# Transpennine Route Upgrade

# Bradley Junction Compound

# Air Quality Screening Assessment

## Document Ref: 151667-TSA-00-TRU-REP-W-EN-001659

**Network Rail**

**November 2024**

# Air Quality Assessment

Contents

# 1. INTRODUCTION

## 1.1. Background

1.1.1. Network Rail is proposing to develop the former Bradley Nurseries into a construction compound, Bradley Junction Compound ("the Proposed Development") to facilitate the construction works for the section of the Transpennine Route Upgrade (TRU) between Huddersfield and Westtown (Dewsbury) ("the Scheme").

1.1.2. A Transport and Works Act Order (TWAO) for the Huddersfield and Westtown (Dewsbury) section of the TRU was submitted to the Secretary of State for Transport on 31 March 2021 (The Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order). Upgrading the railway between Huddersfield and Westtown (Dewsbury) is key to delivering passenger benefits along the Transpennine railway. Network Rail is submitting a standalone planning application under the Town and Country Planning Act 1990 to facilitate the use of the former Bradley Nurseries site (herein referred to as "the site") as separate works to the Order.

## 1.2. The Proposed Development

1.2.1. The site is located at the former Bradley Nurseries off Station Road, Bradley, Huddersfield at approximate National Grid Reference (NGR) 417149 420076.

1.2.2. The site will be used principally as a temporary construction compound to serve the TRU works between Huddersfield and Westtown (Dewsbury). Construction activities to service the wider TRU Scheme will be undertaken from the site.

1.2.3. The works will comprise a number of elements:

- Use of the site as a temporary strategic construction compound;
- Retention of existing security fencing around the entire site (new fencing to be provided only if necessary and will match existing);
- Areas to be capped in a Type 1/6F aggregate (or similar) following a topsoil strip;
- Development of a car park for up to 25 spaces, plus two accessible;
- Installation of five welfare / office units (portacabin type temporary buildings);
- Installation of one security welfare unit and toilet;
- Use of the site as a temporary strategic construction compound;
- Localised cut and fill earthworks;
- Creation of internal roads (additional paving will be permeable unbound);
- Use as a bridge storage and assembly area;
- Storage areas; and
- Associated utilities/drainage work.

## 1.3. Scope

1.3.1. To support the planning application a qualitative air quality screening assessment considering the impact of planned site activities on nearby sensitive receptors has been undertaken. The scope of this assessment is to:

- Present the existing baseline air quality at and around the Site (presented in the appendix);
- Assess the potential for significant effects from on-site activities at surrounding sensitive receptors; and
- Discuss any potential mitigation measures to reduce any potential adverse impacts from the continued operation of the site if needed.

## 1.4. Site Context

1.4.1. The site is located within the administrative area of Kirklees Council, approximately 10 km northeast of Huddersfield Railway Station. The site is located on a light industrial estate 4 km northeast of Huddersfield Town Centre. The site is located south of A62 Leeds Road and bounded by residential houses on Station Road to the south, St Thomas's churchyard to the east and Bradley Junction Industrial Estate to the west. The access is off A62 Leeds Road via Bradley Junction Industrial Estate road network, as shown in **Error! Reference source not found.** below.

1.4.2. There is an Air Quality Management Area (AQMA) within 140 m of the site, which covers the A62 Leeds Road and the junction with Bradley Road. This AQMA was declared by Kirklees Council in 2008 due to exceedances of the nitrogen ($NO_2$) annual mean Air Quality Strategy (AQS) objective. It should be noted that Kirklees Council have identified this AQMA as one of several AQMA within the council area that are ready for revocation during 2024/2025, as such the presence of this AQMA should not be used to indicate heightened sensitivity to changes in air quality. Further information on the baseline conditions is detailed in Appendix B including Figure 2 which shows the location of the AQMA and air quality monitoring near the site.

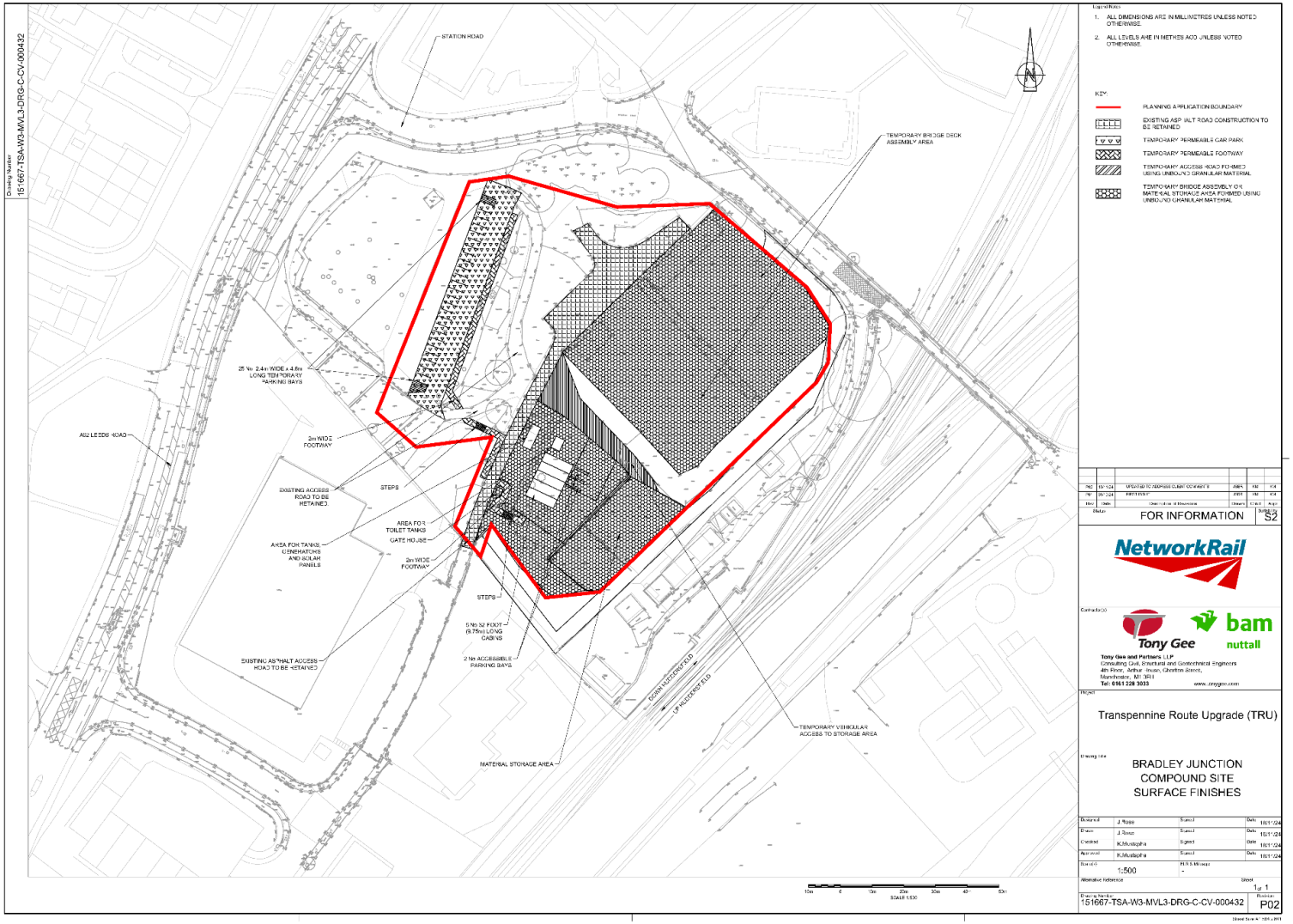


**Figure 1 - Bradley Junction Compound - Location and Layout**

## 1.5. Site Operation

1.5.1. The site is a temporary construction compound to facilitate the construction works for the Scheme. The main activities on site will be the provision of car parking, welfare facilities, a bridge storage and assembly area and materials storage.

