

**Old Town, Newbury**

**Prepared for  
Lochailort Newbury Ltd**

**by**

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Limited**

**August 2024**



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**SMA Ref: 6377/AQA**

**Issue Status: 03**

<b>DOCUMENT CONTROL</b>			
<b>Project</b>	<b>Old Town, Newbury</b>		
<b>Job No.</b>	<b>6377</b>		
<b>Document Title</b>	<b>Air Quality Assessment</b>		
<b>File Location</b>	N:\Admin Project\6300 to 6399\6377 - Kennet Centre, Newbury\Reports\Air Quality\6377 - Air Quality Assessment - 04.docx		
<b>Prepared by</b>	Jason Mills	<b>Date</b>	26/01/2021
<b>Reviewed by</b>	Stewart Andrews	<b>Date</b>	23/05/2024
<b>Approved by</b>	Mark Smyth	<b>Date</b>	23/05/2024
<b>Document Issue</b>	<b>Description / Changes</b>	<b>Revised by</b>	<b>Date</b>
DRAFT	Internal review and Client comment	JPM	12/02/2021
ISSUE	Clients Comments Addressed	SWA	25/02/2021
03	Layout updated, Base and Future Year updated	JPM	25/04/2024
04	Minor changes to road traffic flows	JPM	06/08/2024



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<b>Appendix 2</b>	<b>EIA Screening Opinion</b>
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## ACRONYMS AND ABBREVIATIONS

ATC	Automated Traffic Count
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
DEV	Development generated traffic
DEFRA	Department for Environment Food and Rural Affairs
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
ha	Hectares - a unit of measure equal to 2.471 acres or 10,000 square metres
gkm <sup>-1</sup>	grams per kilometre
HGV	Heavy Goods Vehicle
MCC	Manual Classified Traffic Count
Monin-Obukhov length	describes the effects of buoyancy on turbulent flows, particularly in the lower tenth of the atmospheric boundary layer
ms <sup>-1</sup>	wind speed in meters per second
NAQO	National Air Quality Objectives (2002)
NSCA	National Society for Clean Air
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Oxides of Nitrogen
NTM	National Transport Model
PM <sub>10</sub>	Particulate matter with an aerodynamic diameter less than 10 microns
PM <sub>2.5</sub>	Particulate matter with an aerodynamic diameter less than 2.5 microns
SMA	Stuart Michael Associates Limited
TEMPRO	Trip End Model Presentation PROgram
Track Out	The movement of dust and dirt from a construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network
µgm <sup>-3</sup>	Micrograms per cubic meter
WBC	West Berkshire Council



## 1.0 INTRODUCTION

- 1.1 Stuart Michael Associates (SMA), Consulting Engineers, has been appointed by Lochailort Newbury Ltd. (the Applicant) to prepare an Air Quality Assessment in support of a full planning application for the phased redevelopment of the Kennet Centre comprising the partial demolition of existing buildings, flexible-use commercial space, headquarters office building, 317 dwellings plus residents' ancillary facilities, access, car parking and cycle parking, landscaping & open space, sustainable energy installations, and associated works. Refer to **Figure 1.1** for the site location which is indicated by the **red** line.



**Figure 1.1: Site Location Plan**

### **Development Site**

- 1.2 The site is located in the centre of Newbury, on land currently occupied by the Kennet Centre. The site is bound by Cheap Street to the east, Market Street to the south and Bartholomew Street to the west..
- 1.3 Government policy seeks to encourage people to use more sustainable means of transport by locating new development in areas which are accessible by means other than the car. The site benefits from being in Newbury town centre and is



within walking/cycling distance of schools, local facilities and amenities. The proposed development will include a Travel Plan with its principle aim being to reduce single car occupancy trips to and from the site.

### **Pre-Application Consultation**

- 1.4 A pre-application consultation meeting was held with West Berkshire Council on 27th July 2020 where as part of wide-ranging and overwhelmingly positive feedback from the Local Planning Authority, the need for the submission of an Air Quality Assessment was confirmed.

### **Assessment Methodology**

- 1.5 This report addresses the effects of air pollutant emissions from road traffic using the adjacent roads, and the emissions associated with the construction of the Proposed Development.
- 1.6 The report has been split into two parts; the first part assesses the impact of the development on surrounding sensitive receptors and the second part assesses the constraints on the development (i.e. how the existing environment will impact on the development).
- 1.7 Road traffic flows on the local highway network have been obtained from permanent automatic traffic counters (ATC), from the Transport Consultants (Waterman Infrastructure & Environment Ltd) and publicly available traffic data. Where necessary, the collected traffic flows have been growthed to the assessment years using TEMPRO and adjusted using NTM.
- 1.8 The dispersion modelling software ADMS Roads has been used to determine the concentrations of pollutants at the development site and assess the likely changes in the concentrations of pollutants. Background concentrations of pollutants have been obtained from the Department for Environment Food and Rural Affairs (DEFRA) website.
- 1.9 Construction dust impacts on local receptors have been assessed using the method detailed in the Institute of Air Quality Management (IAQM) publication "*Guidance on the assessment of dust from demolition and construction*" (2024).
- 1.10 The principles in the IAQM document Land Use Planning & Development Control: Planning for Air Quality January 2017 (v1.2) have also been considered.



## Report Outline

- 1.11 This report assesses the overall levels of Oxides of Nitrogen (NO<sub>x</sub>), Nitrogen Dioxide (NO<sub>2</sub>) and Particulate Matter with an aerodynamic diameter of less than 10 microns (PM<sub>10</sub>) and less than 2.5 microns (PM<sub>2.5</sub>) in the vicinity of the development site. The base year for the development is 2024 and the future year of assessment is 2031. The assessment years are in line with the Transport Assessment for the proposed development. Verification has been undertaken for 2019.





## 2.0 LEGISLATION AND PLANNING POLICY CONTEXT

### Introduction

- 2.1 Poor air quality is the largest environmental risk to public health. Over recent years, UK air quality has improved significantly as a result of concerted action. Total UK emissions of nitrogen oxides (NO<sub>x</sub>) have fallen by 77% since 1970. There has not been much change since 2020 due to the Covid-19 restriction which continued to reduce traffic on many roads in early 2021. Between 1990 and 2021 there was an average reduction of 4% which demonstrates that there is a downward trend in NO<sub>x</sub> emissions in the UK\*.
- 2.2 In the UK, emissions from road transport account for a substantial proportion of national air pollutant emissions. Road transport accounted for 31% of national carbon dioxide (CO<sub>2</sub>) emissions in 2020 even though emissions fell by 3.1% between 2000 and 2018. Emissions from road transport of nitrogen dioxide (NO<sub>2</sub>) and particulate matter smaller than 10µm in diameter (PM<sub>10</sub>) also fell between 2000 and 2018†. Total‡ pollutant emissions from cars peaked in 1990/91 and declined to 2009. *“Average CO<sub>2</sub> emissions from cars registered for the first time were steadily falling since 2003, but began to rise from mid-2016 through to 2019. This increase was broadly due to a shift towards registering larger cars (which have higher emissions) and increases in emissions for popular petrol car models. The introduction of WLTP in September 2018 caused a marked increase in average CO<sub>2</sub> emissions. However, changes from September 2018 are not directly comparable with previous periods”§.*
- 2.3 Private car ownership has grown from 24.4 million in 2000 to 38.7 million at the end of 2019. At the end of December 2022, there were 40.7 million licensed vehicles in the UK, which was a 1.0% increase compared to the end of December 2021, and a 2.3% increase compared to the end of December 2020.
- 2.4 Of the licensed vehicles using the highway network, cars accounted for 81.5%, light goods vehicles (<3.5t) 11.3%, HGV's (>3.5t) 1.3%, motorcycles 3.5%, Bus's

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\* DEFRA National Statistics Release: Emissions of air pollutants in the UK, 1970 to 2021 – Statistical Release: Updated 22<sup>nd</sup> February 2023

† Department for Transport Statistics: Road Traffic Estimates: Great Britain 2021 – Released 28<sup>th</sup> September 2022

‡

§ Department for Transport (DfT), Vehicle licensing Statistics: Annual 2019 – Published 30<sup>th</sup> April 2020



and Coaches 0.4%, and “other vehicles” 2.1% of all motor vehicle traffic at the end of 2022\*\*.

- 2.5 The percentage of different fuel type usage for private cars has significantly changed since the mid-1990s. At the end of 2022 there were 11.7 million diesel cars, accounting for 35% of the total, up from 11% in 1997 but down from a peak of 40% in 2016, 2017 and 2018. Alternative fuel vehicles which include gas, electricity, or a combination such as gas bi-fuel and hybrid electric were up to 2.5 million by the end of 2022.
- 2.6 At the end of December 2022, there were 1.103 million licensed Ultra-Low Emission Vehicles (ULEVs) in the UK. This was an increase of 49% compared to the end of 2021, when there were 0.739 million.
- 2.7 During 2022, 391,000 new ULEVs were registered for the first time, which is a 22% increase when compared with the previous year. This amounted to 18% of all new vehicle registrations in 2022, up from 14% in 2021††.

