negligible
2	9.8	9.9	0	Negligible
3	9.8	9.9	0	Negligible
4	9.6	9.6	0	Negligible

5	7.7	7.7	0	Negligible
6	7.5	7.6	0	Negligible
7	7.4	7.4	0	Negligible
8	7.8	7.8	0	Negligible
9	9.5	9.5	0	Negligible
10	9.2	9.2	0	Negligible
11	7.2	7.3	0	Negligible
12	9.0	9.0	0	Negligible
13	8.9	9.0	0	Negligible
14	8.8	8.8	0	Negligible
15	8.0	8.0	0	Negligible
16	9.3	9.4	0	Negligible

NITROGEN DIOXIDE RESULTS

4.8. The modelledNO_2 concentrations in Table 5, show that NO_2 concentrations at all receptor locations are below the annual mean objective (40 µg/m^3).

4.9. Furthermore, all the annual mean NO_2 concentrations are below 60 µg/m^3 and it is unlikely that the 1-hour mean nitrogen dioxide objective will be exceeded.

4.10. Using the matrix in Table 3, the nitrogen dioxide impacts are predicted to be negligible, but not significant.

PM_{10} & $PM_{2.5}$ RESULTS

4.11. The modelled PM_{10} concentrations do not predict an exceedance of the annual mean objective (40 µg/m^3). Using the matrix in Table 3 the impacts are anticipated to be negligible, but not significant.

For PM_{10}, the following equation can be used to derive the number of days that the daily mean limit (of 50µg.m^3) is likely to be exceeded:

$$\text{No. 24 hour exceedances} = -18.5 + 0.00145 \times \text{annual mean}^3 + \left(\frac{206}{\text{annual mean}}\right)$$

The highest annual mean PM_{10} concentration in the assessment tables is 16.1 µg/m^3. Based on the above formula, this predicts 0 exceedance days, which is below the 35-days annual limit. It is therefore thought that none of the receptors would be exposed to any material impact from the short-term concentrations of PM_{10}.

4.12. Along with the modelled PM_{10} concentrations, no exceedances are anticipated of the annual mean $PM_{2.5}$ objective. Using the matrix in Table 3, it can be derived that the impacts are anticipated to be negligible, but not significant.

SCREENING OF OPERATIONAL TRAFFIC IMPACTS ON ECOLOGICAL RECEPTORS

4.13. The predicted impacts of the operational traffic for the development (in isolation and in conjunction with other committed developments) has been screened against the DMRB criteria. Neither scenarios show an increase in the AADT of greater than 1,000 or more or a HDV AADT increase of 200 or more of HDVs, on the highway links adjacent to Potter Holes Plantation nature reserve and Worsbrough Country Park nature reserve. Therefore, an impact assessment has been scoped out, and any impact would not be significant.

AIR QUALITY DAMAGE CALULATION

4.14. As the traffic numbers associated with the scheme has changed, a revised air quality damage calculation has been undertaken in line with the BMBC (2021) guidance, which states that one should be undertaken if a development is classified as 'Major'. The steps below follow this process, and damage cost prices are provided by the Defra IGBC[39] for the first 5 years from opening.

EFT Input

- Assumed Opening Year – 2022 (opening operational year);
- Road Type – Urban (not London);
- Additional trips – 1022 (36.3% HDV);
- Average Distance Travelled – 10 km; and
- Assumed Average Speed – 50 kph.

IGCB Damage Cost Guidance

- Based upon 2017 prices, uplifted to 2022 and assuming 2% compound increase (in line with original EIA);
- 2022 prices multiplied by 5;
- NO_x urban road transport central damage cost 2017 – £9,066 per tonne;

[39] Department for Environment, Food and Rural Affairs. Air Quality Appraisal: Damage Cost Guidance. Accessible at: https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance

- $PM_{2.5}$ to PM_{10} urban road transport conversion factor – 0.635; and
- PM_{10} urban road transport central damage cost 2017 – £51,764 per tonne.

Table 8 Damage Calculation

Pollutant	2022 Average Link Emissions (Tonnes/annum)	2022 Average Link Emissions (£/Tonnes)	Total Across 5 Years (£)
NO_x	1.56	10,010	78,134
PM_{10}	0.25	57,152	70,657
Total			148,791

4.15. The total damage costs provide an indication as to the costs associated with the air pollution effects from a proposed development on the wider area. The calculated figure could be put towards various mitigation measures discussed in Section 5 of the report; it does not represent a sum owed by the developer.

5. MITIGATION

CONSTRUCTION MITIGATION

5.1. It is anticipated that a Construction Environmental Management Plan (CEMP) will be in place. With the mitigation measure in place (as set out in Appendix A) the impacts are anticipated to the temporary, but 'not significant.'

OPERATIONAL MITIGATION

5.2. It should be noted that any mitigation measures should be proportionate to the consented development and the overall impact that the consented development will have upon future air quality concentrations.

5.3. In line with the BMBC Air Quality Planning Guidance document, the impacts should be considered against the central damage cost value of £148,791.

5.4. It is not known at this stage what operational mitigation will be in place. Therefore, it is anticipated the following planning condition will be placed on the planning approval:

"On commencement of the development, detailed specifications of agreed air quality mitigation measures shall be submitted to and approved in writing by the Local Planning Authority. The development shall thereafter be undertaken in accordance with the approved details Reason: In the interests of minimising the impact of the proposal on air quality in accordance with Local Plan Policy Poll 1."

6. CONCLUSIONS

6.1. Vanguardia were appointed by Newlands Developments to undertake this AQA to support a full planning application for two commercial units located on the area known as plot no.2 of Hybrid Planning Permission 2020/0647. The corresponding reference number of the current application is 2021/1159.

6.2. The potential dust impacts have been considered. Following the successful implementation of the suggested mitigation measures set out in Appendix A, the residual effects of dust and emissions from demolition and construction activities, upon the local area and sensitive receptors, although adverse, will be temporary and 'not significant.'

6.3. A qualitative assessment has been undertaken of the construction traffic impacts associated with Plot no.2 on human and ecological receptors. The screening exercise indicates that the scheme will result in temporary impacts that are negligible, but not significant.

6.4. A qualitative assessment has been undertaken of the operational traffic impacts associated with Plot no.2 on ecological receptors. The screening exercise indicates that the scheme will result in temporary impacts that are negligible, but not significant.

6.5. A quantitative assessment has been undertaken of the operational traffic impacts associated with Plot no.2 on human receptors. The air quality modelling exercise indicates that the scheme will result in impacts that are negligible, but not significant.

6.6. An air quality damage calculation has been undertaken for the revised scheme, and an appropriately worded condition has been drafted to ensure future operational air quality mitigation measures are in place.

6.7. The proposed development is therefore expected to comply with all relevant air quality policy.