## 1.6. Sensitive Receptors

1.6.1. The surrounding area is mainly industrial units, commercial office space and warehouses. There are a small number of residential receptors located within 20 m of the southern boundary of the site accessed via Station Road and a larger residential area northwest of A62 Leeds Road.

1.6.2. The closest ecological site is Dyson / Screamer Woods, designated as an ancient, replanted woodland, and is located 650 m to the southwest of the site. It is therefore unlikely to be affected by the operation of the site.

## 1.7. Consenting Approach

1.7.1. Consent for the Proposed Development will be gained via submission of a planning application under the Town and Country Planning Act 1990. The following sub sections set out the methodology for the qualitative air quality assessment undertaken to support the planning application for the Proposed Development.

## 2.1. Available Information

2.1.1. Information on existing baseline air quality conditions was obtained from the following sources:

- Kirklees Council air quality review and assessment reports[Error! Bookmark not defined.] ;
- Air quality background concentrations and Pollution Climate Mapping (PCM) model data from DEFRA's Air Information Resource (UK-AIR)[1];
- AQMA mapping[2]; and
- Residential properties designated ecological sites and other sensitive receptors in the vicinity of the Proposed Development have been identified from Ordnance Survey (OS) mapping (OpenStreetMap), and the Natural England Multi-Agency Geographic Information for the Countryside (MAGIC) website[3].

2.1.2. A constraints map for air quality is shown in Appendix B - Figure 2, which shows the boundaries of AQMA, PCM model data, and Kirklees Council air quality monitoring sites.

## 2.2. Construction and Use of Construction Compound

### Construction Dust Risk Assessment

2.2.1. The assessment of dust emissions during construction activities on the site is considered in the context of the overall scale and nature of the development under consideration and the potential sensitivity of neighbouring land uses. The quantity and distribution of dust emissions varies according to type, duration and location of activity, weather conditions and the effectiveness of suppression (mitigation) measures. Good practice control measures that are "highly recommended" or "desirable" for dust control for the various dust risk categories are recommended.

2.2.2. The Institute of Air Quality Management (IAQM) 'Guidance on Assessment of Dust from Demolition and Construction (IAQM Construction Dust Guidance)[4] provides a framework for a risk-based approach to the assessment of dust emissions from demolition and construction activities and outlines options for mitigation depending on the level of 'dust risk' identified for a site through the assessment process.

### Construction Traffic

2.2.3. The potential impact of vehicle emissions on local air quality has been evaluated using criteria given in the Environmental Policy Implementation Community (EPIC, previously Environmental Protection UK (EPUK)) and the IAQM's 'Land-use Planning and Development Control: Planning for

[1] Defra UK-AIR 'Modelled background pollution data' Available at: https://uk-air.defra.gov.uk/data/modelling-data
[2] Defra AQMA interactive map. Available at: http://uk-air.DEFRA.gov.uk/aqma/maps
[3] Defra Magic Map Application. Available at: http://www.magic.defra.gov.uk/
[4] IAQM (2024 v2.2). Guidance on the assessment of dust from demolition and construction: https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf

Air Quality' (2017)[5] guidance (IAQM Planning Guidance), which advises that an air quality assessment would be required where a development causes a change in Heavy Duty Vehicle (HDV) flows of more than 25 HDVs per day on local roads within or adjacent to an AQMA and by more than 100 HDVs per day elsewhere or changes of Light Duty Vehicle (LDV) flows of more than 100 LDV per day on local roads within or adjacent to an AQMA and by more than 500 LDVs per day elsewhere. Where the traffic change criteria are exceeded an assessment of the potential impacts from construction traffic is required.

2.2.4. Traffic data have been provided by AtkinsRealis traffic modelling team, in support of the Transport assessment, which estimate the additional traffic generated whilst the site is in use between December 2024 and December 2027. The traffic estimates are described in Appendix C.

Construction Plant

2.2.5. IAQM Construction Dust Guidance advises that the exhaust emissions from on-site non rod mobile machinery (NRMM) plant are unlikely to make a significant impact on local air quality, and in the vast majority of cases will not need to be quantitatively assessed. For site plant and on-site traffic, consideration should be given to the number of plant/vehicles and their operating hours and locations to assess whether a significant effect is likely to occur.

## 2.3. Duration of use

2.3.1. The site will only be in use in support of the TRU works construction phase and will cease following completion of the TRU works planned in December 2026. Further consideration of operational emissions for the use of the site as a compound once the TRU works are complete is not required.

[5] Environmental Policy Implementation Community (EPIC), previously Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) (2017), 'Land-Use Planning & Development Control: Planning for Air Quality'. Available at:http://iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf

## 3.1. Construction

3.1.1. Assessment of the potential impact of the planned site activities on air quality with regards to dust and $PM_{10}$ emissions has been carried out with reference to the four-step process described in the IAQM Construction Dust Guidance. This assessment is described in more detail in Appendix C and summarised below.

3.1.2. Without mitigation there could be increased emissions of dust and particulate matter during site activities.

3.1.3. Site activities will be undertaken in accordance with well-established and routine mitigation measures to control dust and manage emissions as required by Network Rail's Environmental and Social Policy Statement - NR/L2/ENV/015[6]. The need for any further mitigation has been determined based on the assessment undertaken in accordance with the IAQM Construction Dust Guidance.

3.1.4. With reference to the IAQM Construction Dust Guidance a high-level appraisal of the potential for dust emissions during construction works planned at the site in terms of dust soiling and human health impacts has been undertaken. This considers the overall scale and nature of the proposals as summarised below and the sensitivity of neighbouring land uses:

- Minimal if any demolition is expected at site;
- Total earthworks area is less than 12,000 $m^2$ (roads with tarmac or permeable surfaces and storage areas surfaced with unbound granular material with low dust potential);
- Total new building volume is less than 12,000 $m^3$ (prefabricated bridge structure stored and assembled on site (open air)); and
- Total HDV movements (vehicles with a weight of > 3.5 tonnes) are anticipated to be less than 20 AADT with unpaved road lengths less than 50 m.

3.1.5. The potential dust emission magnitude for demolition, earthwork, construction and trackout activities associated with construction of the proposed extension is assessed as SMALL.

3.1.6. Fewer than 10 high sensitivity residential properties and approximately 20 medium sensitivity workplace car park spaces are located within 20 m and fewer than 10 high sensitivity residential properties and 10-100 medium sensitivity workplace car park spaces and industrial units within 50 m of the site access road and the background $PM_{10}$ concentration is 11.6 µg/$m^3$. There are no ecological receptors within 50 m of the site boundary.

3.1.7. The sensitivity of the area is assessed as MEDIUM to dust soiling effects and *LOW* for human health impacts.

3.1.8. Combining the dust emission magnitude with the sensitivity of the area results in the risk of dust impacts being assessed as LOW for dust soiling effects on people and property and negligible for

[6] Environment and Social Minimum Requirements for Projects – Design and Construction, NR/L2/ENV/015, Network Rail, June 2021

human health impacts.

Construction Traffic

3.1.9. The potential impact of vehicle emissions on local air quality has been evaluated using criteria given in the IAQM Planning Guidance[Error! Bookmark not defined.] which advises that an air quality assessment would be required where a development causes a change in Heavy Duty Vehicle (HDV) flows of more than 25 HDVs per day[7] on local roads within or adjacent to an AQMA and by more than 100 HDVs per day elsewhere or changes of Light Duty Vehicle (LDV) flows of more than 100 LDV per day on local roads within or adjacent to an AQMA and by more than 500 LDVs per day elsewhere.

3.1.10. The estimated number of vehicle movements during the construction period associated with the transport of materials, plant and labour to and from site during its active period are detailed in Appendix C. Over the three years the site is planned to be in use, the average number of HDV per day is 18 and the number of LDV is 140 per day. These values do not exceed the traffic change criteria and further assessment has therefore not been undertaken. Any effect on air quality from construction traffic will in any case be temporary and will cease when the works are complete.

