njd

Environmental Associates

Air Quality Assessment

Preston Street, Whitehaven

October 2023

Aldi Stores Ltd

Air Quality Assessment

Preston Street, Whitehaven

Client: **Aldi Stores Ltd**

Report Reference: **NJD23-0140-002R**

Report Version	Prepared By	Reviewed By
Final	SEG	NJD-B

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1 INTRODUCTION

1.1.1 NJD Environmental Associates Ltd was instructed by Aldi Stores Ltd to prepare an Air Quality Assessment, to inform a planning application for the proposed relocation of a food store (the 'Proposed Development') located on land off Preston Street in Whitehaven (the 'Site').

1.1.2 The Site is located in an area where air quality is mainly influenced by road traffic emissions along the B5345 Preston Street and the local road network. A map of the Site and surrounding area is shown in Figure 1.

1.1.3 The Proposed Development itself will not have a significant impact on local road traffic, being a relocation of an existing store located to the north of the Site, also along Preston Road. Based on the distribution of traffic generated by the Site, the development flows are anticipated to be below an annual average daily traffic (AADT) of 500 once distributed on the local road network where sensitive receptors are located, indicating that an Air Quality Assessment of vehicle emissions is not required, in accordance with the Environmental Protection UK (EPUK) and Institute of Air Quality (IAQM) document *'Land-Use Planning and Development Control: Planning for Air Quality'* (2017).

1.1.4 This report therefore considers existing baseline conditions in the vicinity of the Site, provides an assessment of the demolition and construction phase and considers the potential local air quality effects associated with traffic generated by the Proposed Development during the operational phase.

2 LEGISLATION, POLICY AND GUIDANCE

2.1 Air Quality Legislation

Air Quality Strategy (2023)

2.1.1 The Air Quality Strategy for England is a strategic framework that fulfils the statutory requirement of the Environment Act 1995, as amended by the Environment Act 2021. The Strategy is aimed at local authorities, giving them a heightened level of responsibility to improve air quality in their areas of jurisdiction. The Strategy requires them to actively consider potential air quality implications of any new proposed development, with a focus on pollution prevention and improvement of local air quality throughout the planning process.

2.1.2 The Air Quality Strategy contains standards, objectives and measures for improving ambient air quality, including the ambitious new targets for fine particulate matter ($PM_{2.5}$) set out in the Environment Act 2021.

Air Quality Standards Regulations (2010)

2.1.3 The Air Quality Standards (Amendment) Regulations 2016 amend the Air Quality Standards Regulations 2010 that transpose the European Union Ambient Air Quality Directive (2008/50/EC) into law in England. The regulations aim to protect human health and the environment by providing air quality limit values for seven pollutants and target values for an additional five pollutants.

2.1.4 Table 1 provides the air quality objectives (AQOs) for the pollutants considered within the Site suitability assessment.

Table 1 - Air Quality Objectives

Pollutant	Concentration (µg/m³)	Averaging Period
NO_2	40	Annual mean
	200	1-hour, not to be exceeded on more than 18 occasions per annum
PM_{10}	40	Annual mean
	50	24-hour mean, not to be exceeded on more than 35 occasions per annum
$PM_{2.5}$	20	Annual mean

2.2 National Planning Policy

National Planning Policy Framework

2.2.1 The revised National Planning Policy Framework (NPPF), dated September 2023, sets out the Government's core policies and principles with respect to land use planning, including air quality.

2.2.2 The purpose of the planning system is to contribute to the achievement of sustainable development. In order to achieve this, the NPPF recognises three overarching objectives, including the following of relevance to air quality:

> *c) An environmental objective - to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.*

2.2.3 The NPPF also includes the following considerations which are relevant to the Proposed Development:

> *"174. Planning policies and decisions should contribute to and enhance the natural and local environment by:*
>
> - *Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability."*

2.2.4 Pollution is defined as:

> *"Anything that affects the quality of land, air, water or soils, which might lead to an adverse impact on human health, the natural environment or general amenity. Pollution can arise from a range of emissions, including smoke, fumes, gases, dust, steam, odour, noise and light."*

2.2.5 The following is also relevant to the Proposed Development:

> *"186. 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."

2.2.6 The National Planning Practice Guidance (NPPG) states that whether or not air quality is relevant to a planning decision will depend on the proposed development air quality impacts in an area where air quality is known to be poor. They could also arise where the development is likely to adversely impact upon the implementation of air quality strategies and action plans and/or, in particular, lead to a breach of EU legislation (including that applicable to wildlife).

