London Borough of Camden

Liddell Road

Air Quality Assessment

Final 2 | 15 January 2018

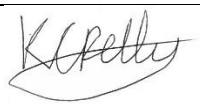
Job number 071756-04

Ove Arup & Partners Ltd
13 Fitzroy Street
London
W1T 4BQ
United Kingdom
www.arup.com

ARUP

Document Verification

ARUP

Job title		Liddell Road			**Job number** 071756-04
Document title		Air Quality Assessment			**File reference**
Document ref					
Revision	**Date**	**Filename**	Liddell Road_AQ_final.docx		
Final	22 Dec 2017	**Description**	Draft Air Quality Report		
			Prepared by	Checked by	Approved by
		Name	Katie Petty	Christine McHugh	Christine McHugh
		Signature			
Final 2	15 Jan 2018	**Filename**	Liddell Road_AQ_final2.docx		
		Description	Final Air Quality Report		
			Prepared by	Checked by	Approved by
		Name	Katie Petty	Christine McHugh	Christine McHugh
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			

Issue Document Verification with Document

Contents

Appendices

1 Introduction

Ove Arup & Partners Limited (Arup) has been commissioned by Camden Council (London Borough of Camden (LBC)) to undertake an air quality appraisal for the demolition phase of a proposed development at the Site at 32-33 Liddell Road, London, NW6 2EW, in the LBC.

Air quality studies are concerned with the presence of airborne pollutants in the atmosphere. This report outlines air quality policy and legislation relevant to the demolition, describes the existing air quality conditions in the vicinity of the proposed development in respect of fine particulate matter (PM_{10}), and outlines the potential air quality impacts associated with the demolition. Mitigation measures are also proposed, which would be implemented to reduce the impact of the demolition on air quality to a level which is not significant.

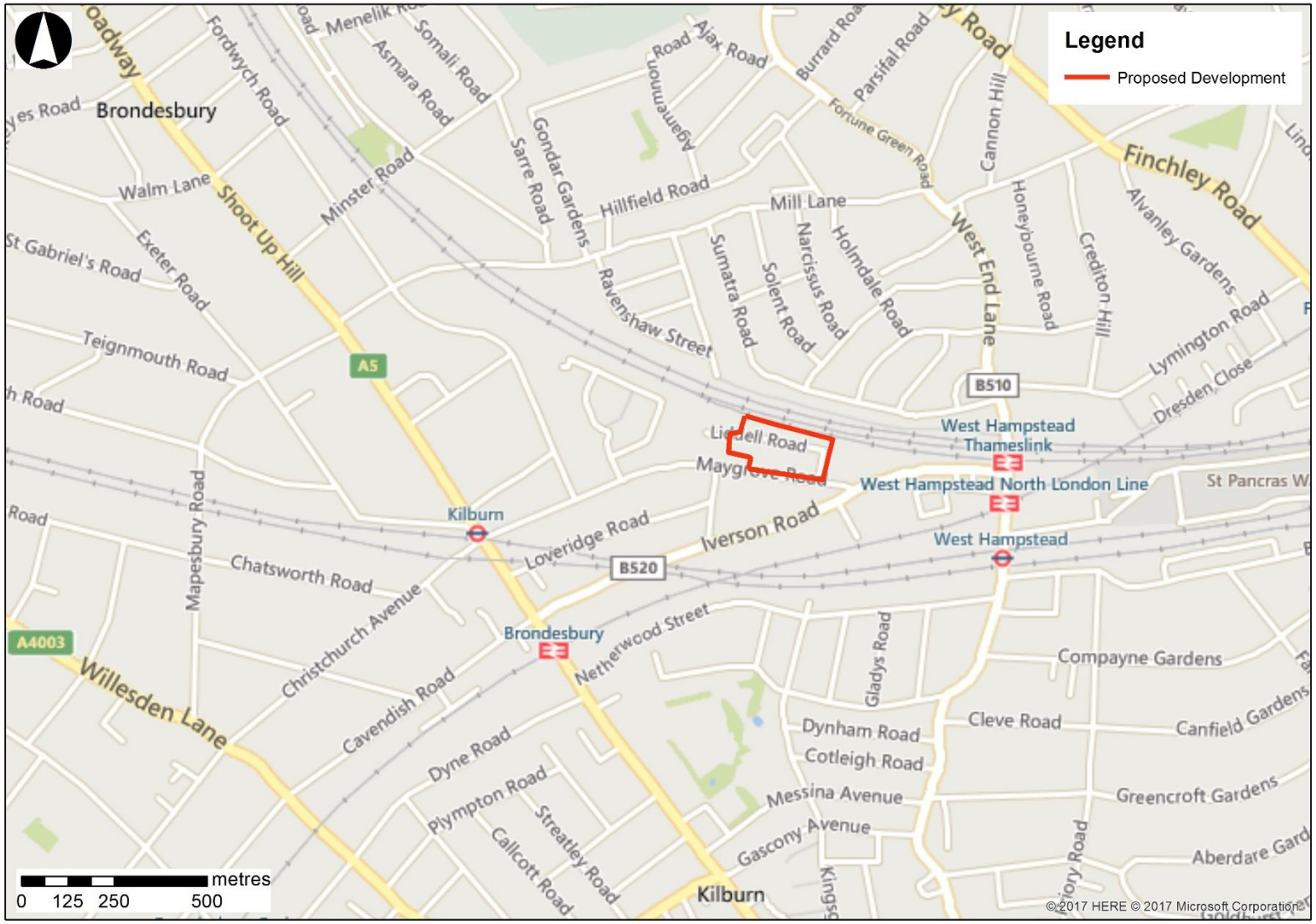
1.1 Description of the Site and the Works

The location of the Site, which covers approximately 3 hectares, is shown in Figure 1. It lies approximately 300m west of West Hampstead Thameslink station, immediately south of the Thameslink train line, immediately north of Maygrove Road and 600m east of the A5.