Construction Plant Emissions

3.1.11. Some on-site power generation is required but use will be minimised. A location for fuel storage, generators and solar panels is identified in the centre of the site, located north of the temporary cabins. The use of tippers has been identified and there will be a two-month period with higher than normal activity on site due to planned mining mitigation work. The numbers of plant specified for use on site and other on-site non road mobile machinery is not expected to be of a magnitude that would result in a significant impact and as such further assessment is not deemed necessary.

## 3.2. Duration of Use

3.2.1. The site will only be in use in support of the TRU works construction phase and will cease following completion of the TRU works planned in December 2027.

3.2.2. Further consideration of operational emissions for the use of the site as a compound once the TRU works are complete is not required.

[7] As Annual Average Daily Traffic (AADT)

## 4.1. Construction and Use of Compound

4.1.1. Suitable best practice mitigation measures, proportionate to the likely low risk of dust impacts, should be applied during the use of the site by the appointed contractor. With appropriate and site-specific mitigation in place, there should be no significant effects on air quality at local receptors due to construction dust. A full list of highly recommended and desirable mitigation measures for a low risk construction site is presented in Section 8 of the IAQM Construction Dust Guidance. With appropriate mitigation measures in place, any adverse effects resulting from the construction works should be minimised such that there is no significant residual effect on nearby receptors.

4.1.2. It should be noted that construction activities will also be undertaken in accordance with well-established and routine mitigation measures to control dust and manage emissions as required by Network Rail's Environmental and Social Policy Statement - NR/L2/ENV/015.

4.1.3. Examples of general mitigation measures highly recommended for low risk construction sites are given below:

- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary;
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- Make the complaints log available to the local authority when asked;
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook;
- Carry out regular site inspections, record inspection results, and make an inspection log available to the local authority when asked;
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions;
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Avoid site runoff of water or mud;
- Ensure all vehicles switch off engines when stationary - no idling vehicles;
- Avoid the use of diesel- or petrol-powered generators and use solar power, mains electricity or battery powered equipment where practicable;
- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;

- Minimise drop heights from loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and

- Avoid bonfires and burning of waste materials.

## 4.2. Duration of Use

4.2.1. The site will cease use when the construction works for TRU are completed, and therefore mitigation will not be required for an operation phase.

5.1.1. This qualitative air quality screening assessment presents a review of the local existing air quality conditions. It also considers the potential air quality impacts during construction works planned at the site, on existing sensitive receptors.

5.1.2. The site is located on a light industrial estate 4 km northeast of Huddersfield Town Centre. The nearest AQMA, AQMA 1 Bradley, is located around the junction between the A62 and Bradley Road. This AQMA is planned to be revoked in 2024/25 as monitored concentrations have been below the relevant currently legislated AQS objective for the last five years. The AQMA is 140 m northeast of the site boundary, although the industrial estate access road means that it is 500 m from the entrance to the site. Local authority air quality monitoring data and background mapping indicates that local air quality is acceptable with measured concentrations below the currently legislated AQS objectives for $NO_2$ and $PM_{10}$, and background mapping below AQS objectives and future targets for $PM_{2.5}$. Air quality in the vicinity of the Proposed Development is therefore not considered to be a concern.

5.1.3. The area surrounding the site is mainly industrial, commercial office space and warehouses. There are a small number of residential receptors located within 20 m of the southern boundary of the site accessed via Station Road and a larger residential estate northwest of the A62 Leeds Road.

5.1.4. The planned construction activities on site have the potential to generate dust and particulate emissions, which may have a short-term adverse impact at nearby human health and office/commercial and industrial building receptors. With appropriate mitigation measures in place however, these works should not result in a significant residual effect at these receptors.

5.1.5. No long-term impacts to air quality as a result of vehicle emissions are anticipated as a result of the temporary use of the site as a construction compound because additional vehicle movements are below the traffic change criteria recommended in the IAQM Planning Guidance. In addition, the requirement for on-site power generation and plant operation is minimised. It is therefore not anticipated that mitigation of emissions will be required.

5.1.6. Overall, there are not anticipated to be any adverse effects resulting from the site activities planned at site with appropriate mitigation in place. Once TRU construction activities cease there will be no significant residual effect on nearby receptors.

# APPENDICES

## A. Legislation, Policy, and Guidance

# Local Air Pollutants

The pollutants of concern in the context of the site include nitrogen dioxide, particulate matter and dust.

### Nitrogen Dioxide

Nitrogen dioxide ($NO_2$) is a secondary pollutant produced by the oxidation of nitric oxide (NO) in ambient air. The pollutants NO and $NO_2$ are collectively termed oxides of nitrogen ($NO_x$). Road transport contributed 30 per cent of emissions of NOx in 2022 and emissions of NOx from non-road transport (aviation, rail, and shipping) contributed 15 per cent of total NOx emissions in 2022[8]. The majority of $NO_x$ emitted from vehicles is in the form of NO, which oxidises rapidly in the presence of ozone ($O_3$) to form $NO_2$. In high concentrations $NO_2$ can affect the respiratory system, whereas NO does not have any observable effect on human health at the range of concentrations found in ambient air. High concentrations of $NO_x$ can have an adverse effect on vegetation, including leaf or needle damage and reduced growth. Deposition of pollutants derived from $NO_x$ emissions contribute to acidification and/or eutrophication of sensitive habitats.

### Particulate Matter

PM is a generic term used to describe a complex mixture of solid and liquid particles of varying size, shape, and composition. Some particles are emitted directly (primary PM); others are formed in the atmosphere through complex chemical reactions (secondary PM). The composition of PM varies greatly and depends on many factors, such as geographical location, emission sources and weather.

The main sources of man-made PM are the combustion of fuels (by vehicles, industry and domestic properties) and other physical processes such as tyre and brake wear. Natural sources include wind-blown soil and dust, sea spray particles, and fires involving burning vegetation.

There is an extensive body of evidence that long-term exposure to PM increases mortality and morbidity from cardiovascular and respiratory diseases. Outdoor air pollution, particularly PM, has also been classified by the International Agency for Research on Cancer (IARC) as carcinogenic to humans (a Group 1 carcinogen) and causing lung cancer. There is some experimental evidence, however, that ultrafine particles may also pass through the lungs into the bloodstream[9].

PM is classified according to size. The UK currently focuses on estimating the fractions of PM emissions where particles are less than 10 micrometres in diameter ($PM_{10}$) and less than 2.5 micrometres in diameter ($PM_{2.5}$). This approach is based on scientific consensus and longstanding evidence regarding the extent to which different sizes of particles penetrate into the respiratory system and are absorbed by the lungs.

[8] Emissions of air pollutants in the UK – Nitrogen oxides (NOx), Defra, updated February 2024. Available at Emissions of air pollutants in the UK – Nitrogen oxides (NOx) - GOV.UK
[9] Health matters: air pollution, Defra, updated November 2018, Available at https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution

Road transport continues to be a major source of PM emissions, as it contributed 18 per cent of total $PM_{2.5}$ emissions and contributed 16 per cent of total $PM_{10}$ emissions in 2022. Road transport emissions are made up of both exhaust emissions and non-exhaust emissions (brake, tyre and road wear). Exhaust emissions have decreased markedly from 1996 to 2022 due to stricter emissions standards (decreased by 93 per cent for both $PM_{2.5}$ and $PM_{10}$). However, non-exhaust emissions (brake, tyre and road wear) have increased by 15 per cent for $PM_{2.5}$ and increased by 14 per cent for $PM_{10}$ between 1996 and 2022, as the overall number of kilometres travelled by vehicles each year in the UK has increased over this period. This means that most PM emissions from road transport derive from non-exhaust emissions[10].