2.3 Local Planning Policy

Copeland Local Plan 2013-2028 (2013)

2.3.1 The current *'Copeland Local Plan 2013-2028'*, adopted in December 2013, is a planning framework designed to guide decisions and shape development in the borough. A review of the plan has identified the following policies relevant to air quality:

"Policy ST1 - Strategic Development Principles

The Strategic Development Principles that inform and underpin the Borough's planning policies are:

[…]

C Protect, enhance and restore the Borough's valued assets

[…]

vi) Ensure development minimises air, ground and water pollution"

D Ensure the creation and retention of quality places

[…]

ii) Ensure development provides or safeguards good levels of residential amenity and security"

2.3.2 Furthermore, Policy DM10 'Achieving Quality of Place' is relevant to this assessment:

"The Council will expect a high standard of design and the fostering of 'quality places'. Development proposals will be required to:

[…]

E Create and maintain reasonable standards of general amenity"

Copeland Local Plan 2021-2038 Publication Draft (2022)

2.3.3 Copeland Borough Council (CBC) are in the process of producing a new Local Plan which will replace the Core Strategy and saved policies, with a public consultation held in 2022. A review of the Publication Draft has identified that one sustainability objective relates to air quality, 'ENV8', which aims to improve air quality in Copeland. A review of the document has identified the following policy relevant to air quality, which will help achieve ENV8.

"Policy DS11PU: Protecting Air Quality

Development proposals will only be granted planning permission where they will not give rise to unacceptable levels of air pollution. The Council will continue to monitor air quality in the borough and will introduce Air Quality Management Areas as necessary. […]"

2.3.4 The above policies related to air quality have been considered within this report.

2.4 Guidance

Local Air Quality Management

2.4.1 Under Section 82 of the Environment Act (1995) (Part IV) Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure, as summarised in Table 1, are likely to be exceeded, the LA is required to declare an AQMA. For each AQMA the LA is required to produce an Air Quality Action Plan, the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

2.4.2 The Department for Environment, Food and Rural Affairs (Defra) has published technical guidance for use by LAs in their review and assessment work. This guidance, referred to in this document as LAQM.TG22, has been used where appropriate in the assessment.

3 ASSESSMENT METHODOLOGY

3.1 Construction Phase

3.1.1 The IAQM '*Guidance on the assessment of dust from demolition and construction*' (August 2023), provides a methodology to determine the potential air quality impacts associated with demolition and construction activity. The emphasis of the guidance document is to classify the risk of dust impacts from a site from which then to identify appropriate mitigation measures commensurate with the risk.

3.1.2 The underlying concept of Source-Pathway-Receptor is the basis of the guidance, with four main types of construction activity required to be considered as follows:

- Demolition;
- Earthworks;
- Construction; and
- Trackout.

3.1.3 The potential for dust emissions is assessed for each of these activities, taking into consideration three separate dust impacts:

- Annoyance due to dust soiling;
- The risk of health effects due to an increase in exposure to PM_{10}; and
- Harm to ecological receptors.

Assessment Procedure

The assessment steps provided within the IAQM guidance are summarised below.

Step 1

3.1.4 This step screens the requirement for a more detailed assessment. If there are no receptors within a certain distance then no further assessment is required.

3.1.5 For human receptors, these distances are specified as 250m from the site boundary or 50m from the construction vehicle route within 250m of the site entrance. Should any ecological receptors also be present within 50m of the site boundary or 50m of the construction vehicle route within 250m of the site entrance, these will require consideration. The assessment proceeds to Step 2 if any receptors are identified within these specified distances.

Step 2

3.1.6 This step assesses the risk of the dust impact for each of the four types of activity provided at paragraph 3.1.2, taking account of the scale and nature of the works to determine the dust magnitude (Step 2A) and the sensitivity of the area (Step 2B). Step 2C is then undertaken, considering these factors to provide the risk of dust impacts.

3.1.7 The criteria used during Step 2 of the assessment, as contained within the IAQM guidance, is summarised and provided at Appendix 1 of this report.

Step 3

3.1.8 Step 3 defines the site-specific mitigation measures to be adopted, based on the dust risk categories for each of the four activities undertaken at Step 2C.

3.1.9 Where the risk during Step 2C is defined as negligible, no mitigation measures beyond those required by legislation are required. However, control measures may be adopted as part of best practice.

Step 4

3.1.10 This step determines the significance of the effect after considering the construction activity with mitigation.

3.1.11 As recognised within the IAQM guidance, for almost all construction activity, the aim should be to prevent significant effects through the use of effective mitigation. Hence the residual effect will normally be 'not significant'.

3.2 Operational Phase

3.2.1 In accordance with the EPUK and IAQM document *'Land-Use Planning and Development Control: Planning for Air Quality'* (2017), a significant change would be described as a change in Light Duty Vehicle (LDV) flows of 500 Annual Average Daily Traffic (AADT) and/or Heavy-Duty Vehicle (HDV) flows of 100 AADT or more, along road links where sensitive receptors are located. Alternatively, a change in LDV flows of 100 AADT and/or HDV flows of 25 AADT or more on routes through an AQMA would also be considered a significant change in accordance with the guidance. Where these thresholds are not exceeded, a detailed assessment of air quality is not normally required.