### **National Air Quality Strategy**

- 2.8 In 1997 the United Kingdom National Air Quality Strategy (NAQS) was published and for the first time. The document set out an analysis of the magnitude and potential health and environmental problems associated with, amongst other things, air pollutant emissions resulting from road traffic.
- 2.9 It proposed a schedule of air quality objectives which were to be met in the years up to 2005. In setting these objectives, health and socio-economic cost-benefit factors were considered, together with the practical and pragmatic aspects of whether targets would be achievable. Whilst it was identified in the NAQS that the objectives for benzene, 1,3-butadiene, lead (Pb) and carbon monoxide (CO) could be achieved as a result of improvement measures already put in place, complying with targets for NO<sub>2</sub> and PM<sub>10</sub> would be more difficult.
- 2.10 Considering the additional measures that would have to be introduced to counter these apparent shortfalls, the Government voiced the following thought:
- “Changes in planning and transport policies (are needed) which would reduce the need to travel and reliance on the car”.* Regarding the necessity for encouraging

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\*\* DfT Statistics - Vehicle Licensing Statistics: Annual 2022

†† DfT Statistics - Vehicle Licensing Statistics: Annual 2022)



a shift away from private car usage, the Strategy commented, in terms of the new package approach to transport funding:

“As a general rule, traffic demand management and restraint measures should be included and this, together with proposals to promote and enhance other modes of transport, should aim to achieve modal shifts away from the private car.”

- 2.11 The Environment Act 1995 sections 82-84 requires that Local Authorities shall carry out reviews of air quality within their administrative areas and, where it is assessed that the air quality objectives may not be complied with in the future, an Air Quality Management Area (AQMA) must be declared. The Local Authority must then formulate an Action Plan, setting out the measures that will be employed to achieve compliance with the objectives.
- 2.12 A review of the UK Air Quality Strategy was undertaken in 1998 and a consultation document was published in January 1999 which outlined proposals for amending the Strategy. In August 1999, in response to the consultation, the Government then published a draft Air Quality Strategy for England, Scotland, Wales and Northern Ireland. The Air Quality Regulations (England) 2000 were enacted in April 2000, and the Air Quality (England) (Amendment) Regulations 2002 gives legal force to the air quality standards set out in the Strategy. A new strategy was released in July 2007 with various amendments to the air quality objectives. The proposals, in brief, consisted of recommendations to adopt the provisions of the EU Air Quality Daughter Directives. The National Air Quality Objectives (NAQO's) included in the Regulations are set out in Appendix 2.
- 2.13 Given the significant influence that motor vehicle exhausts exert on air quality in the UK and the apparent links between elevated levels of certain air pollutants and premature mortality, current and emerging Government policy is geared towards several essential objectives, which are:
- continued action to reduce pollutant emissions from vehicles across the EU, which can be exemplified by the plethora of Directives concerning limitation of motor vehicle emissions since the 1970's and specific targeted initiatives such as the Auto-Oil Study programme;



- concerted action at a National level to reduce private car trips in urban and inter-urban uses and encourage use of alternative forms of transportation;
- action at a local level to manage transportation and air quality in order to reduce the number of car trips in urban areas specifically and to aim for compliance with the NAQS by the appointed dates; and
- to ensure that Local Authorities in the execution of their development control responsibilities take account of the consequent air quality impacts.

2.14 It is evident that continued growth in private car ownership and usage will result in further deterioration of air quality in urban areas and increasing emissions of greenhouse gases. Whilst current technological improvements will extend the reduction in emissions, additional measures will be required in order to prevent re-growth of emissions, both to meet ambient air quality targets in urban areas and to offer an alternative to the car for urban journeys. Consequently, where new development can be in close proximity to public transport and local services, a contribution to the UK's target of reducing emissions will have been made.

2.15 Levels of lead (Pb) and sulphur dioxide (SO<sub>2</sub>) are also controlled by the NAQO. Lead levels have reduced significantly since its reduced use as a fuel additive, and the abolition of four-star petrol in January 2000 means that the amount of Pb in petrol is reduced to a negligible level. SO<sub>2</sub> is predominantly associated with emissions from industrial processes and when assessing the effects of traffic, neither SO<sub>2</sub> nor Pb need be assessed.

### **National Planning Policy Framework**

2.16 Paragraphs 192 to 194 of the NPPF (NPPF – December 2023 and Draft Consultation Document August 2024) is considered relevant to this assessment:

“192. 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.

193. Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.

194. The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.”.

### **Planning Practice Guidance (PPG)**

2.17 West Berkshire Council have confirmed that the proposed redevelopment of the Kennet Centre is not considered to require an Environmental Impact Assessment. A copy of the Councils confirmation letter is provided at **Appendix 2**. However guidance provided by the Planning Practice Guidance (PPG) note regarding the policy governing Environmental Impact Assessment of air quality is useful. The PPG states:

2.18 “Action to manage and improve air quality is largely driven by EU legislation. The 2008 Ambient Air Quality Directive sets legally binding limits for concentrations in outdoor air of major air pollutants that impact public health.....”

### **The Environment Act 2021**

2.19 The Environment Act was passed into UK law in November 2021 with the aim of protecting and enhancing the environment for future generations. The Act



establishes the Office for Environmental Protection (OEP), the new green watchdog for England (and Northern Ireland), which will be responsible for 'holding to account' government and public bodies on their environmental obligations.

2.20 Amongst other things, the Act introduced a duty on the government to bring forward at least two air quality targets by October 2022, which were set in secondary legislation. The first aim was to reduce the annual average level of fine particulate matter (PM<sub>2.5</sub>) in ambient air. The second was a long-term target (set a minimum of 15 years in the future).

2.21 The Environment Improvement Plan 2023 (First revision of the 25 Year Environment Plan) reiterated the ambition to reduce PM<sub>2.5</sub> concentrations in the future. The Plan sets the following long-term and interim targets.

Long-term targets;

- *“By the end of 2040, we will achieve a maximum Annual Mean Concentration Target (AMCT) of 10 micrograms of PM<sub>2.5</sub> or below per cubic metre (µg<sup>m-3</sup>); and*
- *By the end of 2040, we will reduce population exposure to PM<sub>2.5</sub> by 35% compared to 2018 levels”.*

Interim targets:

“By the end of January 2028:

- *The highest annual mean concentration in the most recent full calendar year must not exceed 12 µg<sup>m-3</sup> of PM<sub>2.5</sub>.*

2.22 Compared to 2018, the reduction in population exposure to PM<sub>2.5</sub> in the most recent full calendar year must be 22% or greater”.

### **Additional Guidance**

2.23 The Local Air Quality Management Technical Guidance LAQM.TG(22) (August 2022 update) is designed to support local authorities in carrying out their duties under the Environment Act 1995. These duties require local authorities to periodically review and assess air quality in their area.

2.24 The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (AQS, 2007) sets out air quality objectives and policy options to further improve



air quality in the UK. It provides options which are intended to provide important benefits to UK Air Quality. The UK Government released an Air Quality Plan for tackling roadside NO<sub>2</sub> concentrations in 2017.

- 2.25 The effects of dust generation from construction will be assessed in accordance with the methodology presented in the Institute of Air Quality Management (IAQM) publication “*Guidance on the assessment of dust from demolition and construction*” (2017).

### **Local Plan or Local Development Framework**

#### West Berkshire Council

- 2.26 At the time of undertaking this AQ assessment, WBC current Local Plan is in the process of being reviewed to cover the period up to 2039. A new Policy which specifically covers Air Quality is proposed under Development Management Policies, Policy 8, and states:

“Policy DM8

Air Quality

Development will be required to maintain, and where possible, improve air quality and reduce exposure to areas of poor air quality. Development will be supported where it does not lead to adverse effects on health or the environment either from the development itself or cumulatively.

Taking account of the end-use and nature of the area and application, the proposal should demonstrate that the development satisfies the following criteria:

- a. a. It has no adverse effect on air quality in an Air Quality Management Area (AQMA);
- b. It will not lead to the declaration of a new AQMA;
- c. It will not interfere with the implementation of current Air Quality Action Plans (AQAP);
- d. It is not in proximity to a source of air pollution which could present a significant risk to human health;



- e. It does not expose occupiers who are particularly sensitive to air pollution, such as those in schools, health care establishments or housing for older people;
- f. It is not in proximity to a source of air pollution which could present a likely significant effect/ risk on/to the qualifying features of a site designated for its wildlife habitat and species importance;
- g. It will minimise the impact on air quality, both during the construction process and lifetime of the completed development; and
- h. It provides opportunities to improve air quality, reduce airborne emissions, and where necessary mitigates impacts, including measures such as the provision and enhancement of green infrastructure, active travel, and other traffic and travel management.