### Dust

Dust is defined within the Institute of Air Quality Management (IAQM)'s "Guidance on the assessment of dust from demolition and construction[11]" (IAQM Dust Guidance) as 'solid particles that are suspended in air or that have settled out onto a surface after having been suspended in air. The terms dust and particulate matter (PM) are often used interchangeably, although in some contexts one term tends to be used in preference to the other. In this guidance the term 'dust' has been used to include the particles that give rise to soiling, and to human health and ecological effects.

The IAQM Dust Guidance states that in terms of effects, construction sites may give rise to annoyance due to the soiling of surfaces by dust. Very high levels of soiling also have the potential to damage plants and affect the diversity of ecosystems. Additionally, there is evidence of major construction sites increasing long term particulate matter concentrations. Exposure to particulate matter has long been associated with a range of health effects, with an increasing focus on smaller particles such as $PM_{2.5}$.

Dust emissions from a construction site may be mechanically generated due to land preparation (e.g., demolition, land clearing and earth moving) or released from construction activities, site plant and from the movement of road vehicles on temporary roads, open ground and haul routes and tracking out mud onto the local road network.

## Air Quality Legislation

Air quality regulations that apply in England include:

- The Air Quality Standards Regulations (Statutory Instrument (SI) 2010 No.1001[12] as amended (SI 2016 No 1184)[13]) which implemented the air quality limit values included in the EU Directive on ambient air quality and cleaner air for Europe (2008/50/EC), as amended by SI 2019 No.74[14] and SI 2020 No.1313[15] to account for EU withdrawal.

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[10] Emissions of air pollutants in the UK – Particulate matter (PM10 and PM2.5), Defra, updated February 2024. Available at Emissions of air pollutants in the UK – Particulate matter (PM10 and PM2.5) - GOV.UK

[11] IAQM (2024 v2.2). Guidance on the assessment of dust from demolition and construction, Institute of Air Quality Management, Construction-Dust-Guidance-Jan-2024.pdf

[12] The Air Quality Standards Regulations 2010. Available at: http://www.legislation.gov.uk/uksi/2010/1001/contents/made

[13] The Air Quality Standards (Amendment) Regulations 2016. Available at: https://www.legislation.gov.uk/uksi/2016/1184/contents/made

[14] The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019. Available at: https://www.legislation.gov.uk/uksi/2019/74/made

[15] The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 (SI 2020 No. 1313) Available at: https://www.legislation.gov.uk/uksi/2020/1313/made

- Regulations implementing national air quality objectives: Air Quality (England) Regulations 2000 (SI 2000 No. 928), Air Quality (England) (Amendment) Regulations 2002 (SI 2002 No. 3043)[16,17] and
- The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (SI 2023 No.96)[18].

### Limit Values

The air quality limit values included in the EU Directive on ambient air quality and cleaner air for Europe (2008/50/EC) and are included in air quality regulations (SI 2010 No.1001)[12] as amended (SI 2016 No. 1184)[13], which have been further amended by SI 2019 No.74[14] and SI 2020 No.1313[15] to account for EU withdrawal.

The UK Government's air quality plan for nitrogen dioxide in the UK[19] sets out how local authorities should contribute to the achievement of air quality criteria through targeted feasibility studies[20], including clean air zones (CAZ) where appropriate.

### Air Quality Objectives

The Air Quality Strategy (AQS) for England 2023[21] replaces the previous Air Quality Strategy for England, Scotland, Wales and Northern Ireland published in 2007. The new strategy sets out the national air quality objectives and targets for a number of local air pollutants and provides a strategic framework for local authorities and other partners in England.

The air quality objectives were set by expert organisations with regard to scientific and medical evidence on the effects of the particular pollutant on health and define the level of pollution below which health effects are expected to be minimum or low risk even for the most sensitive members of the population. The criteria set air pollution levels to be achieved by a specified timescale, which take account of the costs and benefits of achieving the standard, either without exception or, for certain short-term averaging period standards, with a permitted number of exceedances.

Local authorities have a responsibility (under Part IV of the Environment Act 1995, and as updated by the Environment Act 2021) to review and assess local pollution levels against these objectives.

It should be noted that the AQS objectives only apply in locations likely to have 'relevant exposure' i.e., where members of the public are exposed for periods equal to or exceeding the averaging periods set for the standards. For this assessment, locations of relevant exposure include building façades of residential premises, schools, public buildings and medical facilities; places of work (other than certain community facilities) are excluded.

### Air Quality Targets

In January 2019, the UK Government published its Clean Air Strategy[22], which set out actions proposed by the Government to improve air quality by reducing pollution from a wide range of sources and including requiring new targets for $PM_{2.5}$. Targets have now been set in legislation[23], as required by the

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[16] The Air Quality (England) Regulations 2000. Available at: http://www.legislation.gov.uk/uksi/2000/928/contents/made
[17] The Air Quality (England) (Amendment) Regulations 2002. Available at: http://www.legislation.gov.uk/uksi/2002/3043/contents/made
[18] Environmental Targets (Fine Particulate Matter) (England) Regulations 2023. Available at: https://www.legislation.gov.uk/uksi/2023/96/made?view=plain
[19] Defra (2017) UK plan for tackling roadside nitrogen dioxide concentrations, July 2017, Available at: https://uk-air.defra.gov.uk/library/no2ten/index
[20] Defra (2018) Supplement to the UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations: Local Authorities Feasibility Studies - Defra, UK. [online] Available at: https://uk-air.defra.gov.uk/library/no2ten/2018-la-tfs-documents
[21] Defra (2023) Air quality strategy: framework for local authority delivery, August 2023 Available at: https://www.gov.uk/government/publications/the-air-quality-strategy-for-england
[22] A Clean Air Strategy 2019, Defra, January 2019, Available at https://www.gov.uk/government/publications/clean-air-strategy-2019

[23] Environment Act 2021, Available at https://www.legislation.gov.uk/ukpga/2021/30/contents

Environment Act 2021. Interim targets have also been introduced in DEFRA's Environmental Improvement Plan 2023[24] to be achieved by the end of January 2028. Regulation SI 2023 No.96 sets out that the targets for $PM_{2.5}$ are to apply at relevant monitoring locations which are considered to be fixed monitoring locations within the national monitoring network. However, for this air quality assessment these targets have been applied at all locations on a precautionary basis.

Relevant air quality criteria for the protection of human health are presented in Table A.

**Table A - Statutory air quality criteria for relevant air pollutants**

| Pollutant | Criteria | |
|---|---|---|
| $PM_{10}$ | Limit value and objective | 24-hour mean concentration should not exceed 50 µg/m$^3$ more than 35 times a year. |
| | | Annual mean concentration should not exceed 40 µg/m$^3$. |
| $PM_{2.5}$ | Limit value | Annual mean concentration should not exceed 20 µg/m$^3$ by 2020 (Stage 2 Limit). |
| | | Exposure reduction: target of 20% reduction in concentrations at urban background between 2010 and 2020. |
| | Objective | UK (Except Scotland) annual mean concentration should not exceed 20 µg/m$^3$ by 2020. |
| | | Exposure reduction (UK urban areas): target of 15% reduction in concentrations at urban background between 2010 and 2020. |
| | Target | Annual mean concentration target – a maximum of 10 µg/m³ to be met across England by 2040, with an interim target of 12 µg/m³ by the end of January 2028. |
| | | Population exposure reduction target – a 35% reduction in population exposure by 2040 (compared to a base year of 2018), with an interim target to reduce by 22% by the end of January 2028. |
| $NO_2$ | Limit value and objective | 1-hour mean 200 µg/m$^3$ not to be exceeded more than 18 times a year. |
| | | Annual mean concentration should not exceed 40µg/m$^3$. |

Responsibility for achieving the national air quality criteria lies with the Government, although local authorities should contribute to this through local action plans designed to reduce pollution levels in Air Quality Management Areas (AQMA).