3.2.2 Traffic generated by the Proposed Development is therefore, assessed against the above criteria in order to identify potential significant effects associated with the operational phase of the Site.

4 BASELINE

4.1 Introduction

4.1.1 A desk-top baseline review of existing air quality conditions in the vicinity of the Site has been undertaken. This is detailed in the following sections.

4.2 Local Emission Sources

4.2.1 The Site is located in an area where air quality is mainly influenced by road traffic emissions along the B5345 Preston Street and the local road network. There are potential commercial sources identified within the vicinity of the Site that may also influence local air quality, however, these would be characteristic of the mixed-use area in which the Site is located.

4.3 Local Air Quality Management

4.3.1 The Site is located within CBC, with no AQMAs declared within the borough.

4.4 Air Quality Monitoring

4.4.1 CBC currently undertake non-automatic (passive) diffusion tube monitoring within the borough, however, at the time of writing, NO_2 data from the most recent monitoring years were not publicly available.

4.4.2 However, following a review of the Copeland Local Plan 2021-2038 Publication Draft (2022), it was noted that within the 2019 Air Quality Annual Status Report, air quality in Copeland was described as typically very good with NO_2 levels well below the annual mean objective of 40µg/m^3. The highest concentrations of NO_2 within CBC were found in central Whitehaven with an annual average concentration of 24.3µg/m^3, with the main polluter source being road traffic. It is, therefore, not anticipated that concentrations of NO_2 would be close to exceeding the relevant air quality objective in the vicinity of the Site.

4.4.3 No monitoring of PM_{10} or $PM_{2.5}$ is undertaken within CBC.

4.5 Background Concentrations

4.5.1 In addition to the review of NO_2, PM_{10} or $PM_{2.5}$ monitoring undertaken in the vicinity of the Site, background concentrations for the current assessment year of 2023 have been obtained from the 2018 based default concentration maps provided by Department for Environment, Food & Rural Affairs (Defra) for the relevant grid square where the Site is located. These data are provided below in Table 2.

Table 2 - Predicted Background Pollutant Concentrations (2023)				
OS Grid Square (X, Y; m)	**NO_2 (µg/m³)**	**NO_x (µg/m³)**	**PM_{10} (µg/m³)**	**$PM_{2.5}$ (µg/m³)**
297500, 517500	5.2	6.5	8.9	5.2

4.5.2 As shown in Table 2, predicted background concentrations are well below the national AQOs of 40µg/m³ for NO_2 and PM_{10} and 20µg/m³ for $PM_{2.5}$. For $PM_{2.5}$, the predicted background concentration is also below the target exposure level of 10µg/m³, implemented at the end of January 2023 under the Environment Act 2021. Therefore, there is no predicted risk of the Proposed Development exposing sensitive receptors to elevated pollutant concentrations.

4.6 Construction Phase

4.6.1 Human receptors within 250m of the site boundary or within 50m of the construction vehicle route up to 250m from the site entrance, need to be considered during the construction phase assessment.

4.6.2 A review of the Site location has indicated that with the closest existing dwellings to the south and west, there are 10-100 receptors located <20m from the Site boundary, at worst. When considering the sensitivity of the area to dust soiling effects based on the criteria contained within Table A1.4 of Appendix 1, due to the number and distance to existing **high sensitivity** receptors, the sensitivity of the area is deemed to be **high**, at worst.

4.6.3 When considering the sensitivity of the area to human health effects based on the criteria contained within Table A1.5 of Appendix 1, due to the number and distance to existing **high sensitivity** receptors, and considering the annual mean background PM_{10} concentrations at the Site presented in Table 2, the sensitivity is deemed to be **low**.

4.6.4 There are no ecological receptors located within 50m of the Site or within 50m of the assumed route that construction vehicles would take upon departure, along the B5345 Preston Street.

4.7 Meteorological Data

4.7.1 The potential for dust and particulate matter to impact sensitive locations depends significantly on meteorology, particularly wind direction and wind speed, during emissions. To consider the prevailing conditions at the Site, a review of historical weather data has been undertaken.

4.7.2 The closest observation station with a suitable dataset is St Bees Head No. 2, located approximately 2.9km to the south-west of the Site. It is anticipated that meteorological conditions would be reasonably similar over a distance of this magnitude. Meteorological data were obtained for the period 1st January 2013 to 31st December 2022 (inclusive), and reference should be made to Appendix 2 for a wind rose of these data.

4.7.3 A review of the wind rose has shown that any receptors located to the north through the east of the Site have the greatest potential to be affected by dust and particulate matter emitted and re-suspended during the construction phase, as a result of the prevailing wind direction. However, under low wind speed conditions, it is likely that the majority of dust would be deposited in the area immediately surrounding the source.