The demolition work will comprise the removal of a 25cm thick suspended concrete slab, measuring approximately 10m x 20m.

This study assesses the likely air quality impacts from the demolition and associated trackout from heavy duty vehicles (HDVs), focussing on emissions of particulate matter (PM_{10}).

Figure 1 Location of the Site



2 Air Quality Legislation

2.1 European Air Quality Management

In 1996 the European Commission published the Air Quality Framework Directive on ambient air quality assessment and management (96/62/EC)[1]. This Directive defined the policy framework for 12 air pollutants known to have harmful effects on human health and the environment. Limit values (*pollutant concentrations not to be exceeded by a certain date*) for each specified pollutant were set through a series of Daughter Directives, including Directive 1999/30/EC (the 1st Daughter Directive)[2] which sets limit values for nitrogen dioxide (NO_2) and particulate matter (PM_{10}) (amongst other pollutants) in ambient air.

In May 2008 the Directive 2008/50/EC[3] on ambient air quality and cleaner air for Europe came into force. This Directive consolidates the above (apart from the 4th Daughter Directive) and makes provision for extended compliance deadlines for NO_2 and PM_{10}. The Directive has been transposed into national legislation in England by the Air Quality Standards Regulations 2010[4]. The Secretary of State for the Environment has the duty of ensuring compliance with the air quality limit values.

2.2 Environment Act 1995

Part IV of the Environment Act 1995[5] places a duty on the Secretary of State for the Environment to develop, implement and maintain an air quality strategy with the aim of reducing atmospheric emissions and improving air quality. The national air quality strategy (NAQS) for England, Scotland, Wales and Northern Ireland provides the framework for ensuring compliance with air quality limit values based on a combination of international, national and local measures to reduce emissions and improve air quality. This includes the statutory duty, also under Part IV of the Environment Act 1995, for local authorities to undergo a process of local air quality management and declare Air Quality Management Areas (AQMAs) where necessary.

2.3 Air Quality Objectives and Limit Values

Air quality limit values and objectives are quality standards for clean air. Some pollutants have standards expressed as annual average concentrations due to the chronic way in which they affect health or the natural environment (i.e. effects occur (long-term) after a prolonged period of exposure to elevated concentrations)

[1] Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management
[2] Directive 1999/30/EC of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air
[3] Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe
[4] The Air Quality Standards Regulations (2010) SI 2010/1001
[5] Environment Act (1995) Chapter 25, Part IV Air Quality

and others have standards expressed as 24-hour, 1-hour or 15-minute average concentrations (short-term) due to the acute way in which they affect health or the natural environment (i.e. after a relatively short period of exposure). Some pollutants have standards expressed in terms of both long-term and short-term concentrations. Table 1 sets out the air quality standards (EU air quality limit values and national air quality objectives) for the pollutants relevant to this study (particulate matter).

Table 1 Air quality standards

Pollutant	Averaging period	Limit value/objective
Particulate matter (PM_{10})	Daily mean	50 µg/m^3, not to be exceeded more than 35 times a year (90.4th percentile)
	Annual mean	40 µg/m^3

2.4 Dust Nuisance

Dust is the generic term used to describe particulate matter in the size range 1 – 75 µm (micrometers) in diameter (British Standard document BS 6069 Part Two)[6]. Dust nuisance is the result of the perception of the soiling of surfaces by excessive rates of dust deposition. Under provisions in the Environmental Protection Act 1990[7], dust nuisance is defined as a statutory nuisance.

There are currently no standards or guidelines for dust nuisance in the UK, nor are formal dust deposition standards specified. This reflects the uncertainties in dust monitoring technology, and the highly subjective relationship between deposition events, surface soiling and the perception of such events as a nuisance. In law, complaints about excessive dust deposition would have to be investigated by the local authority and any complaint upheld for a statutory nuisance to occur. However, dust deposition is generally managed by suitable on-Site practices and mitigation rather than by the determination of statutory nuisance and/or prosecution or enforcement notice(s). An informal criterion for dust deposition of 200-250 mg/m^2/day (as a 30 day mean) is however often applied in the UK as an indicator of potential nuisance.