### Local Air Quality Management

Under Part IV of the Environment Act 1995, as amended by Schedule 11 of the Environment Act 2021[25], all local authorities are responsible for Local Air Quality Management (LAQM), the mechanism by which the Government's AQS objectives are to be achieved. As part of this LAQM role, local authorities are required to periodically review air quality in their area and to assess present and likely future air quality against the objectives defined in Regulations. Where a local authority anticipates an objective is expected to be breached within their area, they must designate an AQMA and develop an action plan to

[24] Environmental Improvement Plan 2023, Defra, January 2023, Available at https://www.gov.uk/government/publications/environmental-improvement-plan

[25] Schedule 11 Environment Act 2021. Available from: https://www.legislation.gov.uk/ukpga/2021/30/schedule/11/enacted

improve pollution levels and work towards achieving the AQS objectives. Under the current LAQM regime, a local authority is responsible for regular review and assessment of local air quality, reports on which are published following public consultation and review by the Department for Environment, Food and Rural Affairs (DEFRA).

Statutory responsibility for achieving air quality limit values rests with the Government and local authorities have no responsibility for achieving the national air quality criteria, although they should contribute to this through local action plans designed to reduce pollution levels in AQMAs, and through the targeted feasibility studies[19], including clean air zones where appropriate, to supplement the government's air quality plan for nitrogen dioxide in the UK[20].

#### Dust

There are no national standards or guidelines for dust deposition currently set in the UK, nor by any international organisations. This is due mainly to the difficulty that any standard set would need to relate to dust being a perceptual problem rather than being specifically related to health effects. Typically, there is a 'likelihood of complaint' in residential areas when measured dust levels (as measured using a passive deposit gauge) are 200 mg/m$^2$/day or greater. This threshold is recommended as a level for action by IAQM[26].

# Planning Policy

## National Planning Policy

#### National Planning Policy Framework

The Government's planning guidance of general relevance to air quality is found within the NPPF[27]. It provides guidance for local authorities on incorporating air quality considerations into planning decisions and aims to protect the environment and to promote sustainable growth.

Paragraph 109 states that development should be focused on locations which are or can be made sustainable, as this can help to reduce congestion and emissions, and improve air quality and public health.

Paragraph 192 concerns the need to take into account the presence of AQMAs and Clean Air Zones (CAZs) and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified. The paragraph goes on to state that any new development in AQMAs and CAZs should be consistent with the local air quality action plan.

#### Planning Practice Guidance

Planning Practice Guidance (PPG)[28] is intended to support the NPPF and provide further detail to its policies. PPG indicates at paragraph 005 that information relating to air quality could be important to decision makers, and when there are concerns about air quality, the local planning authority may want to know about:

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[26] IAQM (2018) Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites, https://iaqm.co.uk/text/guidance/guidance_monitoring_dust_2018.pdf

[27] Ministry of Housing, Communities and Local Government (2023) 'National Planning Policy Framework (NPPF)', December 2023. Available at: https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf

[28] Ministry of Housing, Communities and Local Government (2019) National Planning Portal-Planning Practice Guidance-Air Quality, published November 2019, Available at http://planningguidance.planningportal.gov.uk/blog/guidance/air-quality/

- "the 'baseline' local air quality.
- 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."

PPG also advocates, at paragraph 005, early engagement with the local planning and environmental health departments to establish the need and scope of any assessment. Guidance is also given on the level of detail required in an air quality assessment, and measures which could be employed to mitigate adverse effects.

## Local Planning Policy

### Kirklees Local Plan Strategy and Policies

Kirklees Local Plan Strategy and Policies[29] was adopted in February 2019 and contains policies to manage development within Kirklees up to 2031.

Policy LP51 – Protection and improvement of local air quality specifies:

1. *"Development will be expected to demonstrate that it is not likely to result, directly or indirectly, in an increase in air pollution which would have an unacceptable impact on the natural and built environment or to people."*

2. *"Proposals that have the potential to increase local air pollution either individually or cumulatively must be accompanied by evidence to show that the impact of the development has been assessed in accordance with the relevant guidance. Development which has the potential to cause levels of local air pollution to increase must incorporate sustainable mitigation measures that reduce the level of this impact. If sustainable measures cannot be introduced the development will not be permitted."*

3. *"Where the development introduces new receptors into Air Quality Management Areas or Areas of Concern or near other areas of relatively poor air quality, for example near roads or junctions, the development must incorporate sustainable mitigation measures that protect the new receptors from unacceptable levels of air pollution. Where sustainable mitigation measures cannot be introduced which prevent receptors from being exposed to unsafe levels of air pollution, development will not be permitted."*

### Kirklees Local Air Quality Strategy

The Kirklees Local Air Quality Strategy[30] was launched in 2007. This strategy outlines the approach Kirklees takes to improve air quality.

- It is the Vision of Kirklees Council to ensure that children have the best start in life, people are as well as possible for as long as possible and experience a high quality, clean, sustainable and green environment though our shared outcomes.

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[29] Kirklees Council (2019) Kirklees Local Plan Strategy and Policies. Available online at: https://www.kirklees.gov.uk/beta/planning-policy/pdf/local-plan-strategy-and-policies.pdf

[30] Kirklees Council (2007) The Kirklees Local Air Quality Strategy. Available online at: https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/AirQualityStrategy.pdf

- Kirklees Council will consider the impact of Air Quality in all decision making and make decisions which improve air quality.
- Kirklees Council is committed to supporting the increase in active travel (walking and cycling) to improve air quality and the health and wellbeing of the public.
- Kirklees Council will work to accelerate the uptake of ultra-low emission vehicles, reduce emissions from all vehicles and increase low emission public transport use.
- Kirklees Council has declared a Climate Emergency and is committed to reducing carbon emissions. Action to reduce carbon emissions will also reduce emissions of other air pollution and improve local air quality.

### Kirklees Air Quality Action Plan 2019-2024

Kirklees Air Quality Action Plan[31] was adopted in 2019 and outlines actions to improve air quality between 2019 and 2024. The plan outlines 11 broad topics where actions have been identified to reduce emissions associated with vehicles working with local businesses, homeowners and developers to reduce the impact from their emissions.

### Kirklees Health and Wellbeing Strategy 2022 – 2027

The Kirklees Health and Wellbeing Strategy[32] is a high-level strategy delivered by the Health and Wellbeing Board and their partners to:

- Children have the best start in life
- People in Kirklees are as well as possible for as long as possible
- People in Kirklees live independently and have control over their lives

### West Yorkshire Low Emission Strategy - Air Quality and Emissions – Technical Planning Guidance[33]

This technical guidance, developed by the West Yorkshire Low Emission Strategy (WYLES) group, which has membership from each of the five West Yorkshire local authorities, including Kirklees Council, forms part of the development of an overarching low emissions strategy to reduce road transport emissions in West Yorkshire. The technical guidance has been developed in support of planning applications to integrate air quality considerations into land-use planning and development management policies. The guidance provides advice on how to classify development by size and risk, quantify impacts, formulate damage costs, identify mitigation measures and tackle cumulative impacts.

## Rail Specific Policy

### Department for Transport

The Department for Transport's (DfT) Rail Environment Policy Statement[34] aims to:

*"achieve a cleaner, greener railway that is fit for the future".*

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[31] Kirklees Council (2019) Kirklees Air quality Action Plan 2019-2024. Available online at: https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/air-quality-action-plan.pdf

[32] Kirklees Council (2022) Kirklees Health and Wellbeing Strategy 2022 – 2027, Available at https://www.kirklees.gov.uk/beta/delivering-services/health-and-wellbeing-strategy.aspx

[33] West Yorkshire Low Emissions Strategy Group (2016), West Yorkshire Low Emission Strategy - Air Quality and Emissions – Technical Planning Guidance Available at https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/WYLES-air-quality-and-emissions-planning-technical-guide.pdf

[34] DfT (2021) Rail Environment Policy Statement on Track for a Cleaner, Greener Railway. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002166/rail-environment-policy-statement.pdf

The policy statement includes the following priorities in relation to air quality:

- Set targets for levels of $PM_{2.5}$, $PM_{10}$ and $NO_2$ for all parts of the network that the public can access in 2022, with the ambition of meeting these targets by the end of 2030;
- The rail industry will be required to produce air quality improvement plans for stations identified as having poor air quality;
- Remove all diesel-only trains from the network by 2040; and
- For 100% of Network Rail's cars and vans to be zero emission vehicles by 2027.