An Air Quality Assessment (AQA) carried out in accordance with the relevant national standards and guidance will be required by the Council where development proposals meet one of the following criteria:

- i. The development has the potential to impact on air quality within an AQMA, either on its own or having regard to cumulative planned developments;
- ii. The development has the potential to impact on air quality where there are concerns that an air quality objective might be exceeded, either on its own or having regard to cumulative planned developments;
- iii. The development involves more than 100 parking spaces outside an AQMA, or 50 parking spaces within or close to an AQMA;
- iv. The development has the potential to increase heavy goods vehicle movements on a busy (greater than 10,000 Annual Average Daily Traffic (AADT) movements) or congested road near to sensitive receptors;
- v. Development involving larger scale energy/heating plant with the potential to impact on sensitive receptors e.g. solid fuel plant and short term operating reserve sites; or





- vi. Development introducing a new sensitive receptor within an AQMA or in close proximity to an AQMA.

A Habitats Regulations Assessment, will be required by the Council to establish whether a development could present a likely significant effect/ risk on/to the qualifying features of a site designated for its international importance for biodiversity.”

2.27 However, until the Local Plan review has been concluded and the new Local Plan adopted, the following documents and saved Policies are current.

2.28 The relevant local policy document for West Berkshire is presented in the Local Plan, which is part of the Core Strategy Development Plan Document (DPD). The Core Strategy (adopted on 16 July 2012) forms part of the Local Plan for the district.

2.29 The Core Strategy is a development plan document which sets out WBC’s overall planning strategy to 2026. It explains its vision for the area, and how it will be delivered. It also provides a framework for more detailed policies which will be contained in future development plan documents prepared as part of the Local Plan.

2.30 Local policy for air quality is part of the saved policies from the West Berkshire District Local Plan (1991-2006) - Environmental Nuisance and Pollution Control (OVS. 5). The Local Planning Authority needs to be satisfied that proposals for development will not have significant adverse environmental impacts.

- Saved Local Plan Policy LD3 states: “Development proposals will only be permitted where they do not give rise to an unacceptable impact on the environment, including serious harm to the character or appearance of an area, or the amenities of neighbouring land uses”.
- Saved Local Plan Policy EN2 seeks protection from environmental nuisance. “Development should not give rise to unacceptable levels of noise, smell, dust, fumes, light or noxious emissions affecting areas beyond the site boundary, or to unacceptable levels of air or water pollution. In addition, uses sensitive to disturbance such as new houses, schools or hospitals should not be located in areas already subject to unacceptable levels of environmental nuisance. In areas affected by high



noise levels, developments should be designed to minimise the nuisance which may be caused to future occupiers.”



### **3.0 METHODOLOGY AND ASSESSMENT CRITERIA**

#### **Assessment of the Prevailing Air Quality**

3.1 This section summarises the methodology used to consider whether there are “Significant” air pollution impacts on sensitive receptors or constraints on development. In order to determine the extent to which air quality issues will affect the sensitive receptors, the study has considered the following:

- Air quality measurements carried out in West Berkshire Council, including the latest Annual Status Report which was submitted to DEFRA in June 2023 (which are in the public domain);
- The Review and Assessment of air quality carried out by WBC for the area, as submitted to the Department for the Environment, Food and Rural Affairs (DEFRA);
- Predictions of air pollutant concentrations within and adjacent to the site, utilising the ADMS Roads (version 5.0.1) dispersion modelling program.

#### **Assessment Criteria**

3.2 The NAQO levels are derived from air quality standards set to protect health. The objectives address social and economic factors as well as health standards.

3.3 For the purposes of this development proposal, the NAQO will form the basis of the air quality assessment. The NAQO levels are based on an assessment of the effects of each pollutant on public health. Therefore, they are a good indicator in assessing whether the air quality in the vicinity of a road is likely to be detrimental to human health.

3.4 The effects of dust generation from construction have been undertaken following the methodology presented in the Institute of Air Quality Management (IAQM) publication “Guidance on the assessment of dust from demolition and construction” (2024).

3.5 In determining whether air pollutant levels may constrain development, the results of the study have been compared against the acceptability criteria.



## **Impact Magnitude and Impact Descriptors (Significance) – Air Quality Assessments**

### Construction Phase

3.6 During the construction phase, there will be several activities undertaken that have the potential to generate and/or re-suspend dust and PM<sub>10</sub>. At the time of assessment the exact activities to be undertaken during construction are unknown. However, in order to evaluate the magnitude and extent of potential adverse impacts likely to result from the proposed development, the following construction activities have therefore been assumed:

- site clearance and preparation;
- storage of materials;
- laying of hard surfaces;
- construction of proposed dwellings; and
- vehicle movements to and from the Site.

3.7 The magnitude of the potential impacts of a construction site on air quality is mainly determined by its size, the range of activities undertaken across the site, proximity to sensitive receptors, complexity of terrain and any barriers between sources and receptors.

3.8 A qualitative assessment of the potential impacts during construction has been undertaken using information in guidance documents produced by IAQM.

3.9 According to this guidance; a human receptor refers to any location where a person may experience the annoyance effects of airborne dust or dust soiling, or exposure to PM<sub>10</sub> over a time period relevant to the air quality objectives. In terms of annoyance effects, this will most commonly relate to residential dwellings and schools.

3.10 Activities on construction sites can be divided into four types to reflect their different potential impacts, with the potential for dust emissions to be assessed only for each activity taking place:

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



3.11 The assessment methodology considers three separate dust effects:

- annoyance due to soiling;
- harm to ecological receptors; and
- the risk of health effects due to a significant increase in exposure to PM<sub>10</sub>.

3.12 Account is also to be taken of the distance of the receptors that may experience these effects. The assessment procedure assumes no mitigation measures are applied except those required by legislation.

3.13 The potential dust emission magnitude for the proposed Development Site is determined for the four construction activities using the criteria presented in IAQM guidelines. The magnitude is based on the scale of the anticipated works and classified as 'Small', 'Medium' or 'Large'.

3.14 The 'Sensitivity of an Area' to dust soiling effects on people and property is determined by using the criteria presented in **Table 3.1**. The 'Sensitivity of an Area' to human health impacts is presented in **Table 3.2** The 'Sensitivity of an Area' and to ecological impacts is presented in **Table 3.3**.

**Table 3.1: 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
<b>High</b>	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
<b>Medium</b>	>1	Medium	Low	Low	Low
<b>Low</b>	>1	Low	Low	Low	Low



Table 3.2: Sensitivity of the area to human health impacts

Receptor Sensitivity	Annual Mean PM <sub>10</sub> conc.	Number of Receptors	Distance from the Source (m)				
			<20	<50	<100	<200	<350
<b>High</b>	<b>&gt;32 <math>\mu\text{g m}^{-3}</math></b> <b>(&gt;18 <math>\mu\text{g m}^{-3}</math></b> <b>in Scotland)</b>	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	<b>28-32 <math>\mu\text{g m}^{-3}</math></b> <b>(16-18 <math>\mu\text{g m}^{-3}</math></b> <b>in Scotland)</b>	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	<b>24-28 <math>\mu\text{g m}^{-3}</math></b> <b>(14-16 <math>\mu\text{g m}^{-3}</math></b> <b>in Scotland)</b>	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<b>&lt;24 <math>\mu\text{g m}^{-3}</math></b> <b>(&lt;14 <math>\mu\text{g m}^{-3}</math></b> <b>in Scotland)</b>	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
<b>Medium</b>	<b>&gt;32 <math>\mu\text{g m}^{-3}</math></b> <b>(&gt;18 <math>\mu\text{g m}^{-3}</math></b> <b>in Scotland)</b>	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<b>28-32 <math>\mu\text{g m}^{-3}</math></b> <b>(16-18 <math>\mu\text{g m}^{-3}</math></b> <b>in Scotland)</b>	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<b>24-28 <math>\mu\text{g m}^{-3}</math></b> <b>(14-16 <math>\mu\text{g m}^{-3}</math></b> <b>in Scotland)</b>	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
<b>&lt;24 <math>\mu\text{g m}^{-3}</math></b> <b>(&lt;14 <math>\mu\text{g m}^{-3}</math></b> <b>in Scotland)</b>	>10	Low	Low	Low	Low	Low	
	1-10	Low	Low	Low	Low	Low	
<b>Low</b>	-	>=1	Low	Low	Low	Low	Low

Table 3.3: Sensitivity of the area to ecological impacts

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

3.15 **Figure 3.1** illustrates that there are Dust sensitive receptors within the vicinity of the site boundary, **Figure 3.2** illustrates that there are PM<sub>10</sub> sensitive receptors within the vicinity of the site boundary.