[6] BS 6069-2:1994, ISO 4225:1994 Characterization of air quality. Glossary (1994)
[7] Environmental Protection Act (1990) Part 3 Statutory Nuisances and Clean Air

3 Regional Policies and Guidance

3.1.1 The London Plan

The London Plan, consolidated with alterations in 2016[8], forms part of the development strategy for the Greater London area until 2036 and integrates all economic, environmental, transport and social frameworks. It has been amended to be consistent with the National Planning Policy Framework[9]. Specifically, for new development proposals, the London Plan looks at air quality by proposing the following measures:

- minimise increased exposure to existing poor air quality and make provision to address local problems of air quality such as by design solutions, buffer zones or steps to promote greater use of sustainable transport modes through travel plans;
- promote sustainable design and construction to reduce emissions from the demolition and construction of buildings following the best practice guidance;
- be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality (such as areas designated as AQMAs);
- ensure that where provision needs to be made to reduce emissions from a development, this is usually made on-site; and
- if the development requires a detailed air quality assessment and biomass boilers are included, the assessment should forecast pollutant concentrations.

The relevant policies are considered throughout this air quality assessment.

3.1.2 The Control of Dust and Emissions during Construction and Demolition SPG

The Control of Dust and Emissions during Construction and Demolition SPG[10] was published in July 2014 by the GLA to specify requirements arising from the London Plan in respect of construction and demolition. It seeks to reduce emissions of dust, PM_{10} and $PM_{2.5}$ from construction and demolition activities in London. It also aims to manage emissions of NOx from construction and demolition machinery by means of a new non-road mobile machinery (NRMM) ultra-low emissions zone (ULEZ). The requirements of the SPG in respect of demolition have been addressed in this report.

[8] Greater London Authority (2016) The London Plan: The Spatial Development Strategy for London Consolidated With Alterations Since 2011
[9] Department for communities and local government (2012) National Planning Policy Framework
[10] Greater London Authority (2014) The Control of Dust and Emissions during Construction and Demolition, Supplementary Planning Guidance

3.2 Local Policy and Guidance

3.2.1 London Borough of Camden

The London Borough of Camden's 2016 Local Plan[11], adopted in 2017 discusses air quality in several policies:

Policy A1 Managing the impact of development

"The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity."... "The factors we will consider include:" "... odour, fumes and dust;"

Policy CC4 Air Quality

"The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.

The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan.

Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.

Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan."

3.3 Other Relevant Policy and Guidance

3.3.1 Institute of Air Quality Management Dust Guidance

The Institute of Air Quality Management (IAQM) guidance[12] provides guidance to development consultants and environmental health officers on how to assess air quality impacts from construction. The IAQM guidance provides a method for classifying the significance of effect from construction activities based on the 'dust magnitude' (high, medium or low) and proximity of the Site to the closest

[11] Camden Local Plan (2017) adopted 2017, https://www.camden.gov.uk/ccm/cms-service/stream/asset/?asset_id=3655163& [accessed December 2017]
[12] IAQM (2016) Guidance on the Assessment of Dust from Demolition and Construction (Version 1.1)

receptors. The guidance recommends that once the significance of effect from construction is identified, the appropriate mitigation measures are implemented. Experience has shown that once the appropriate mitigation measures are applied in most cases the resulting dust impacts can be reduced to negligible levels.

The method outlined for dust assessment is the same as in the GLA Control of Dust and Emissions during Construction and Demolition SPG[10] and therefore the IAQM methodology has been applied in this report.

3.3.2 EPUK/IAQM Land-Use Planning & Development Control

The 2015 Land-Use Planning & Development Control guidance document[13] produced by Environmental Protection UK (EPUK) and the IAQM provides a framework for professionals operating within the planning system to provide a means of reaching sound decisions, having regard to the air quality implications of development proposals.

The document provides guidance on when air quality assessments are required by providing screening criteria regarding the size of a development, changes to traffic flows/composition energy facilities or combustion processes associated with the development.

[13] EPUK/IAQM, (2015) Land-Use Planning & Development Control: Planning for Air Quality

4 Methodology of Assessment

4.1 Scope of Assessment

The overall approach to the air quality assessment comprises:

- A review of the existing air quality conditions at, and in the vicinity of, the Site;
- An assessment of the potential changes in air quality arising from the demolition work at the Site; and
- Formulation of mitigation measures, where appropriate, to ensure any adverse effects on air quality are minimised.

4.2 Methodology of PM_{10} Baseline Assessment

Existing or baseline ambient air quality refers to the concentration of relevant substances that are already present in the environment. These are present from various sources, such as industrial processes, commercial and domestic activities, traffic and natural sources.

A desk-based review of the following data sources has been undertaken to determine baseline conditions of air quality in this assessment:

- Local authority review and assessment reports and local air quality monitoring data[14] ;
- London Air website[15];
- The Defra Local Air Quality Management website[16]; and
- The UK Air Information Resource website[17].

[14] London Borough of Camden (2015) Annual Status Report
[15] LondonAir website, https://www.londonair.org.uk/LondonAir/Default.aspx; [Accessed: December 2017]
[16] Defra Local Air Quality Management website; http://laqm.defra.gov.uk/; [Accessed: December 2017]
[17] Defra, http://uk-air.defra.gov.uk, [Accessed: December 2017]

4.3 Methodology of Construction Dust Assessment

The construction effects have been assessed using the qualitative approach described in the latest guidance[12] by the IAQM. The guidance applies to the assessment of dust from construction/demolition activities.

An 'impact' is described as a change in pollutant concentrations or dust deposition, while an 'effect' is described as the consequence of an impact. The main impacts that may arise during construction of the proposed development are:

- dust deposition, resulting in the soiling of surfaces;
- visible dust plumes;
- elevated PM_{10} concentrations as a result of dust generating activities on site; and
- an increase in NO_2 and PM_{10} concentrations due to exhaust emissions from NRMM and vehicles accessing the site.