5 IMPACT ASSESSMENT

5.1 Construction Phase

Step 1

5.1.1 A baseline review of the Site and surrounding area has identified human receptors within 250m of the Site boundary, and therefore, a detailed assessment has been undertaken.

5.1.2 There are no ecological receptors within the relevant screening distances of the Site or the local road network and as such, these effects are not considered further within the assessment. It is therefore concluded that, the level of risk for ecological receptors is **negligible**.

Step 2

5.1.3 The IAQM assessment methodology has been used to determine the potential dust emission magnitude for the following four dust and PM_{10} sources: demolition, earthworks, construction and trackout. The findings are presented below, with detailed descriptors for each magnitude presented in Table A1.1 of Appendix 1.

Demolition

5.1.4 The key factors when determining the potential dust emission magnitude for the demolition element include the volume and height of the buildings being demolished and the type of materials present.

5.1.5 The Site is currently vacant and as such, the associated demolition activities are not considered further within this assessment.

Earthworks

5.1.6 Earthworks involve excavating material, haulage, tipping and stockpiling. There may also be levelling of the Site and landscaping.

5.1.7 The exact number of heavy earth-moving vehicles active on the Site at any one time is unknown, however, as the total Site area is less than 18,000m^2, the potential dust emission magnitude associated with earthworks is considered to be **small.**

5.1.8 As the sensitivity of the area to dust soiling effects is **high** at worst, in accordance with Table A1.7 of Appendix 1, the risk of dust impact during earthworks, with a **small** dust emission magnitude, is **low risk**.

Construction

5.1.9 The key factors when determining the potential dust emission magnitude for the construction element include the size of the buildings, method of construction and the construction materials used.

5.1.10 The total volume of buildings to be constructed on the Site is assumed to be between 12,000m^3 and 75,000m^3. Therefore, the potential dust emission magnitude associated with construction is considered to be **medium**.

5.1.11 As the sensitivity of the area to dust soiling effects is **high** at worst, in accordance with Table A1.7 of Appendix 1, the risk of dust impact during construction, with a **medium** dust emission magnitude, is **medium risk**.

Trackout

5.1.12 Trackout is the term given to the transport of dust and dirt from the Site on vehicle tyres, deposited on the local road network that may later become suspended in the air as a result of vehicle movements.

5.1.13 At this stage, there is no information available regarding the number of HDVs or the proposed construction routes, and therefore, professional judgement has been used. The unpaved road length within the Site boundary is between 50m and 100m in length and as such, it is considered that the potential dust emission magnitude associated with trackout is **medium**.

5.1.14 As the sensitivity of the area to dust soiling effects is **high** at worst, in accordance with Table A1.7 of Appendix 1, the risk of dust impact associated with trackout, with a **medium** dust emission magnitude, is **medium risk**.

Summary

5.1.15 The predicted dust emission magnitude has been combined with the defined sensitivity of the area (presented in Section 4.6) to determine the risk of dust impacts during the construction phase of the Proposed Development. A summary of the dust risk for each phase is provided in Table 3.

Table 3 - Summary of Dust Risk Prior to Mitigation

Potential Impact	Risk			
	Demolition	**Earthworks**	**Construction**	**Trackout**
Dust Soiling	N/A	Low Risk	Medium Risk	Medium Risk
Human Health	N/A	Negligible	Low Risk	Low Risk
Ecological	N/A	N/A	N/A	N/A

Step 3

5.1.16 Appropriate, site-specific mitigation is to be adopted based on the dust risk categories determined above. The IAQM guidance provides examples of mitigation to reduce dust impact which are summarised in Section 6, and can be included in the Construction Environmental Management Plan for the scheme.

Step 4

5.1.17 Providing the mitigation measures summarised in Section 6 are implemented, the residual effect is considered to be **not significant** in accordance with the IAQM guidance.

5.2 Operational Phase

5.2.1 Based on the nature of the Proposed Development being a relocation of the existing store located to the north of the Site, also adjacent to Preston Road, the Proposed Development traffic flows will be below the EPUK/IAQM criteria of 500 AADT, being located outside of an AQMA, along those road links where sensitive receptors are located. This was confirmed by the Project Transport Consultant (Andrew Moseley Associates).

5.2.2 Furthermore, the background pollutant concentrations at the Site, as provided in Table 2, are below the relevant annual mean AQOs and target value. When taking this into consideration alongside the anticipated development flows, the Proposed Development will result in a **negligible** impact associated with the operational phase traffic on nearby sensitive receptors.

5.2.3 Based on professional judgement, the AQOs will not be approached or exceeded at existing receptor locations, as a result of the Proposed Development. As such, in accordance with the IAQM guidance, the effect can therefore be described as **not significant**.

5.2.4 Increases in pollutant concentrations as a result of exhaust emissions arising from traffic generated by the Proposed Development, once operational, are therefore, not considered further within this report.