In addition, the Government's Transport Decarbonisation Plan[35] includes as a strategic priority the need to:

- "*accelerate modal shift to public and active transport*"

With a commitment to:

- "*improve rail journey connectivity with walking, cycling and other modes of transport*"

### Clean Air Strategy

The Department for Environment, Food and Rural Affairs (DEFRA)'s Clean Air Strategy[22] has also identified actions to reduce emissions from rail transport, including to:

*"reduce emissions from rail and reduce passenger and worker exposure to air pollution."*

### Network Rail

Network Rail has set up its own decarbonisation strategy[36], which aims to:

*"set science based targets to the most ambitious target of limiting emissions from our own operations to a 1.5°C warming scenario."* By limiting emissions within their direct control as well as optimising both its upstream and downstream emissions.

### Rail Safety & Standards Board

The Rail Safety & Standards Board (RSSB)'s Air Quality Strategy Framework[37] has a vision to achieve 'A rail network with a positive impact on local air quality'. The Strategy covers all pollutant emissions resulting from the GB rail industry which have proven to impact human health.

### Network Rail Environmental and Social Policy

The Environment and Social Minimum Requirements for Projects – Design and Construction**Error! Bookmark not defined.**, published by Network Rail in 2021 sets out Network Rail's minimum requirements for the management of environment and social risks and opportunities during design and/or construction

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[35] DfT (2021) Decarbonising Transport. A Better, Greener Britain. Available at: https://www.gov.uk/government/publications/transport-decarbonisation-plan

[36] Network Rail (2022) Traction Decarbonisation Network Strategy – Executive Summary: https://www.networkrail.co.uk/sustainability/a-low-emission-railway/

[37] GB Rail Industry supported by RSSB (May 2022 update) Air Quality Strategic Framework. Available at: https://www.rssb.co.uk/sustainability/clean-air/air-quality-strategic-framework

activities. The document describes environmental requirements with respect to air quality and dust and social performance requirements.

## Non-Statutory Guidance

### Development Control

The IAQM Planning Guidance[Error! Bookmark not defined.] sets out to ensure that air quality is adequately considered in the land-use planning and development control processes. It comprises an initial screening stage to determine the need for an air quality assessment. If further assessment is required, a number of more stringent criteria are provided to help establish the need for further work, which may be either qualitative or quantitative, simple or detailed, depending on the impact of the development on, for instance, traffic flow. It also provides a framework for describing the magnitude of changes in local air pollutant concentrations at individual receptors (the impact) and gives advice on how overall significance may be assessed using professional judgement (the effect).

### Construction Dust Assessment

The IAQM Construction Dust Guidance[Error! Bookmark not defined.] provides a framework for a risk-based approach to the assessment of dust emissions from demolition and construction land development schemes and outlines options for mitigation depending on the level of ‘dust risk’ identified for a site through the assessment process.

## B. Baseline Conditions

# Local Air Quality Management

The site is located within the Kirklees Council area of administration. The closest AQMA to the site is AQMA 1 Bradley, an area encompassing properties along two sections of the A62 Leeds Road, in the vicinity of the junctions with the A6107 Bradley Road, and with the A644. The nearest section of the AQMA is located on the A62 Leeds Road approximately 140 m to the northeast of the site. This AQMA was declared in 2008 for exceedances of the $NO_2$ annual mean AQS objective. It should be noted that according to the most recent Kirklees Council LAQM report for 2024**Error! Bookmark not defined.**, the last five years of monitoring data for sites within the AQMA have been below the $NO_2$ annual mean AQS objective and this AQMA is identified as one of several AQMA that are ready for revocation during 2024/2025. Figure 2 below shows the location of AQMA and air quality monitoring near the site.
An area encompassing properties along two sections of the A62 Leeds Road, in the vicinity of the junctions with the A6107 Bradley Road, and with the A644.

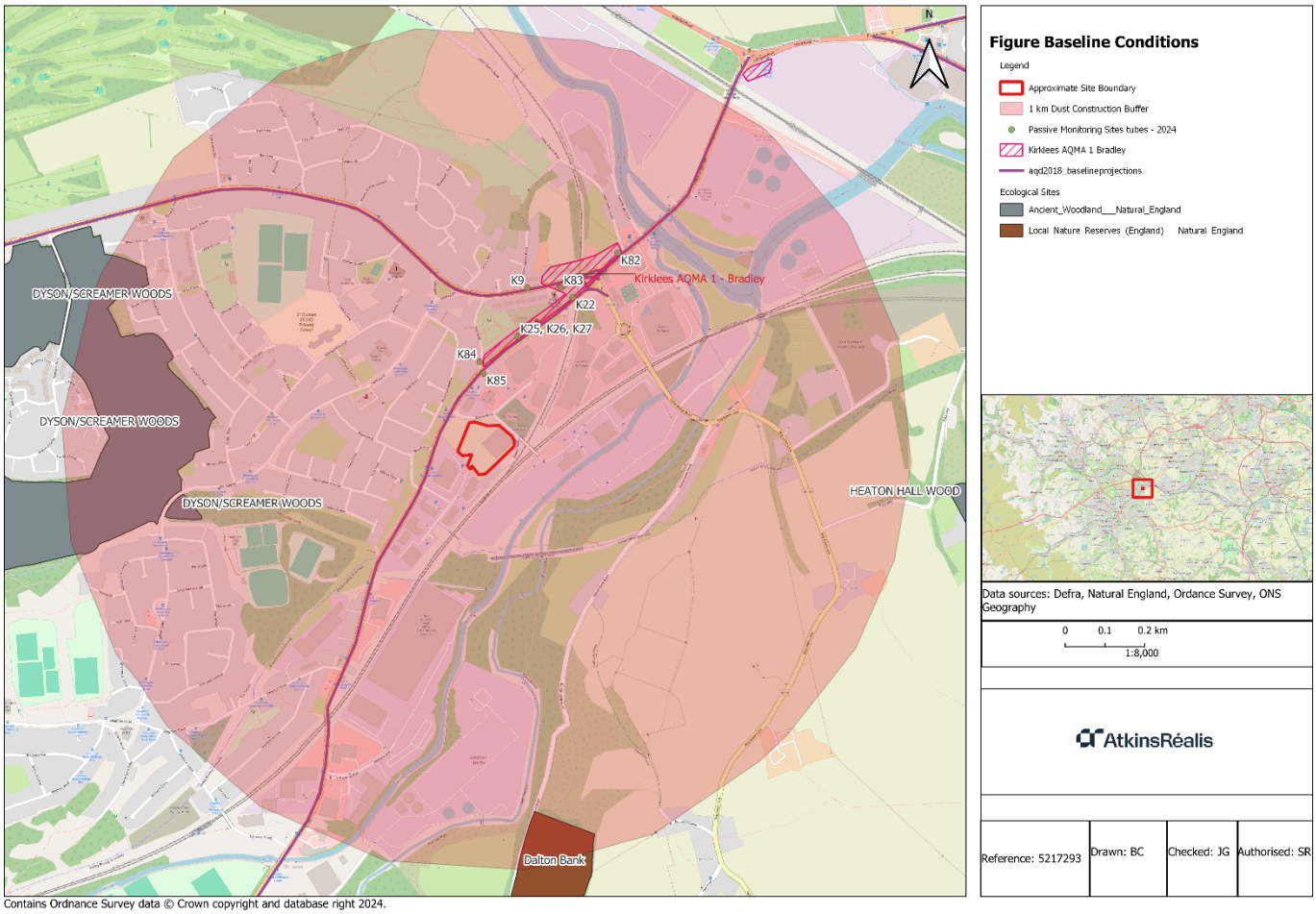


**Figure 2 - Site Location and Area Quality Monitoring Locations**

# Air Quality Monitoring.

### Continuous Monitoring

Continuous monitoring is undertaken at an Automatic Urban and Rural Network (AURN) site within the Kirklees Council boundary, CM1, an urban background monitor in Dewsbury, approximately 7.0 km northeast of the site. CM1 measures pollutant concentrations of $NO_2$, $PM_{10}$ and $PM_{2.5}$.