The IAQM guidance considers the potential for dust emissions from dust-generating activities, such as demolition of existing structures, earthworks, construction of new buildings and trackout. Earthworks refer to the processes of soil stripping, ground levelling, excavation and land capping, while trackout is the transport of dust and dirt from the site onto the public road network where it may be deposited and then re-suspended by vehicles using the network. This arises when vehicles leave the site with dusty materials, which may then spill onto the road, or when they travel over muddy ground on site and then transfer dust and dirt onto the road network.

For each of these dust-generating activities, the guidance considers three separate effects:

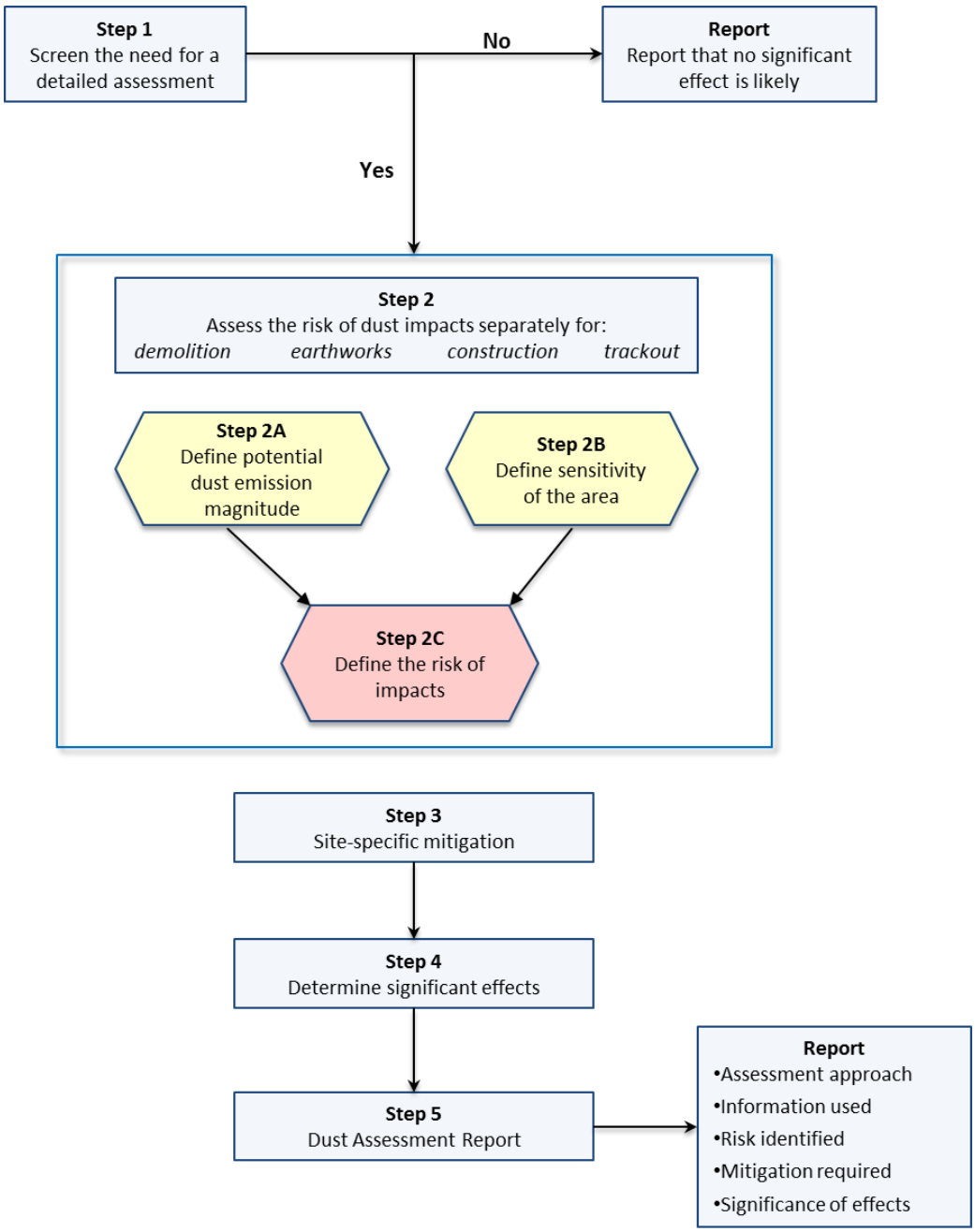
- annoyance due to dust soiling;
- harm to ecological receptors; and
- the risk of health effects due to a significant increase in PM_{10} exposure.

The receptors can be human or ecological and are selected based on their sensitivity to dust soiling and PM_{10} exposure. Sensitive receptors are defined as those properties/schools/hospitals that are likely to experience a change in pollutant concentrations and/or dust nuisance due to the construction of the proposed development.

The methodology takes into account the scale to which the above effects are likely to be generated (classed as small, medium or large), along with the levels of background PM_{10} concentrations and the distance to the closest receptor, in order to determine the sensitivity of the area. This is then taken into consideration when deriving the overall risk for the site. Suitable mitigation measures are also proposed to reduce the risk of the site.