6 MITIGATION AND RESIDUAL EFFECTS

6.1 Construction Phase

6.1.1 Based on the assessment results, mitigation will be required during the construction phase of the Proposed Development. Recommended mitigation measures are detailed in Table 4 below.

Table 4 - Dust Emissions Mitigation Measures

Subject	Mitigation Measure
Communication	• Develop and implement a stakeholder communications plan that includes informing the community before work commences on site. • Display the name and contact details of person(s) accountable for dust issues on the site boundary. • Display the head or regional office contact information. • Develop and implement a Dust Management Plan (DMP) which may be incorporated into the overall Construction Environmental Management Plan.
Site Management	• Record all dust and air quality complaints, identify causes(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 emissions either on or off-site and the action taken to resolve the situation in the log book. • Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to make sure that plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.
Monitoring	• Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary.

Table 4 - Dust Emissions Mitigation Measures	
Subject	**Mitigation Measure**
Monitoring	• Carry out regular site inspections to monitor compliance, record inspection results and make an inspection log available to the Local Authority when asked. • Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
Preparing and Maintaining the Site	• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. • Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period. • Avoid site runoff of water or mud. • Keep site fencing, barriers and scaffolding clean using wet methods. • Remove materials that have the potential to produce dust from site as soon as possible unless being re-used on site. If they are being re-used on-site, cover as described below. • Cover, seed or fence stockpiles to prevent wind whipping.
Operating Vehicle/Machinery and Sustainable Travel	• Make sure that all vehicle operators switch off engines when stationary - no idling vehicles. • Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable. • Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate). • A Construction Logistics Plan should be produced to manage the sustainable delivery of goods and materials. • Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car sharing).
Operations	• Only use cutting, grinding or sawing equipment fitter or in conjunction with suitable dust suppression techniques such as water sprays or local extraction.

Table 4 - Dust Emissions Mitigation Measures	
Subject	**Mitigation Measure**
Operations	• Make sure that there is an adequate water supply on the site for effective dust suppression using non-potable water where possible and appropriate. • Use enclosed chutes and conveyors and covered skips. • Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. • Make sure that equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste Management	• Avoid bonfires and burning of waste materials.
Measures Specific to Earthworks	• Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. • Use Hessian, mulchers or trackifiers where it is not possible to re-vegetate or cover with topsoil as soon as practicable. • Only remove the cover in small areas during work and not all at once.
Measures Specific to Construction	• Avoid scabbling (roughening of concrete surfaces) if possible. • Make sure that sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case endure that additional control measures are in place. • Make sure that bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. • For smaller supplies of fine power materials make sure that bags are sealed after use and stored appropriately to prevent dust.
Measures Specific to Trackout	• Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. • Avoid dry sweeping of large areas. • Make sure that vehicles entering and leaving sites are covered to prevent escape of materials during transport. • Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.

Table 4 - Dust Emissions Mitigation Measures	
Subject	**Mitigation Measure**
Measures Specific to Trackout	• Record all inspections of haul routes and any subsequent action in a site log book. • Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. • Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). • Make sure that there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. • Access gates to be located at least 10m from receptors where possible.

Residual Effects

6.1.2 Following the application of the mitigation measures described above, and good site practice, the residual effects of dust and PM_{10} generated by construction activities are considered to be **not significant**.

6.1.3 The residual effects of emissions to air from construction vehicles and plant on local air quality are considered to be **not significant**.

6.2 Operational Phase

6.2.1 The Proposed Development is expected to result in AADT flows below the EPUK/IAQM Air Quality criteria, along road links with sensitive receptors, and would result in a **negligible** impact associated with the operational phase traffic on nearby receptors. As such, no significant effects on air quality are anticipated at existing receptors and mitigation is not required.

Residual Effects

6.2.2 The residual effects of the Proposed Development on air quality are considered to be **not significant** for NO_2, PM_{10} and $PM_{2.5}$, according to the EPUK/IAQM assessment criteria.

7 CONCLUSION

7.1.1 NJD Environmental Associates Ltd was instructed by Aldi Stores Ltd to prepare an Air Quality Assessment, to inform a planning application for the proposed relocation of a food store located on land off Preston Street in Whitehaven.

7.1.2 A qualitative assessment of the potential impacts on local air quality from construction phase activities has been undertaken, in accordance with the relevant guidance document. This identified that there is a **medium** to **low risk** of dust soiling impacts and a **low** to **negligible risk** of increases in particulate matter concentrations, due to unmitigated construction activities. However, through good site practice and the implementation of the recommended mitigation measures, the effects of dust and PM_{10} releases would be significantly reduced. The residual effects of dust and PM_{10} generated by construction activities on air quality are therefore, considered to be **not significant**.