Table B summarises the $NO_2$, $PM_{10}$ and $PM_{2.5}$ monitored concentrations for this monitoring station from 2019 to 2023. The CMS site is not representative of conditions at the site however it is an urban background site and is representative of regional background conditions without emissions from local traffic.

Annual mean $NO_2$ concentrations at the CMS site are below the AQS objective of 40 µg/m$^3$ for the years presented. Annual mean $PM_{10}$ and $PM_{2.5}$ concentrations at the CMS site are below the AQS objective of 40 µg/m$^3$ and 20 µg/m$^3$ respectively for the years presented. $PM_{2.5}$ concentrations in 2023 were also below the interim target of 12 µg/m³ (to be met by the end of January 2028) and the target of 10 µg/m³ (to be met by 2040).

Table C presents the number of exceedances of the 1-hour mean AQS objective for $NO_2$ of 200 µg/m$^3$ recorded at the CMS sites. The AQS objective for permits 18 exceedances of 200 µg/m$^3$per calendar year. The results show that the AQS objective was met in all years, as there were no exceedances was in one year.

Table D presents the number of exceedances of the daily mean standard for $PM_{10}$ of 50 µg/m$^3$ recorded at the CMS sites, the AQS objective for which permits 35 per calendar year. The results show that the AQS objective was met in all years, as the number of exceedances was below 35 in any one year.

**Table B - Annual mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ continuous monitoring results (µg/m$^3$), 2019 - 2023**

| Site Name | Pollutant | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| CM1 | $NO_2$ | n/a | 16.0 | 17.0 | 18.0 | 16.0 |
| | $PM_{10}$ | n/a | n/a | n/a | 12.6 | 12.0 |
| | $PM_{2.5}$ | n/a | n/a | n/a | 8.3 | 7.0 |

**Table C - Number of 1-hour mean $NO_2$ concentrations > 200 µg/m$^3$, 2019 - 2023**

| Site Name | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| CM1 | n/a | 0 | 0 | 0 | 0 |

**Table D - Number of 24-hour mean $PM_{10}$ concentrations > 50 µg/m$^3$, 2019 – 2023**

| Site Name | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| CM1 | n/a | n/a | n/a | 0 (20) * | 2 |

* Period of valid data was less than 85% so the 90.4th percentile of 24-hour means is provided in brackets.

## Passive Monitoring

Kirklees Council operate 120 passive monitoring sites measuring $NO_2$ using diffusion tubes**Error! Bookmark not defined.**. There are nine passive monitoring sites within 0.5 km of the site, data for which is presented in Table E. The closest diffusion tube location is K85, a roadside site, adjacent to Leeds Road. The maximum recorded annual mean $NO_2$ concentration in 2023 was 31.5 µg/m$^3$, 78.8% of the annual mean AQS objective of 40 µg/m$^3$.

Table E shows that there were no exceedances of the $NO_2$ annual mean AQS objective at any of the passive monitoring sites in 2023.

**Table E - Annual mean $NO_2$ concentrations of diffusion tubes within 2 km of the site (µg/m3)**

| Site ID | Site Type | Site Name | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|
| K9 | Kerbside | Bradley Road | 34.4 | 28.3 | 21.7 | 24.6 | 20.7 |
| K22 | Roadside | 1257 Leeds Road, Bradley, LC183 | N/A | N/A | N/A | N/A | 28.7 |

| Site ID | Site Type | Site Name | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|
| K25 | Other | Leeds Road - RS3 – 1 (triplicate co-location) | 27.4 | 22.6 | 24.5 | 23.8 | 21.0 |
| K26 | Other | Leeds Road - RS3 – 2 (triplicate co-location) | 27.4 | 22.6 | 24.5 | 23.8 | 18.9 |
| K27 | Other | Leeds Road - RS3 – 3 (triplicate co-location) | 27.4 | 22.6 | 24.5 | 23.8 | 21.2 |
| K82 | Roadside | 1282 Leeds Road, Bradley, LC189 | 0.0 | 0.0 | 0.0 | 0.0 | 31.5 |
| K83 | Roadside | 13 Bradley Road, Bradley, LC 81 | 0.0 | 0.0 | 0.0 | 0.0 | 23.2 |
| K84 | Roadside | 5 Oak Road, LC1, Bradley | 0.0 | 0.0 | 0.0 | 0.0 | 20.6 |
| K85 | Roadside | 866 Leeds Road, Bradley, LC174 | 0.0 | 0.0 | 0.0 | 0.0 | 26.7 |

## Defra Mapped Background Concentrations

Estimated annual mean background concentrations[38] for the grid square covering the site area (417500, 420500) for 2024 are shown in Table F. Background concentrations are below current relevant AQS objectives (annual mean concentration of 40 µg/m$^3$ for $NO_2$ and $PM_{10}$, and 20 µg/m$^3$ for $PM_{2.5}$).

**Table F - 2024 DEFRA mapped background annual mean concentrations for grid square 417500, 420500 (µg/m$^3$)**

| $NO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|
| 13.1 | 11.6 | 6.7 |

## Pollution Climate Mapping (PCM)

DEFRA's PCM model[39] provides estimates of roadside concentrations of annual mean $NO_2$, which are used in reporting regarding compliance with limit values. The model provides projected roadside concentrations for the years 2018 to 2030 inclusive, based on a 2018 reference year. The closest PCM model link to the site is located on the A62 Leeds Road, approximately 60 m east of the site (PCM Census ID 802058394). The annual mean $NO_2$ concentrations on the link was 23.5 µg/m$^3$ for 2024, and therefore there is no risk of exceeding the annual mean $NO_2$ limit value.

## Baseline Summary

The existing baseline air quality conditions has shown that the site is not located within an AQMA, the nearest AQMA, AQMA 1 Bradley, is located around the junction between the A62 and Bradley Road. The AQMA is 140 m northeast of the site boundary, although the industrial estate access road means that it is 500 m from the entrance to the site. The AQMA was designated due to exceedances of the annual mean $NO_2$ AQS objective but is planned to be revoked in 2024/25 as monitored concentrations have been below the AQS objective for the last five years. There were no exceedances of the annual

[38] Defra UK-AIR, 'Background Mapping data for local authorities – based on a base year of 2021' Available from: https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021 [Accessed November 2024]
[39] Defra UK-AIR 'Air pollution forecast' Available from: https://uk-air.defra.gov.uk/ [Accessed January 2024]

mean AQS objective for $NO_2$ in 2023, the most recent year of available monitoring data, at passive monitoring sites within 500 m of the site. Furthermore, from a review of DEFRA mapped background concentrations at the site and DEFRA PCM roadside concentrations, there are not expected to be exceedances of the relevant AQS objectives for pollutants $NO_2$, $PM_{10}$ and $PM_{2.5}$ in 2024, the current year. Air quality in the vicinity of the Proposed Development is therefore not considered to be a concern.

# C. Construction Assessment

## Construction Dust Assessment

There is likely to be increased emissions of dust and particulate matter during the site activities related to the TRU works until December 2026, when the compound will cease operation.

The IAQM Construction Dust Guidance provides a framework for a risk-based approach to the assessment of dust emissions from demolition and construction for land development schemes and outlines options for mitigation depending on the level of 'dust risk' identified for a site through the assessment process.