There are five steps in the assessment process described in the IAQM guidance. These are summarised in Figure 2 and a further description is provided in the following paragraphs.

Figure 2 IAQM dust assessment methodology



Step 1: Need for Assessment

The first step is the initial screening for the need for a detailed assessment. According to the IAQM guidance, an assessment is required where there are sensitive receptors within 350m of the site boundary (*for ecological receptors that is 50m*) and/or within 50m of the route(s) used by the construction vehicles on the public highway and up to 500m from the site entrance(s).

Step 2: Assess the Risk of Dust Impacts

This step is split into three sections as follows:

- 2A. Define the potential dust emission magnitude;
- 2B. Define the sensitivity of the area; and
- 2C. Define the risk of impacts.

Each of the dust-generating activities is given a dust emission magnitude depending on the scale and nature of the works (step 2A) based on the criteria shown in Table 8 (Appendix A).

The sensitivity of the surrounding area is then determined (step 2B) for each dust effect from the above dust-generating activities, based on the proximity and number of receptors, their sensitivity to dust, the local PM_{10} background concentrations and any other site-specific factors. Table 9 (Appendix A) show the criteria for defining the sensitivity of the area to different dust effects.

The overall risk of the impacts for each activity is then determined (step 2C) prior to the application of any mitigation measures (Table 12, Appendix A) and an overall risk for the site derived.

Step 3: Determine the Site-Specific Mitigation

Once each of the activities is assigned a risk rating, appropriate mitigation measures are identified. Where the risk is negligible, no mitigation measures beyond those required by legislation are necessary.

Step 4: Determine any Significant Residual Effects

Once the risk of dust impacts has been determined and the appropriate dust mitigation measures identified, the final step is to determine whether there are any residual significant effects. The IAQM guidance notes that it is anticipated that with the implementation of effective site-specific mitigation measures, the environmental effect will not be significant in most cases.

Step 5: Prepare a Dust Assessment Report

The last step of the assessment is the preparation of a dust assessment report. This forms part of this report (see Section 6).

5 Baseline Assessment for Background PM_{10}

5.1 Local Air Quality

The Site is in the LBC AQMA which covers the whole borough. The AQMA was declared in 2002 due to exceedances of annual and 1-hour mean NO_2 concentrations, and exceedances of annual and 24-hour mean PM_{10} concentrations.

5.1.1 Local Monitoring

A review of existing local air quality conditions near the Site has been undertaken. The monitoring of PM_{10} relevant to the Site is described in the following paragraphs.

Automatic Monitoring

Automatic or continuous monitoring involves drawing air through an analyser continuously to obtain near real-time pollutant concentration data. A review of the London Air website[15] showed that there are three continuous monitors relevant to the Site. The details of the automatic monitoring sites are presented in Table 2, and their locations are shown in Figure 3.

Recent PM_{10} monitoring results from 2014 to 2016 are shown in Table 3. None of the sites, even the kerbside sites, recorded an exceedance of the PM_{10} annual mean air quality objective. An exceedance is defined as an annual mean greater than 40µg/m^3.

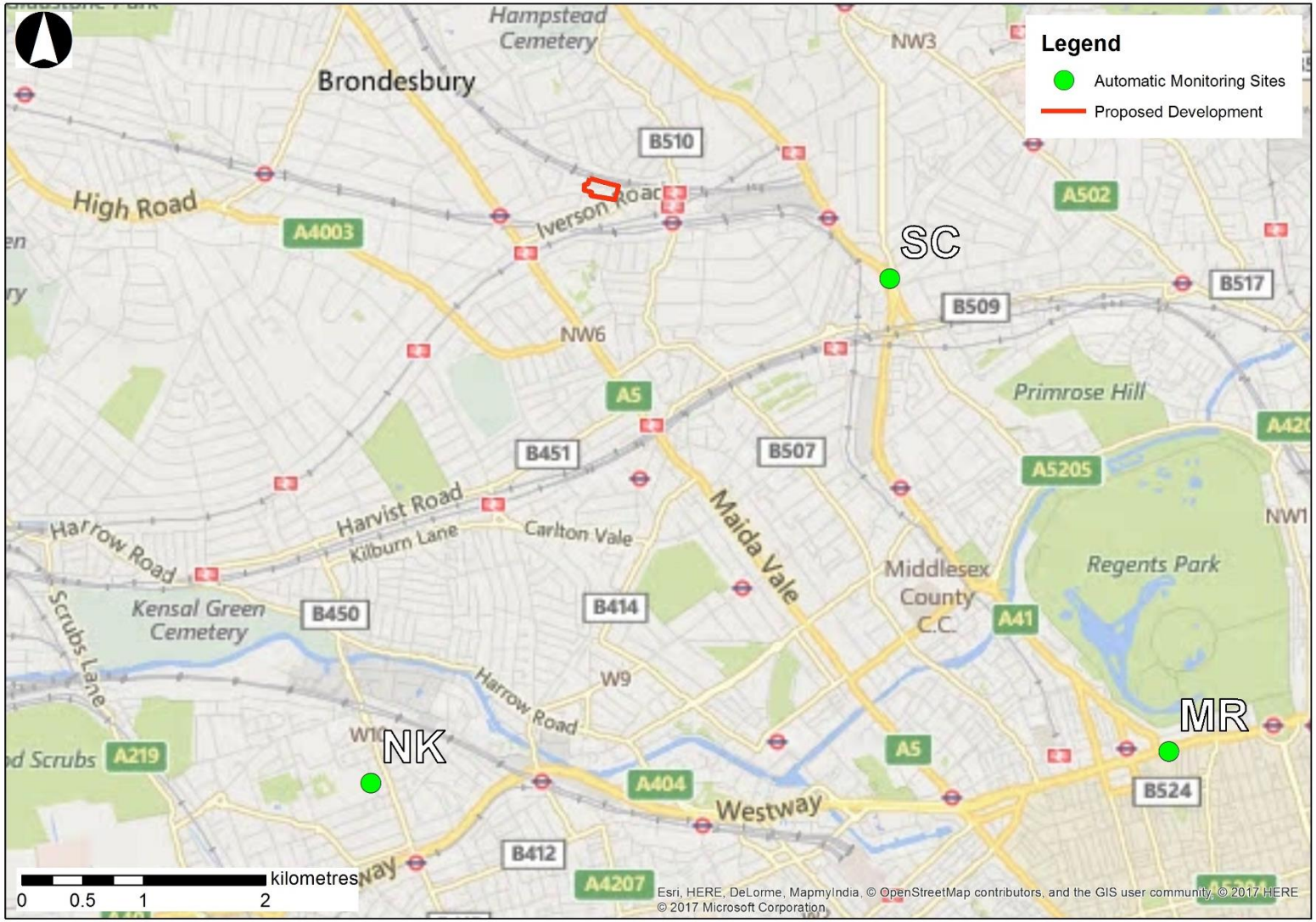
Table 2 Details of automatic monitoring sites