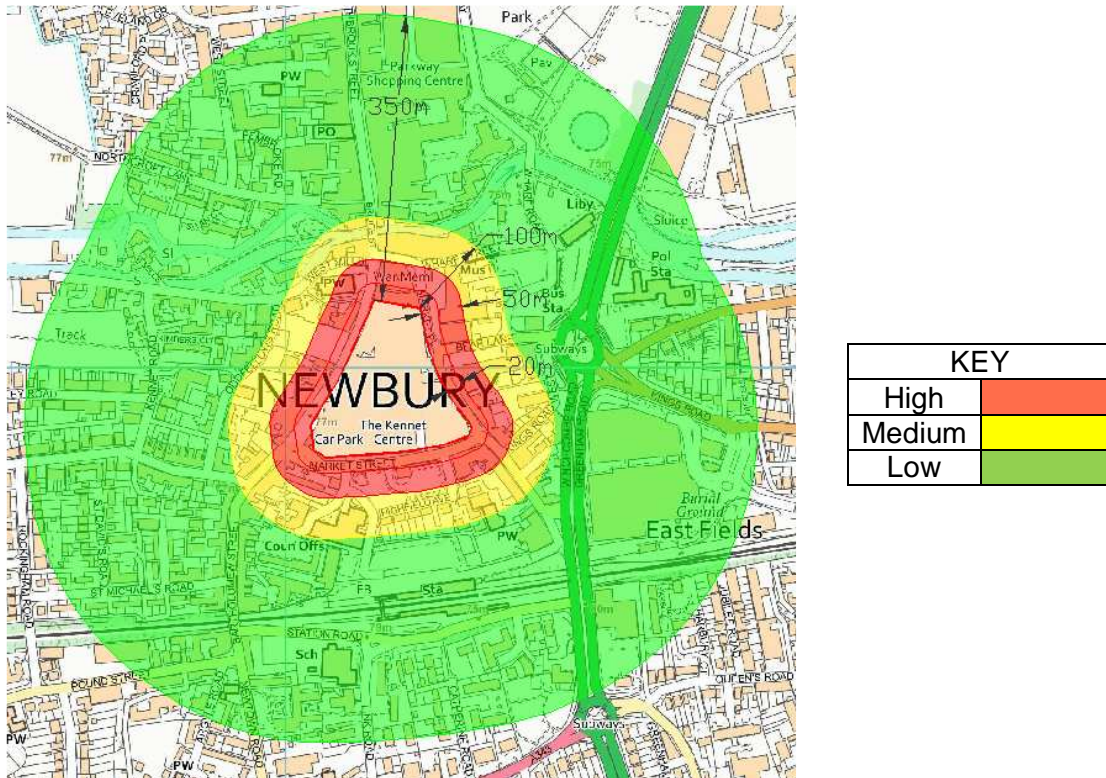


Figure 3.1: Sensitivity to Dust Soiling Effects on People and Property

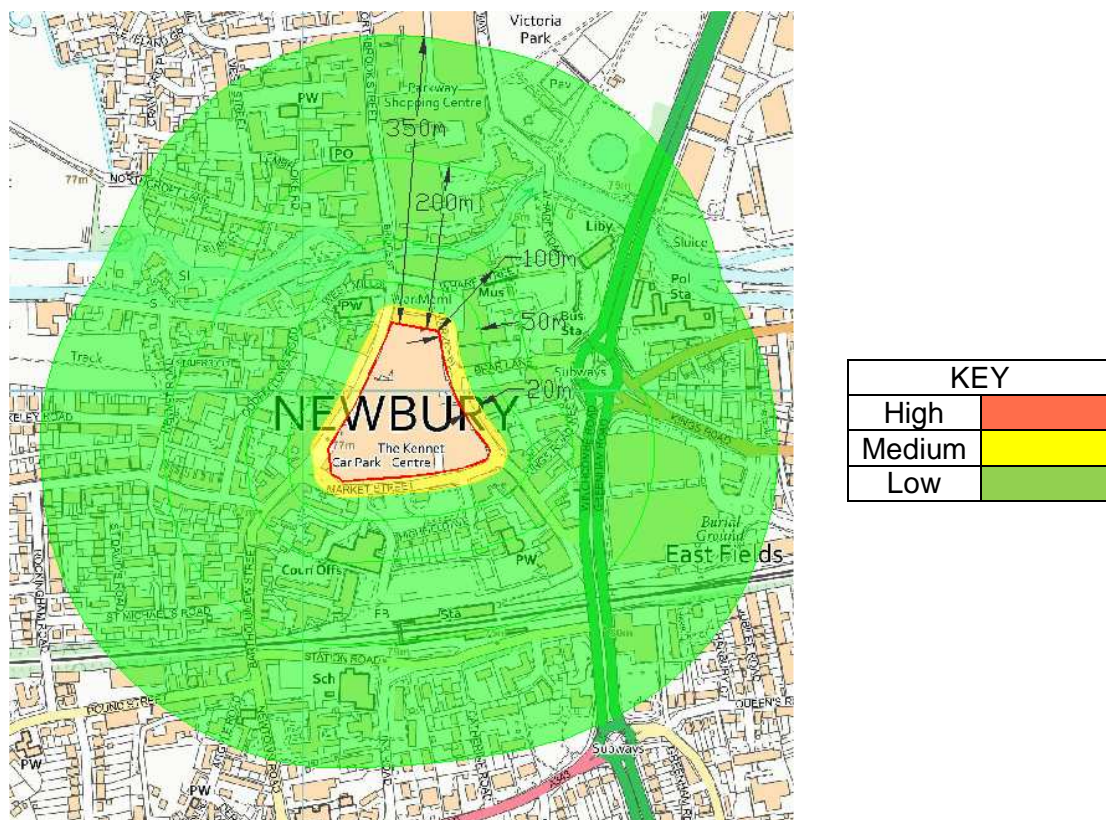


Figure 3.2: Sensitivity of the Area to Human Health Effects of PM<sub>10</sub>



- 3.16 Once the potential dust emissions magnitude and the sensitivity of the area have been determined the results can be combined to define the risks of impact using the criteria in **Table 3.5**, **Table 3.6** and **Table 3.6**.

**Table 3.4: Risk of Dust Impacts – Demolition**

Sensitivity of Area	Dust Emission Magnitude		
	<i>Large</i>	<i>Medium</i>	<i>Small</i>
<i>High</i>	High Risk	Medium Risk	Medium Risk
<i>Medium</i>	High Risk	Medium Risk	Low Risk
<i>Low</i>	Medium Risk	Low Risk	Negligible

**Table 3.5: Risk of Dust Impacts – Earthworks and Construction**

Sensitivity of Area	Dust Emission Magnitude		
	<i>Large</i>	<i>Medium</i>	<i>Small</i>
<i>High</i>	High Risk	Medium Risk	Medium Risk
<i>Medium</i>	Medium Risk	Medium Risk	Low Risk
<i>Low</i>	Medium Risk	Low Risk	Negligible

**Table 3.6: Risk of Dust Impacts – Trackout**

Sensitivity of Area	Dust Emission Magnitude		
	<i>Large</i>	<i>Medium</i>	<i>Small</i>
<i>High</i>	High Risk	Medium Risk	Medium Risk
<i>Medium</i>	Medium Risk	Low Risk	Low Risk
<i>Low</i>	Medium Risk	Low Risk	Negligible

- 3.17 The proposed development's site-specific results and significance of these tables are discussed in Section 5 of this Report.

#### Operational Phase

- 3.18 The impact of local traffic growth, development generated traffic and other potential sources of air pollution have been assessed for the magnitude of change and for the extent to which change in air quality from existing to future levels would be significant.
- 3.19 Descriptors for the magnitude of change in annual mean concentrations of NO<sub>2</sub> and PM<sub>10</sub> and the number of days with PM<sub>10</sub> concentrations greater than 50 µgm<sup>-3</sup> are presented in **Table 3.7**.





**Table 3.7: Descriptors for the magnitude in changes in annual mean concentrations of NO<sub>2</sub> and PM<sub>10</sub> and the number of days with PM<sub>10</sub> concentrations greater than 50 µgm<sup>-3</sup>**

Magnitude of Change	Annual Mean NO <sub>2</sub> /PM <sub>10</sub>	Days PM <sub>10</sub> >50 µgm <sup>-3</sup>
Large	Increase/decrease >4 µgm <sup>-3</sup>	Increase/decrease >4 days
Medium	Increase/decrease 2 - 4 µgm <sup>-3</sup>	Increase/decrease 2 - 4 days
Small	Increase/decrease 0.4 - 2 µgm <sup>-3</sup>	Increase/decrease 1 - 2 days
Imperceptible	Increase/decrease <0.4 µgm <sup>-3</sup>	Increase/decrease <1 day

3.20 Following on from the determination of the magnitudes of the impact of change of NO<sub>2</sub> and PM<sub>10</sub> levels, the assessment of the significance of the impact with reference to the NAQO Levels can be undertaken. Descriptors of the changes to annual mean concentrations of NO<sub>2</sub> and PM<sub>10</sub> and the number of days with PM<sub>10</sub> concentrations greater than 50 µgm<sup>-3</sup> are presented in **Table 3.8**.