7.1.3 Based on the development traffic flows predicted to be less than 500 AADT once distributed on the local road network where sensitive receptors are located, and low background concentrations, the Proposed Development itself will have a **not significant** impact on local air quality.

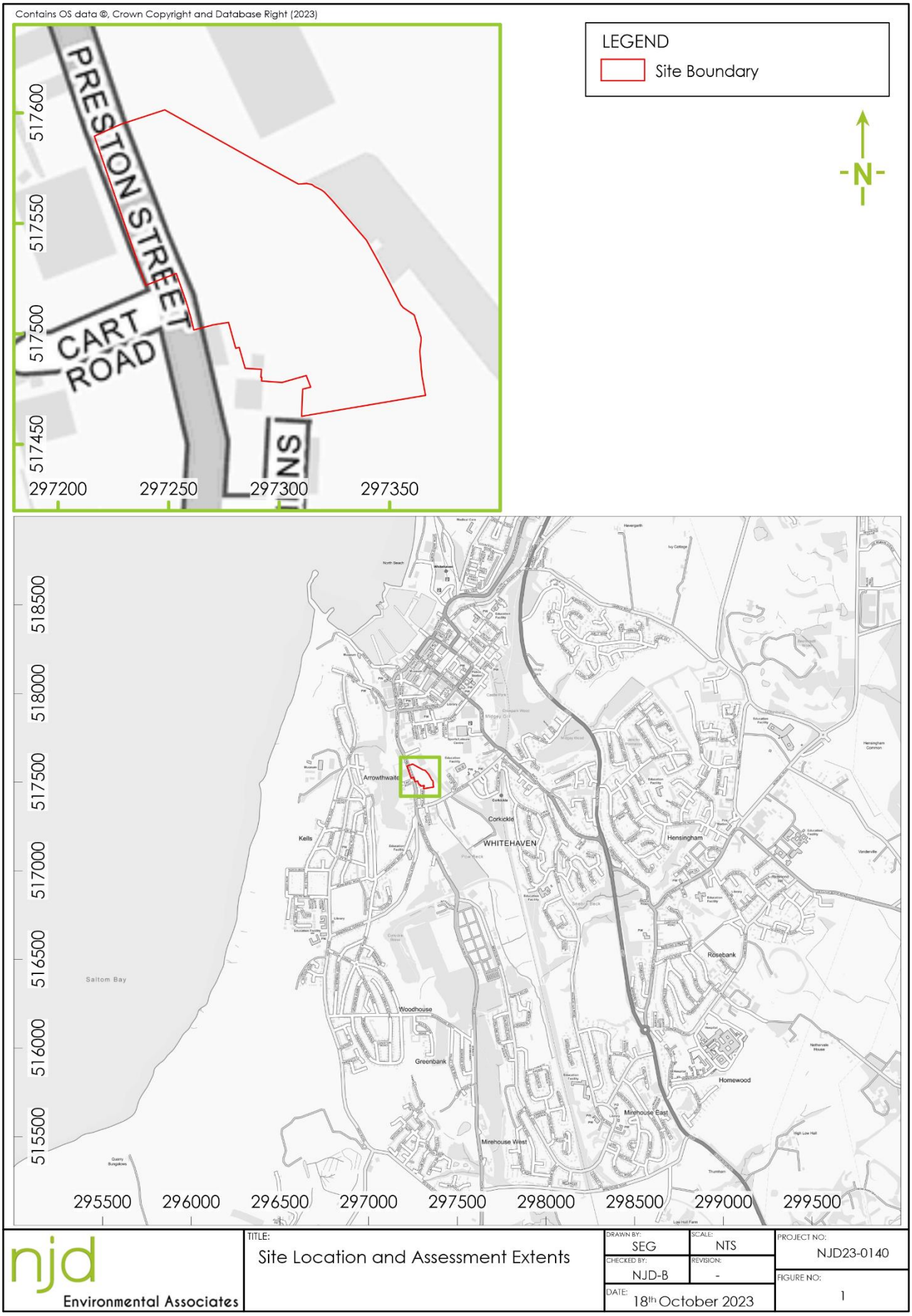
7.1.4 The review of available monitored pollutant concentrations within the vicinity of the Site, and mapped background pollutant concentrations, at representative locations within the vicinity of the Site, indicated that all pollutants considered are below the relevant AQOs and target value, without the risk of exceedance.

7.1.5 The residual effect of the Proposed Development on air quality is therefore, judged to be **not significant** for NO_2, PM_{10} and $PM_{2.5}$, according to the EPUK/IAQM assessment criteria. As such, the implementation of additional mitigation measures is not required.

7.1.6 There is no requirement for further assessment of potential air quality effects associated with the Proposed Development.

7.1.7 Based on the results of this assessment, it is concluded that air quality should not be a prohibitive factor in the determination of this planning application.