Site ID	Site location	OS Grid Reference		Site type	Distance to kerb of nearest road (m)
		X	Y		
Royal Borough of Kensington and Chelsea					
NK	North Ken	524045	181752	Urban background	N/A
London Borough of Camden					
SC	Swiss Cottage	526633	184392	Kerbside	1.5
London Borough of Westminster					
MR	Marylebone Road	528121	182015	Kerbside	1.5

Table 3 Automatic annual mean NO_2 monitoring results 2013-2016

Site ID	Site location	PM_{10} annual mean concentration ($\mu g/m^3$)		
		2014	2015	2016
NK	North Kensington	16	16	16
SC	Swiss Cottage	11	20	20
MR	Marylebone Road	31	30	29

Figure 3 Location of automatic monitoring sites



5.1.2 Background Concentrations

The Defra website[17] includes estimated background pollutant concentrations for PM_{10} for each 1km by 1km OS grid square. Background pollutant concentrations for 2016 have been obtained for the grid squares surrounding the Site and are shown in Table 4. Defra background pollutant concentrations are below the air quality objectives for annual mean PM_{10} for all OS grid squares. A comparison of the average Defra modelled and the actual monitored urban background PM_{10} concentrations is presented in Table 4.

Table 4 Defra's estimated 2016 background concentrations of PM_{10}

OS Grid Square		**Annual Mean Concentration ($\mu g/m^3$)**
X	**Y**	**PM_{10}**
524500	184500	18.5
525500	184500	17.9
524500	185500	17.2
525500	185500	17.9
Average		**17.9**

Urban background monitoring site NK is 5.1km to the south-west of the Site and is in an area which is representative of the land use type at the Site. The background concentrations at NK are similar to, but lower than, the Defra mapped PM_{10} concentrations in 2016 (Table 5). Therefore, the Defra modelled concentrations have been used as representative of background concentrations in this area.

Table 5 Comparison between Defra predicted PM_{10} concentrations and monitored urban background PM_{10}

OS Grid Square		**Defra Mapped 2016**	**NK monitored, 2016**	**Difference (%)**
X	**Y**	**PM_{10}**	**PM_{10}**	
524500	181500	17.9	16	2.4%

6 Construction Dust Assessment

The IAQM guidance takes into consideration four dust-generating activities: demolition, earthworks, construction and trackout, as discussed in Section 4.3.

Sensitive Receptors

There are less than 100 sensitive receptors within 20m of the site boundary (Figure 4); these are mainly residential dwellings. As such, their sensitivity to dust soiling and PM_{10} exposure have been classified as high and low respectively according to the IAQM guidance. There are no ecological receptors within 50m of the Site.

Dust Emission Magnitude

Each dust-generating activity has been assigned a dust emission magnitude as shown in Table 8. There will be no construction or earthworks activities taking place therefore these activities are scoped out.