**Table 3.8: Impact descriptors for changes to annual mean concentrations of NO<sub>2</sub> and PM<sub>10</sub> and the number of days with PM<sub>10</sub>**

<i>Absolute Concentration in Relation to Objective/Limit Value</i>	<b>Change in Concentration /Number of Days</b>		
	<i>Small</i>	<i>Medium</i>	<i>Large</i>
<b>Increase with Scheme</b>			
Above Objective/Limit Value With Scheme (>40 µgm <sup>-3</sup> />35 days)	Slight Adverse	Moderate Adverse	Substantial Adverse
Just Below Objective/Limit Value With Scheme (36-40 µgm <sup>-3</sup> />32-35 days)	Slight Adverse	Moderate Adverse	Moderate Adverse
Below Objective/Limit Value With Scheme (30-36 µgm <sup>-3</sup> />26-32 days)	Negligible	Slight Adverse	Slight Adverse
Well Below Objective/Limit Value With Scheme (<30 µgm <sup>-3</sup> /<26 days)	Negligible	Negligible	Slight Adverse
<b>Decrease with Scheme</b>			
Above Objective/Limit Value Without Scheme (>40 µgm <sup>-3</sup> />35 days)	Slight Beneficial	Moderate Beneficial	Substantial Beneficial
Just Below Objective/Limit Value Without Scheme (36-40 µgm <sup>-3</sup> />32-35 days)	Slight Beneficial	Moderate Beneficial	Moderate Beneficial
Below Objective/Limit Value Without Scheme (30-36 µgm <sup>-3</sup> />26-32 days)	Negligible	Slight Beneficial	Slight Beneficial
Well Below Objective/Limit Value Without Scheme (<30 µgm <sup>-3</sup> /<26 days)	Negligible	Negligible	Slight Beneficial
Note – an “Imperceptible” change would be described as “Negligible”			



- 3.21 Table 3.7 and Table 3.8 detail the magnitude and “Significance” of changes in NO<sub>2</sub> and PM<sub>10</sub> levels. The tables have been extracted from the Environmental Protection UK (formally NSCA) publication “*Development Control: Planning for Air Quality (2010 Update) – Table 5 and Appendix 3*”.
- 3.22 The updated IAQM guidance<sup>‡‡</sup> includes an abbreviated version of Table 3.7 and Table 3.8 and replaces numerical change / concentration with percentage change in concentrations which can be applied to NO<sub>2</sub>, PM<sub>10</sub> and the number of days with PM<sub>10</sub> concentrations greater than 50 µgm<sup>-3</sup> and PM<sub>2.5</sub>. A copy of IAQM Table 6.3 is presented below.

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

#### Traffic Data

- 3.23 The future concentrations of NO<sub>x</sub>, NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> at representative sensitive receptors in the vicinity of the existing highway network have been predicted using the ADMS - Roads (Version 5.0.1) dispersion model based on forecast traffic flows for the local road network.
- 3.24 Road traffic data for the local highway network has been collected using automatic traffic count (ATC), the Transport Consultants (Waterman Infrastructure & Environment Ltd) and from publicly available traffic data . Road traffic data has been growthed using growth factors derived from NTM and adjusted for local factors using TEMPRO.

<sup>‡‡</sup> Land-Use Planning & Development Control: Planning For Air Quality January 2017 (v1.2)



- 3.25 One existing and two future scenarios have been assessed: “Base” (2024); “Future Base” (2031 - do nothing) and “Future with Development” (2031 - do something) scenarios.
- 3.26 A summary of the “Base” vehicle flows used on the local highway network are detailed in **Table 3.9**.



**Table 3.9: AADT Traffic flow data (no development generated traffic) 2024**

Link Ref.	Description	Lights (CAR+LGV)	Heavies (OGV1+OGV2 +Bus)
1	A339 S (N of Cheap St)	42113	1868
2	A339 S (S of Cheap St)	37946	1863
3	Cheap St	6,713	118
4	Mill Ln	6,037	75
5	A339 N (N of Sainsbury Rdbt)	40,022	1,598
6	Kings Rd	15,943	417
7	Bear Lane (one way)	5,702	142
8	Cheap St E	4,455	119
9	Cheap St N	7,518	302
10	Market St E	9,963	399
11	Market St W	10,088	231
12	Bartholomew St N	7,246	124
13	Bartholomew St N (N of Site)	7,246	124
14	Bartholomew St S	14,496	355
15	Sainsburys Rdbt	21,964	820
16	A339 (S of Burger King Rdbt)	42513	1904
17	St John's Rd	11856	133
18	Burger King Rdbt	30772	1300
19	Craven Rd	4082	66
20	Bartholomew St (N of Pound St)	7265	259
21	Pound St	4367	131
22	Newtown Rd N	8437	246
23	St John's Rd	13601	275
24	Newtown Rd S	5276	118
25	A343 Andover Rd	11986	187
26	St John's Rdbt	9825	207

3.27 The local highway network has been modelled as distinctive links where vehicle speeds change, width of roads change, and at road junctions. Also included are changes in vehicle speed due to pedestrian crossings and traffic lights.



### Background Concentrations of Air Pollutants

3.28 Background concentrations of air pollutants for the dispersion modelling were obtained from the UK National Air Quality Information Archive (DEFRA website), in accordance with Local Air Quality Management Technical Guidance TG(22). Data sets for 2018 (based background maps for years 2018 – 2030) have been published by DEFRA. Presented in **Table 3.10**, are the background concentrations of  $NO_x$ ,  $NO_2$ ,  $PM_{10}$  and  $PM_{2.5}$  for the years 2024 and 2031.

**Table 3.10: Background pollutant concentrations for 2021 and 2031**

Grid Reference		2024				2031			
<i>Easting</i>	<i>Northing</i>	<i>NO<sub>x</sub></i>	<i>NO<sub>2</sub></i>	<i>PM<sub>10</sub></i>	<i>PM<sub>2.5</sub></i>	<i>NO<sub>x</sub></i>	<i>NO<sub>2</sub></i>	<i>PM<sub>10</sub></i>	<i>PM<sub>2.5</sub></i>
447500	167500	15.60	11.69	13.64	9.26	13.59	10.29	13.45	9.10
446500	166500	12.28	9.39	13.59	9.36	10.96	8.43	13.39	9.21
447500	166500	14.33	10.82	13.68	9.42	12.60	9.60	13.49	9.27



## 4.0 BASELINE CONDITIONS

### Air Quality Review and Assessment

- 4.1 As previously indicated, Local Authorities have been required to carry out a review of local air quality within their boundaries to assess areas that may fail to comply with the NAQO. In areas where these objectives are unlikely to be achieved, local authorities must designate these areas as Air Quality Management Areas (AQMA's) and prepare a written Action Plan to achieve the NAQO.
- 4.2 The review of air quality takes on several prescribed stages, of which each stage is reported. The review and assessment of air quality is the responsibility of West Berkshire Council (WBC).
- 4.3 WBC have declared two AQMA within their administrative boundary for exceedances of one-hour and annual mean concentrations of NO<sub>2</sub>. The two are: Newbury AQMA which covers an area encompassing a "very small" number of properties at the roundabout junction of the A339, A343 St John's Road and Greenham Road; and Thatcham AQMA which covers an area encompassing a "small" number of properties along the A4 Chapel Street from The Broadway to Harts Hill Road. Refer to **Figure 4.1** for the location of the Newbury AQMA.
- 4.4 The development site is not located in an AQMA. However, development generated traffic does have the potential to impact on the Newbury AQMA which is approximately 350m south of the site.

### Air Quality Monitoring

- 4.5 WBC undertakes a combination of continuous and passive monitoring of NO<sub>2</sub> at a number of sites within its administrative boundary. No particulate matter (PM<sub>10</sub>) monitoring is currently undertaken. Detailed below are the results of the continuous and passive monitoring of NO<sub>2</sub> up to the end of 2019.

#### Continuous Monitoring

- 4.6 WBC undertook continuous monitoring of NO<sub>2</sub> at one site within their administrative boundary (Site ID: CM1 – Newbury). The CM is a chemiluminescent type monitor recording NO<sub>2</sub> concentrations, located "Roadside" within the Newbury AQMA.





Figure 4.1: Newbury AQMA and Automatic (CM) Monitoring Site

4.7 Presented in **Table 4.1** are recorded concentrations of NO<sub>2</sub> available for 2015 to 2022 and where concentrations are at or above the NAQO level the cells have been shaded light grey.