FIGURES


Contains OS data ©, Crown Copyright and Database Right (2023)
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Site Boundary
N
PRESTON STREET
CART ROAD
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Homewood
Mirehouse East
Mirehouse West
Saltom Bay
TITLE:
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DRAWN BY: SEG
SCALE: NTS
CHECKED BY: NJD-B
REVISION: -
DATE: 18th October 2023
PROJECT NO: NJD23-0140
FIGURE NO: 1

APPENDICES

Appendix 1 - IAQM Construction Phase Assessment Criteria

Table A1.1 - Potential Dust Emission Magnitude

Magnitude	Activity	IAQM Criteria
Large	Demolition	• >75,000m^3 building demolished • Potentially dusty material (e.g., concrete) • On-site crushing/screening • Demolition >12m above ground level
	Earthworks	• Total site area >110,000m^2 • Potentially dusty soil type, e.g., clay • >10 heavy earth moving vehicles active at any one time • Formation of bunds >6m in height
	Construction	• Total building volume >75,000m^3 • On site concrete batching • Sandblasting
	Trackout	• >50 HDV (>3.5t) outward movements in any one day • Potentially dusty surface material, e.g., high clay content • Unpaved road length >100m
Medium	Demolition	• 12,000 - 75,000m^3 building demolished • Potentially dusty material (e.g., concrete) • Demolition 6-12m above ground level
	Earthworks	• Total site area 18,000m^2 - 110,000m^2 • Moderately dusty soil type, e.g., silt • 5-10 heavy earth moving vehicles active at any one time • Formation of bunds 3m-6m in height
	Construction	• Total building volume 12,000m^3 - 75,000m^3 • Potentially dusty construction material, e.g., concrete • On site concrete batching
	Trackout	• 20-50 HDV(>3.5t) outward movements in any one day • Moderately dusty surface material, e.g., high clay content • Unpaved road length 50m - 100m
Small	Demolition	• <12,000m^3 building demolished • Non-dusty material (e.g metal cladding) • Demolition <6m above ground level • Work during wetter months
	Earthworks	• Total site area <18,000m^2 • Soil type with large grain size, e.g., sand • <5 heavy earth moving vehicles active at any one time • Formation of bunds <4m in height
	Construction	• Total building volume <12,000 m^3 • Construction material with low potential for dust release, e.g., metal cladding or timber
	Trackout	• <20 HDV (>3.5t) outward movements in any one day • Surface material with low potential for dust release • Unpaved road length <50m

Table A1.2 - Factors to Consider - Sensitivity of the Area to Dust Soiling Effects

Receptor Sensitivity	Human Receptors	Ecological Receptors
High	• Users can expect enjoyment of a high level of amenity • The appearance, aesthetics or value of their property would be diminished by soiling • People or property reasonably expected to be present continuously, or at least regularly for extended periods, as part of the normal use of the land • Indicative examples include dwellings, museums, medium and long-term car parks and car showrooms	• Locations with an international or national designation and the designated features may be affected by dust soiling • Locations where there is a community of particularly dust sensitive species such as vascular species included in the Red Data List for Great Britain • Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings
Medium	• Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home • The appearance, aesthetics or value of their property could be diminished by soiling • The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal use of the land • Indicative examples include parks and places of work	• Location where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown • Locations with a national designation where the features may be affected by dust deposition • Indicative examples are a Site of Special Scientific Interest (SSSI) with dust sensitive features
Low	• The enjoyment of amenity would not reasonably be expected • Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling • There is a transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land • Indicative examples include playing fields, farmland (unless commercially sensitive horticultural), footpaths, short term car parks and roads	• Locations with a local designation where the features may be affected by dust deposition • Indicative example is a local nature reserve with dust sensitive features

Table A1.3 - Factors to Consider - Sensitivity of People to Health Effects of PM_{10}

Receptor Sensitivity	Human Receptors
High	• Locations where members of the public are exposed over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for 8 hours or more in a day). • Indicative examples include residential properties. Hospitals and schools should also be considered as have equal sensitivity to residential areas for the purposes of this assessment.
Medium	• Locations where the people exposed are workers and exposure is over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for 8 hours or more in a day). • Indicative examples include office and shop workers, but will generally not include workers occupationally exposed to PM_{10}, as protection is covered by Health and Safety at Work legislation.
Low	• Locations where human exposure is transient. • Indicative examples include public footpaths, playing fields, parks and shopping streets.