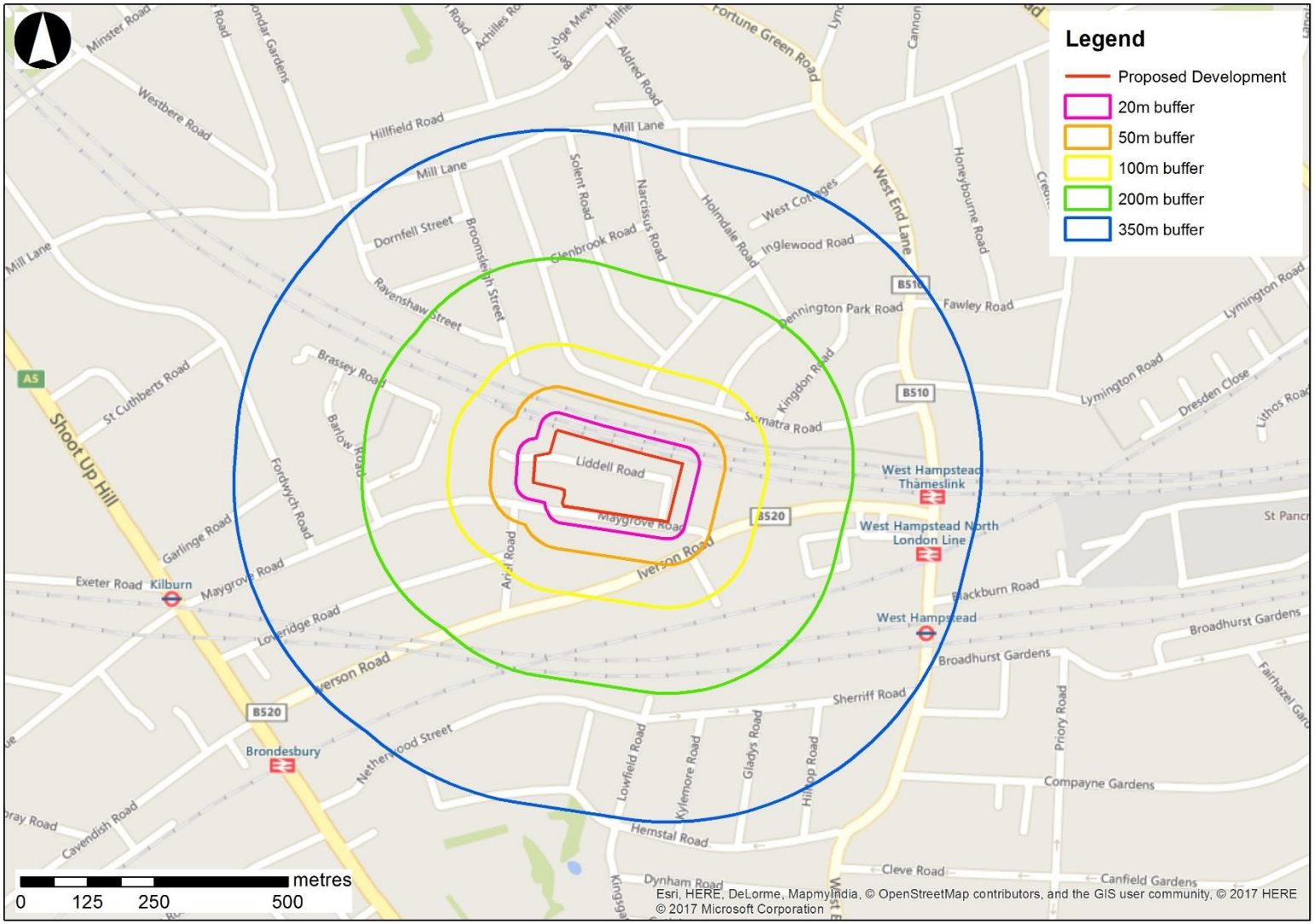
Table 6 Dust emission magnitude for construction activities

Activity	Dust emission magnitude	Reasoning
Demolition	Small	Works are <10m above ground and small total building volume.
Trackout	Small	Assumption of less than 10 HDV trips in any one day – there is likely to be one vehicle movement to remove the material and vehicle movements to deliver the demolition machinery to site.

Sensitivity of the Area

The sensitivity of the area to dust soiling has been assigned as high, due to the presence of sensitive receptors within 20m of dust generating activities. The sensitivity of the area to human health impacts has been assigned as low, due to the background PM_{10} concentrations in the area (17.9µg/m^3) and the presence of sensitive receptors within 20m of any dust generating activity.

Figure 4 Buffers for construction dust assessment



Risk of Impacts

Taking into consideration the dust emission magnitude and the sensitivity of the area, the site has been classified as medium risk to dust soiling and negligible risk to human health for demolition and low risk to dust soiling and negligible risk to dust soiling for track out activities (Table 7). The dust emitted by the activities discussed can be greatly reduced or eliminated by applying the site-specific mitigation measures for *medium* risk sites according to the IAQM guidance. The measures described in Section 7.1, if applied, will reduce the impact to negligible and the effect to not significant.

Table 7 Summary dust risk table prior to mitigation

Activity	**Dust soiling**	**Human health**
Demolition	Medium risk	Negligible
Trackout	Low risk	Negligible

7 Mitigation

7.1 Construction Dust Mitigation

The **Construction Management Plan** for the demolition of the concrete slab should include the following *medium* risk mitigation measures are included to ensure best practice is followed for the on-site activities.

After application of these mitigation measures the effect of the demolition and trackout on sensitive receptors will not be significant.

General

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information (if applicable).

Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.

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.
- 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.

Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as 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 a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.

Operating Vehicle/Machinery and Sustainable Travel

- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable.
- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste Management

- Avoid bonfires and burning of waste materials.

7.1.1 Specific Measures

Measures Specific to Demolition

- Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

Measures Specific to Trackout

- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites (if applicable) are covered to prevent escape of materials during transport.