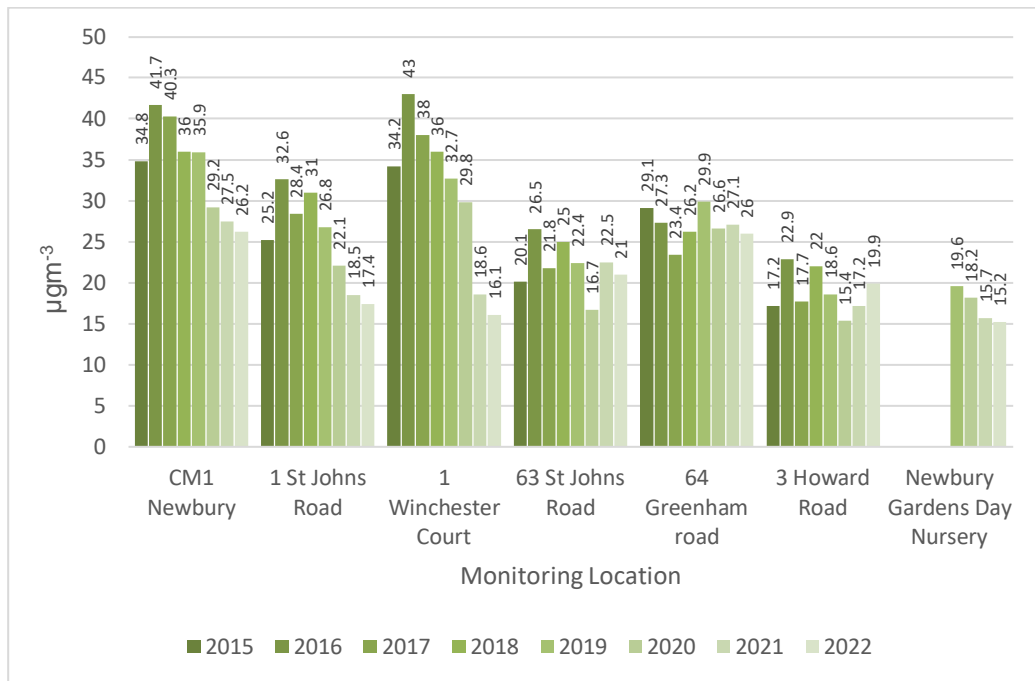
Table 4.1: Measured Annual Mean NO<sub>2</sub> Concentrations (µg<sup>m-3</sup>) – CM1

Site ID	Location	Within AQMA?	Annual mean concentrations (µg/m <sup>3</sup> )							
			2015	2016	2017	2018	2019	2020	2021	2022
CM1	Newbury	YES	34.8	41.7	40.3	36	35.9	29.2	27.5	26.2

4.8 From Table 4.2 it can be seen that annual mean concentrations of NO<sub>2</sub> were at or above the NAQO level of 40 µg<sup>m-3</sup> in 2016 and 2017 and below the NAQO level up to the end of 2022. It should be noted that reduced concentrations in 2020, 2021 and possibly 2022 are a result of altered travel patterns due to the Covid 19 pandemic.



4.9 Presented in **Figure 4.2** are the annual trends in NO<sub>2</sub> concentrations since 2015 within Newbury AQMA.



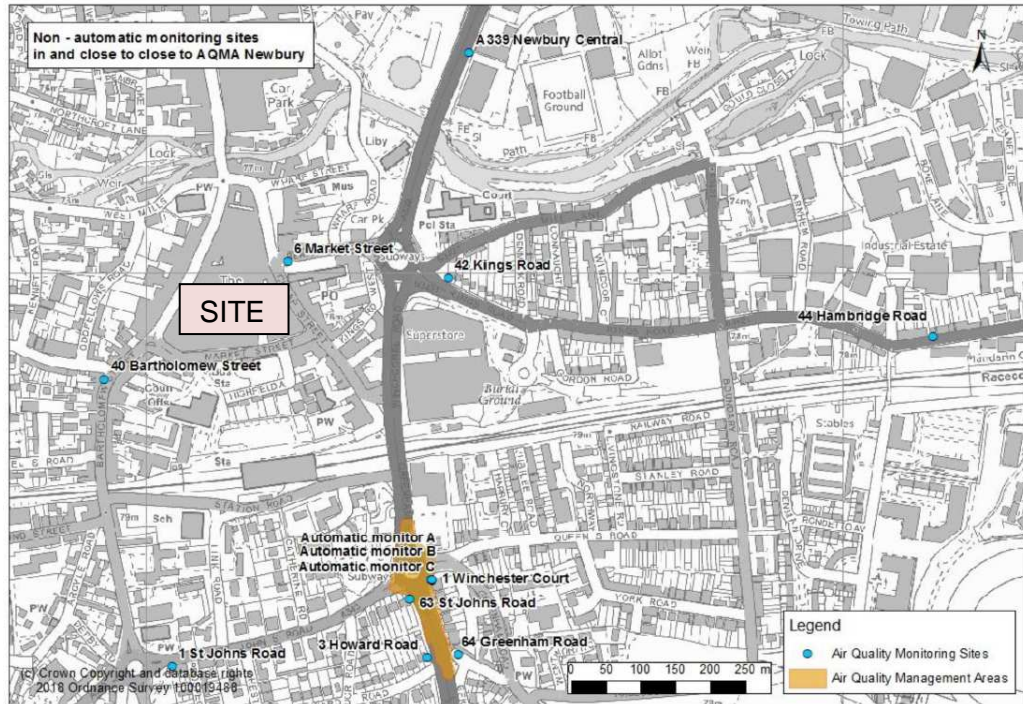
**Figure 4.2: Annual Trends in NO<sub>2</sub> Concentrations Since 2015 within Newbury AQMA**

4.10 From Figure 4.2 it can be seen that overall concentrations of NO<sub>2</sub> have been reducing over the past five years, up to the end of 2022.

#### Passive Monitoring - Diffusion Tubes

4.11 WBC also operates a network of non-automatic (passive) monitoring sites within its administrative boundary and at the end of 2022 there were 36 active sites monitoring NO<sub>2</sub> via diffusion tube (DT). Refer to **Figure 4.3** for the locations of the diffusion tubes closest to the development site.





**Figure 4.3: Non-Automatic (DT) Monitoring Sites close to the Development Site**

4.12 The DT locations within WBC administrative area are a mixture of “Kerbside”, “Roadside”, “Suburban”, “Urban Background”, “Urban Centre” and “Building Façade” concentrations. The closest DTs to the development site are at 6 Market Street (Urban Centre) and 40 Bartholomew Street (Roadside).

4.13 Presented in **Table 4.2** are recorded concentrations of NO<sub>2</sub> available for 2015 to 2019 and where concentrations are at or above the NAQO level the cells have been shaded light grey.

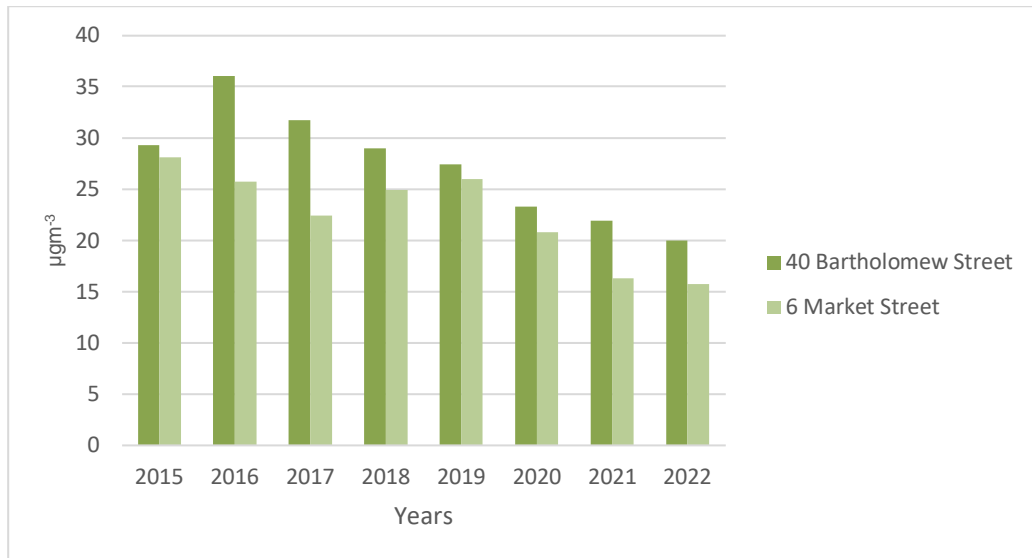
**Table 4.2: Measured Annual Mean NO<sub>2</sub> Concentrations (µg/m<sup>3</sup>) – DT**

Site ID	Location	Within AQMA?	Annual mean concentrations (µg/m <sup>3</sup> )							
			2015	2016	2017	2018	2019	2020	2021	2022
40 Bartholomew Street	Newbury	No	29.3	36	31.7	29	27.4	23.3	21.9	20
6 Market Street	Newbury	No	28.1	25.7	22.4	24.9	26	20.8	16.3	15.7

4.14 From Table 4.2 it can be seen that all annual mean concentrations of NO<sub>2</sub> were below the NAQO level of 40 µg/m<sup>3</sup> up to the end of 2022.



4.15 Presented in **Figure 4.4** are the annual trends in NO<sub>2</sub> concentrations since 2015 at the non-automatic (passive) monitoring sites 6 Market Street (Urban Centre) and 40 Bartholomew Street (Roadside).