TABLE A1.4 - Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<350
High	>100	High	High	Low	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

TABLE A1.5 - Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM_{10} Concentrations	Number of Receptors	Distance from the Source (m)				
			<20	<50	<100	<200	<250
High	>32µg/m^3 (>18 µg/m^3 in Scotland)	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low

Receptor Sensitivity	Annual Mean PM_{10} Concentrations	Number of Receptors	Distance from the Source (m)				
			<20	<50	<100	<200	<250
High	28-32µg/m³ (16-18 µg/m³ in Scotland	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24-28µg/m³ (14-16 µg/m³ in Scotland	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24µg/m³ (<14 µg/m³ in Scotland	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	>32µg/m³ (>18 µg/m³ in Scotland)	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	28-32µg/m³ (16-18µg/m³ in Scotland)	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	24-28µg/m³ (14-16µg/m³ in Scotland)	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<24µg/m³ (<14µg/m³ in Scotland)	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	≥1	Low	Low	Low	Low	Low

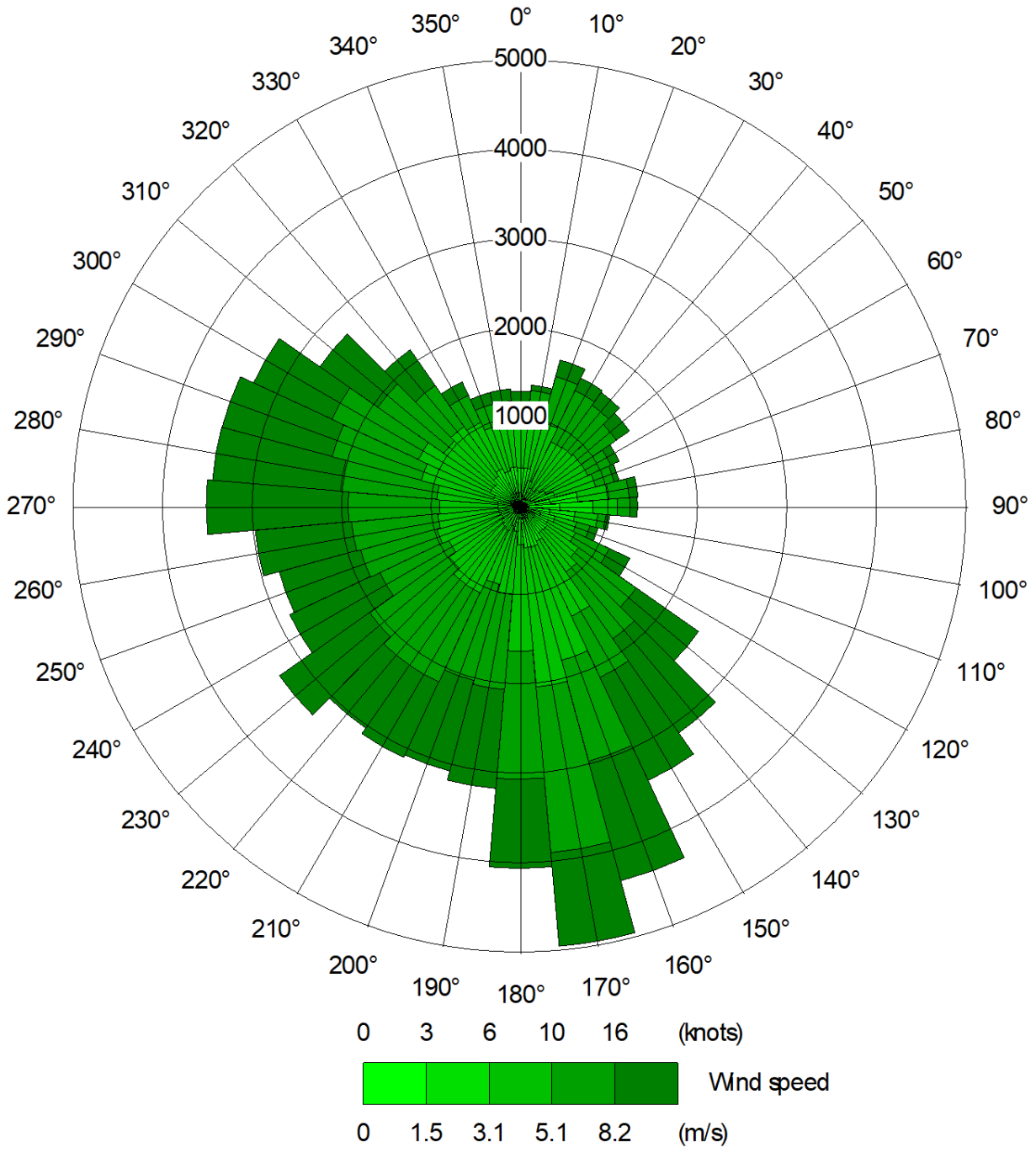
Table A1.6 - Factors to Consider - Sensitivity of the Area to Ecological Impacts

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

Table A1.7 - Risk of Dust Impacts

Sensitivity of Area	Dust Emission Magnitude		
	Large	**Medium**	**Small**
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks and Construction			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Trackout			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Negligible
Low	Low Risk	Low Risk	Negligible

Appendix 2 - Wind Rose for St Bees Head No. 2 (2013-2022)



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