8 Summary

This report presents the air quality assessment for the demolition of a concrete slab at the Site at 32-33 Liddell Road, London, NW6 2EW, in the LBC. A review of current legislation and planning policy and a PM_{10} baseline assessment describing the current air quality conditions in the vicinity of the Site have been undertaken. There followed an assessment of relevant construction effects.

The Site is located in the London Borough of Camden AQMA. Local PM_{10} monitoring data shows that PM_{10} concentrations do not exceed the air quality objectives in 2016. Average background concentrations in the area are well below the air quality standard for PM_{10}.

Emissions of construction dust have been assessed using the qualitative approach described in the IAQM guidance and it was concluded there is a *medium risk* from the dust-generating activities on site. With the appropriate best practice mitigation measures in place there are likely to be no significant effects from the construction.

Appendix A

Tables Supporting the Construction Dust Assessment Methodology

Table 8: Dust emission magnitude

Dust emission magnitude		
Small	**Medium**	**Large**
Demolition		
• total building volume <20,000m^3 • construction material with low potential for dust release (e.g. metal cladding or timber) • demolition activities <10m above ground • demolition during wetter months	• total building volume 20,000 - 50,000m^3 • potentially dusty construction material • demolition activities 10 - 20m above ground level	• total building volume >50,000m^3 • potentially dusty construction material (e.g. concrete) • on-site crushing and screening • demolition activities >20m above ground level
Earthworks		
• total site area <2,500m^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 • total material moved <10,000 tonnes • earthworks during wetter months	• total site area 2,500m^2 - 10,000m^2 • moderately dusty soil type (e.g. silt) • 5 – 10 heavy earth moving vehicles active at any one time • formation of bunds 4 - 8m in height • total material moved 20,000 - 100,000 tonnes	• total site area >10,000m^2 • potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • >10 heavy earth moving vehicles active at any one time • formation of bunds >8m in height • total material moved >100,000 tonnes
Construction		
• total building volume <25,000 m^3 • construction material with low potential for dust release (e.g. metal cladding or timber)	• total building volume 25,000 - 100,000m^3 • potentially dusty construction material (e.g. concrete) • on-site concrete batching	• total building volume >100,000m^3 • on-site concrete batching • sandblasting
Trackout		
• <10 HDV (>3.5t) outward movements in any one day • surface material with low potential for dust release • unpaved road length <50m	• 10 – 50 HDV (>3.5t) outward movements in any one day • moderately dusty surface material (e.g. high clay content) • unpaved road length 50 – 100m;	• >50 HDV (>3.5t) outward movements in any one day • potentially dusty surface material (e.g. high clay content) • unpaved road length >100m

Table 9: Sensitivity of the area to dust soiling effects

Receptor sensitivity	Number of receptors	Distance from the source (m)			
		< 20	< 50	< 100	< 350
High	> 100	High	High	Medium	Low
	10 – 100	High	Medium	Low	Low
	< 10	Medium	Low	Low	Low
Medium	> 1	Medium	Low	Low	Low
Low	> 1	Low	Low	Low	Low

Table 10: Sensitivity of area to human impacts

Background PM_{10} concentrations (annual mean)	Number of receptors	Distance from the source (m)				
		< 20	< 50	< 100	< 200	< 350
High receptor sensitivity						
> 32µg/m^3	> 100	High	High	High	Medium	Low
	10 – 100			Medium	Low	
	< 10		Medium	Low		
28 – 32µg/m^3	> 100	High	High	Medium	Low	Low
	10 – 100		Medium	Low		
	< 10					
24 – 28µg/m^3	> 100	High	Medium	Low	Low	Low
	10 – 100					
	< 10	Medium	Low			
< 24µg/m^3	> 100	Medium	Low	Low	Low	Low
	10 – 100	Low				
	< 10					
Medium receptor sensitivity						
> 32µg/m^3	> 10	High	Medium	Low	Low	Low
	< 10	Medium	Low			
28 – 32µg/m^3	>10	Medium	Low	Low	Low	Low
	1 -10	Low				
24 – 28µg/m^3	>10	Low	Low	Low	Low	Low
	1 -10					
< 24µg/m^3	>10	Low	Low	Low	Low	Low
	1 -10					
Low receptor sensitivity						
–	> 1	Low	Low	Low	Low	Low

Table 11: Sensitivity of the area to ecological impact

Receptor sensitivity	Distance from the source (m)	
	< 20	< 50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Table 12: Risk of dust impacts

Sensitivity of area	Dust emission magnitude		
	Large	Medium	Small
Demolition			
High	High risk site	Medium risk site	Medium risk site
Medium	High risk site	Medium risk site	Low risk site
Low	Medium risk site	Low risk site	Negligible
Earthworks			
High	High risk site	Medium risk site	Low risk site
Medium	Medium risk site	Medium risk site	Low risk site
Low	Low risk site	Low risk site	Negligible
Construction			
High	High risk site	Medium risk site	Low risk site
Medium	Medium risk site	Medium risk site	Low risk site
Low	Low risk site	Low risk site	Negligible
Trackout			
High	High risk site	Medium risk site	Low risk site
Medium	Medium risk site	Low risk site	Negligible
Low	Low risk site	Low risk site	Negligible