**Figure 4.4:** Annual Trends in NO<sub>2</sub> Concentrations Since 2015 at the Non-Automatic (Passive) Monitoring Sites 6 Market Street (Urban Centre) and 40 Bartholomew Street (Roadside)

4.16 From Figure 4.4 it can be seen that concentrations of NO<sub>2</sub> at 6 Market Street and 40 Bartholomew Street have been below the NAQO level of 40 µgm<sup>-3</sup>. It can also be seen that the recorded levels of NO<sub>2</sub> at 40 Bartholomew Street have decreased steadily since 2016, however, there has been a slight increase at 6 Market Street since 2017 to 2019 then a steady decrease.

4.17 West Berkshires 2020 ASR concluded that:

*“There was no exceedance of the monitored NO<sub>2</sub> Annual Mean Objective (40µgm<sup>-3</sup>) at the continuous monitor located in Newbury, the level was 26.2µgm<sup>-3</sup> in 2022 compared 27.5 µgm<sup>-3</sup> in 2021. The hourly objective (permitted level of 18 exceedances of 200 µgm<sup>-3</sup> per year) was also met as there no exceedances.*

*There were no exceedances of the Annual Air Quality Objective level of 40 µgm<sup>-3</sup> from the ratified and bias adjusted diffusion tubes within the Newbury AQMA or the Thatcham AQMA. There were no locations greater than 60 µgm<sup>-3</sup> which indicates no exceedance of the 1-hour Objective. This year (2022) showed that 19 sites have decreased since 2021, and 15 have increased. Overall, the concentrations have been showing a trend of decreasing NO<sub>2</sub> since 2018. According to DEFRA it is not appropriate to revoke any of the AQMAs as of yet*



*as we will need 3 consecutive years of, pandemic free NO<sub>2</sub> data below the level of 36µg/m<sup>3</sup>. The data collected indicated that no further extension are needed to be made to the AQMAs and we do not need to look at declaring any more.”.*

### **Dispersion Modelling – ADMS-Roads**

- 4.18 The existing and future concentrations of pollutants within the assessment area for all scenarios have been modelled using the Atmospheric Dispersion Modelling System software ADMS-Roads (Version 5.0.1). The software is PC based and models the release of pollutants from road and industrial sources into the atmosphere.
- 4.19 ADMS-Roads is designed to allow the modelling of simple scenarios such as single carriageway roads up to complex scenarios such multiple lane roads and junctions. Allowance is made in the model for initial release of pollutants which are affected by vehicle wake, traffic induced turbulence and street canyons. Boundary layer structure based on the Monin-Obukhov length and the boundary layer height are incorporated in the model which allows for a realistic representation of the changing characteristics of dispersion with height.
- 4.20 Multiple road traffic sources were used in the model to represent the changing concentration of traffic, the different speeds of traffic and the changing road geometry.
- 4.21 Meteorological data for 2019 was obtained from the MET Office. The best representative observation station for the development site is a weather station located in RAF Benson. The MET data has been used for the verification of the model, base modelling and future years and a wind rose for 2019 is presented in **Appendix 3**.
- 4.22 Background pollutant concentrations for the kilometre squares covering the assessment area were obtained from the DEFRA website and the concentrations for 2024 and 2031 are presented in Table 3.10.
- 4.23 Concentrations were modelled at the development site, the location of the DT closest to the Site, within the Newbury AQMA and specific receptors within Newbury. Modelling outputs are between 1.5 metres and 2 metres above ground height.
- 4.24 Copies of the model inputs are available on request.



### Model Verification

- 4.25 Model verification has been undertaken using the guidance provided in LAQM.TG(22). The process requires the comparison of the monitored roadside contribution of NO<sub>2</sub> with the modelled roadside contribution of NO<sub>2</sub>. TG(22) recommends that the greatest number of monitoring data should be used for verification.
- 4.26 To verify the model adjacent to the roads that would be affected by the proposed development traffic, predictions have been made at locations representative of the CM1 and DT for the base year 2019 using ADMS-Roads dispersion modelling. The locations of the CM and DTs are illustrated on **Figure 4.3** and the results of the predictions are presented in **Table 4.3**.

**Table 4.3: Predicted air quality concentrations at the CM1 and DT for 2019**

Site ID		NO <sub>x</sub>	NO <sub>2</sub>
		Annual mean µgm <sup>-3</sup>	Annual mean µgm <sup>-3</sup>
1	1 St John's Rd	29.03	13.90
2	1 Winchester Court	53.68	19.76
3	3 Howard Rd	28.09	13.54
4	40 Bartholomew St	30.66	14.15
5	6 Market St	28.89	13.78
6	63 St John's Rd	39.49	16.32
7	64 Greenham Rd	27.88	13.58
8	CM1 Newbury	64.68	22.47
9	Newbury Gardens Day Nursery	29.62	13.78
NAQO		-	40

- 4.27 If the pollutant concentrations in Table 4.3 are compared to the NAQO, it can be seen that concentrations of NO<sub>2</sub> are predicted to be well below the NAQO level of 40 µgm<sup>-3</sup>.
- 4.28 ADMS-Roads has been used to calculate NO<sub>x</sub> and NO<sub>2</sub> concentrations for 2019 which have been verified against the recorded NO<sub>x</sub> and NO<sub>2</sub> levels at the CM and DTs. The results from the monitoring and the ADMS-Roads modelling are presented in **Table 4.4**.



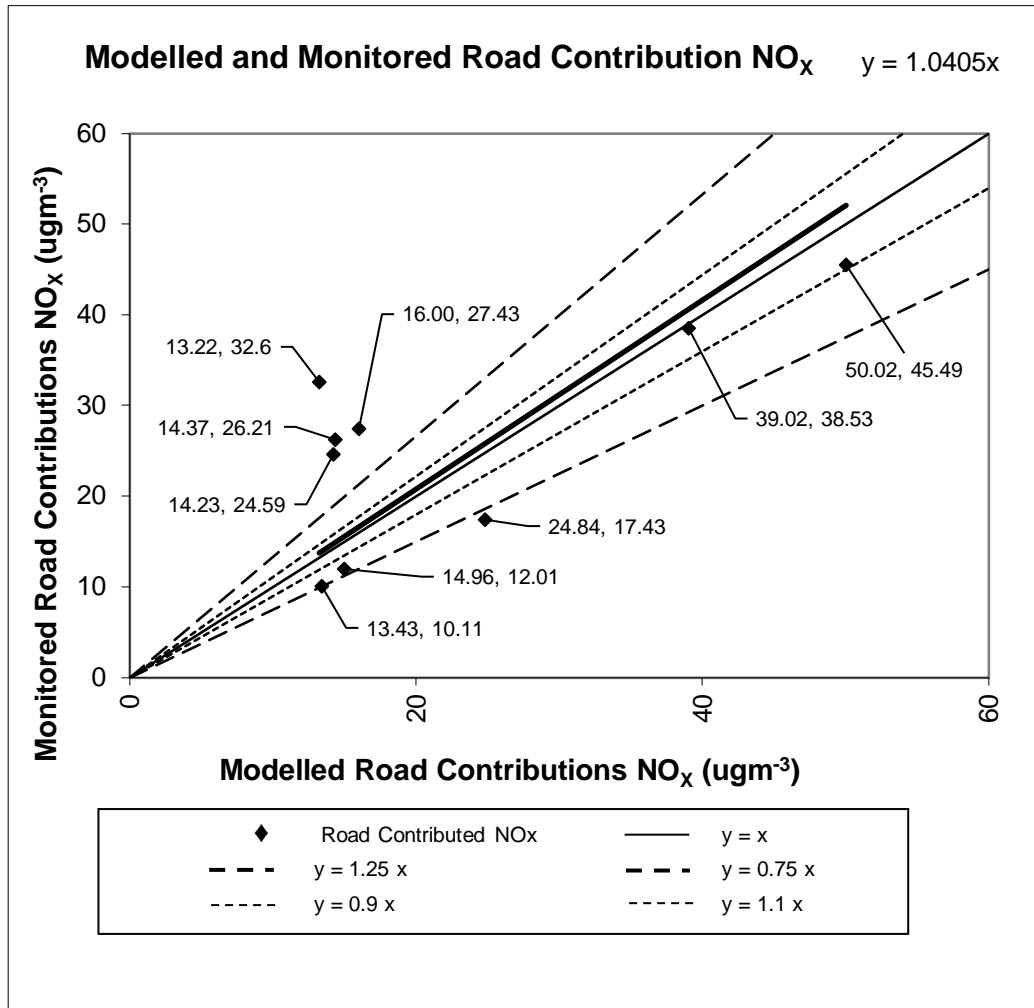
**Table 4.4: Comparison of the monitored (AMS and DT) and modelled (ADMS) concentrations of NO<sub>2</sub>**

Site ID	Monitor Type	Background NO <sub>2</sub>	2019 Monitored NO <sub>2</sub>	2019 Modelled NO <sub>2</sub>	Difference [(monitored - modelled)/monitored] x100 (%)
1 St John's Rd	DT	13.15	26.8	13.90	-48.1
1 Winchester Court	DT	13.15	32.7	19.76	-39.6
3 Howard Rd	DT	13.15	18.6	13.54	-27.2
40 Bartholomew St	DT	13.15	27.4	14.15	-48.4
6 Market St	DT	13.15	26	13.78	-47.0
63 St John's Rd	DT	13.15	22.4	16.32	-27.2
64 Greenham Rd	DT	13.15	29.9	13.58	-54.6
CM1 Newbury	CM	13.15	35.9	22.47	-37.4
Newbury Gardens Day Nursery	DT	13.15	19.6	13.78	-29.7

4.29 Table 4.4 illustrates that the model is under predicting concentrations of NO<sub>2</sub> by between 27.2% and 54.6%.