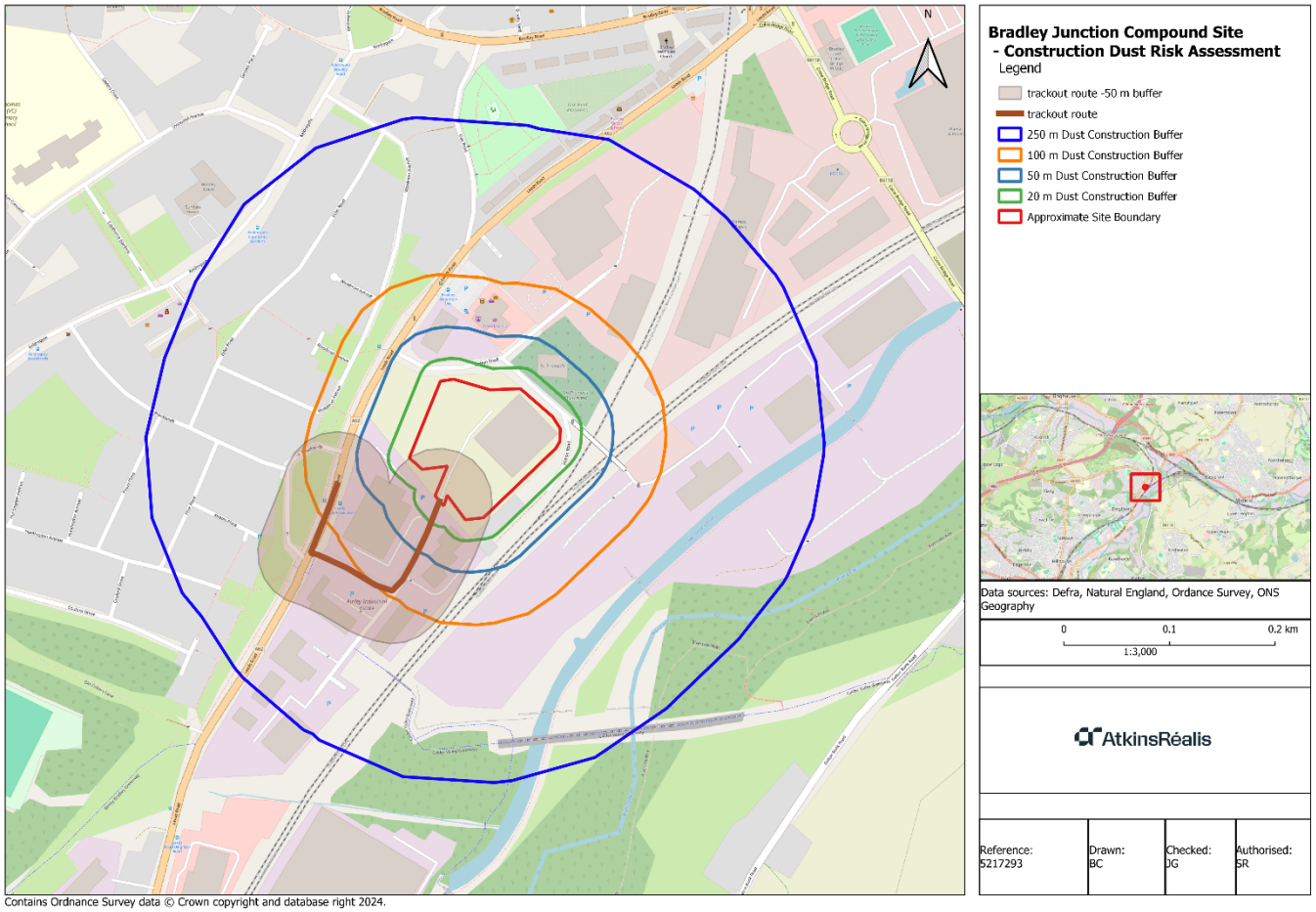


**Figure 3 - Bradley Junction Compound - Construction Dust Assessment**

The screening assessment identified that there were human receptors within 20 m of the site boundary and within 50 m of the routes likely to be used by construction vehicles. No ecological receptors were identified within 50 m of the site boundary or within 50 m of the routes likely to be used by construction vehicles. As such a qualitative dust assessment was conducted, however impacts on ecological receptors were scoped out.

With reference to the IAQM Construction Dust Guidance a high-level appraisal of the potential for dust emissions during construction of the Proposed Development was undertaken. This considered the overall scale and nature of the proposals and the sensitivity of neighbouring land uses.

The magnitude of dust emissions for the activities with the potential to generate dust are presented in Table G.

**Table G - Dust Emission Magnitude**

| Activity | Dust Emission Magnitude | Justification |
|---|---|---|
| Demolition | Small | Very limited demolition is expected on site. |
| Earthworks | Small | Site area is less than 18,000 $m^2$ with loamy and clayey soil classification, however the temporary bridge deck assembly area and material storage area will be surfaced with unbound granular material with low dust potential. |
| Construction | Small | Building volume is likely to be less than 12,000 $m^3$, during bridge deck construction prefabricated deck parts will be built and moved into place. |
| Trackout | Small | Assumed to be less than 20 outward HDV movements per day with approximated unpaved road lengths less than 50 m |

There are between 1 to 10 residential receptors located within 20 m of the site boundary with high sensitivity located south of the red line boundary next to the existing rail line on Station Road. Within 50 m of the external trackout route extending 250 m from the site access there are between 1 to 10 residential high sensitivity receptors and between 10 to 100 medium term workplace car parking spaces that may be sensitive to dust emissions. The sensitivity of the surrounding area to dust soiling is considered to be 'Medium'. As background annual mean $PM_{10}$ concentrations are below 24 µg/$m^3$ in the area the sensitivity of the surrounding area to human health impacts is 'Low'.

The sensitivity of the surrounding area and potential risk from dust soiling and human health impacts, given the dust emissions magnitudes described above, is summarised in Table H. The overall expected dust risk is expected to be 'Low'.

**Table H - Summary of Sensitivity of the Surrounding Area and Expected Dust Risk**

| Sensitivity of Surrounding Area | | Summary of Dust Risk | | | |
|---|---|---|---|---|---|
| | | Demolition | Earthworks | Construction | Trackout |
| Dust Soiling | Medium | Low Risk | Low Risk | Low Risk | Low Risk |
| Human Health | Low | Negligible | Negligible | Negligible | Negligible |

## Construction Traffic

Daily traffic during planned site activities will comprise 5 incoming and 5 outgoing trips from Heavy Goods Vehicles and 68 incoming and 68 outgoing trips for Cars and Light Goods Vehicles during operation between Autumn 2024 and December 2026. These traffic movements are below the traffic change criteria given in the IAQM Planning Guidance (change in Heavy Duty Vehicles of less than 100 and change in Light Duty Vehicles of less than 500 AADT outside an AQMA).

A two-month window is planned when the site will receive 50 incoming and 50 outgoing heavy vehicle trips to deliver material during mining mitigation works. Material will be temporarily stored in the material storage area. Although this number of vehicles would equal the IAQM Planning Guidance traffic change criteria, when this 2-month period is averaged over the 2-year period of use of the construction compound the average daily HDV trips over the whole period is 18 per day, confirming that further assessment of traffic emissions is not required.

## Damage Cost Assessment

The WYLES Air Quality and Emissions Technical Planning Guidance includes a methodology for a pollutant emissions costs calculation to identify the environmental damage costs associated with the proposal and determine the amount (value) of mitigation that is expected to be spent on measures to

mitigate the impacts. Given that the site activity is limited to 2 years and additional vehicle trips associated with the site activity does not exceed relevant traffic change criteria a damage cost assessment in accordance with the WYLES guidance was not considered necessary. The site will be operated in compliance with Network Rail's Environmental and Social Policy Statement - NR/L2/ENV/015 minimising the impact on the local environment and the neighbourhood.

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