4.30 Within TG(22) there is guidance on how to apply an adjustment factor to the road contribution NO<sub>x</sub> to reduce the inaccuracy of the results from the modelling. Using the TG(22) 'Box 7.18' method, the modelled road contribution NO<sub>x</sub> is not predicting an accurate contribution of NO<sub>x</sub> to the overall contribution. Therefore a correction factor will need to be applied to the modelled road contribution NO<sub>x</sub> to bring it to within comparable levels with the monitored data.

4.31 A Road-NO<sub>x</sub> adjustment factor of 1.0405 was determined as the slope of the best fit between the 'measured' road contribution and 'modelled' road contribution NO<sub>x</sub>, forced through zero. The comparison is presented in **Figure 4.5**.



**Figure 4.5: Comparison of Measured Road NO<sub>x</sub> and Unadjusted Modelled Road NO<sub>x</sub>**

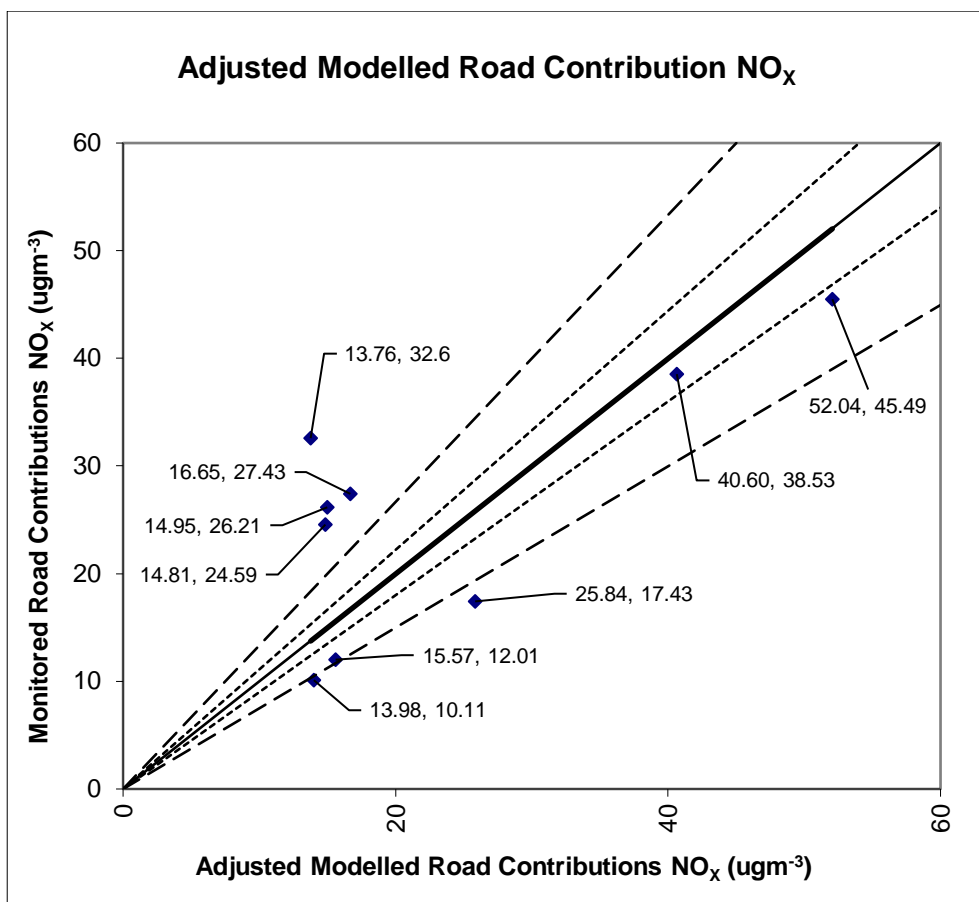
4.32 Presented in **Table 4.5** is the comparison of the monitored NO<sub>2</sub> concentrations and the adjusted ADMS-Roads modelled NO<sub>2</sub> concentrations.



**Table 4.5: Comparison of the Monitored (DT) and the Adjusted Modelled (ADMS) Concentrations of NO<sub>2</sub>**

Site ID	Monitor Type	Background NO <sub>2</sub>	2019 Monitored NO <sub>2</sub>	2019 Adjusted Modelled NO <sub>2</sub>	Difference [(monitored - modelled)/monitored] x100 (%)
1 St John's Rd	DT	13.15	26.8	18.77	-29.96
1 Winchester Court	DT	13.15	32.7	32.88	0.55
3 Howard Rd	DT	13.15	18.6	20.66	11.08
40 Bartholomew St	DT	13.15	27.4	19.09	-30.33
6 Market St	DT	13.15	26	19.75	-24.04
63 St John's Rd	DT	13.15	22.4	26.75	19.42
64 Greenham Rd	DT	13.15	29.9	20.5	-31.44
CM1 Newbury	CM	13.15	35.9	37.8	5.29
Newbury Gardens Day Nursery	DT	13.15	19.6	25.16	28.37

4.33 The comparison of the monitored NO<sub>2</sub> and the adjusted modelled NO<sub>2</sub> concentrations are illustrated on **Figure 4.6**.



**Figure 4.6: Comparison of Measured NO<sub>2</sub> and Adjusted Modelled NO<sub>2</sub>**





4.34 With reference to Figure 4.6, there is no systematic over or under-prediction of concentrations of NO<sub>2</sub> following adjustment of the road concentration NO<sub>x</sub>.

### Pollutant Concentrations

4.35 To characterise the air pollutant concentrations adjacent to the roads that would be affected by the proposed development traffic, predictions have been made at WBC DTs in close proximity to the site. This has been undertaken for the 'Base Year' 2024 using ADMS-Roads dispersion modelling. The locations of the DT receptors are illustrated on Figure 4.3.

4.36 Background concentrations for future assessments years have been kept the same as the Verification year 2019. The reason for using the base year background concentrations is due to recorded local concentrations of NO<sub>2</sub> not decreasing significantly as predicted over the past five years, and a worst case scenario has therefore been modelled.

4.37 The results of the predictions are presented in **Table 4.6**. Where concentrations are above the NAQO the cells have been shaded light grey.

**Table 4.6: Predicted Air Quality Concentrations at Sensitive Receptors 2024**

Receptor Number and Name		NO <sub>x</sub>	NO <sub>2</sub>	PM <sub>10</sub>		PM <sub>2.5</sub>
		Annual mean µgm <sup>-3</sup>	Annual mean µgm <sup>-3</sup>	Annual mean µgm <sup>-3</sup>	Days >50 µgm <sup>-3</sup>	Annual mean µgm <sup>-3</sup>
1	1 St John's Rd	22.21	15.1	15.41	0.17	10.60
2	1 Winchester Court	37.30	22.88	17.26	0.89	11.65
3	3 Howard Rd	22.72	15.37	15.94	0.30	10.88
4	40 Bartholomew St	25.01	16.58	15.57	0.20	10.70
5	6 Market St	25.01	16.58	15.57	0.20	10.70
6	63 St John's Rd	28.95	18.64	16.41	0.46	11.16
7	64 Greenham Rd	22.61	15.31	15.94	0.30	10.88
8	CM1 Newbury	44.00	26.17	17.96	1.37	12.05
9	Newbury Gardens Day Nursery	23.22	15.64	15.68	0.23	10.75
NAQO		-	40	40	35	25

4.38 If the pollutant concentrations in Table 4.6 are compared to the NAQO, it can be seen that concentrations of NO<sub>2</sub> and PM<sub>10</sub> are predicted to be well below the NAQO level of 40 µgm<sup>-3</sup>. The number of days when the concentration of PM<sub>10</sub> is





greater than  $50 \mu\text{g m}^{-3}$  is well below the NAQO level of 35 days and concentrations of  $\text{PM}_{2.5}$  are well below the NAQO level of  $25 \mu\text{g m}^{-3}$ .



## 5.0 AIR QUALITY ASSESSMENT

- 5.1 The assessment has been split into two parts, the potential “Impacts” of development generated traffic and construction activities and the “Constraints” on the development.
- 5.2 The “Impact” section of the assessment assesses whether development generated traffic flows on the highway network are likely to result in a significant change in annual mean concentration of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> at sensitive off-site receptors. Also assessed are the potential dust impacts and PM<sub>10</sub> changes on sensitive receptors.
- 5.3 The “Constraints” part of the assessment compares the predicted concentration of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> within the development site against NAQO levels and assesses whether predicted levels within the site are above the objective levels.

### Impacts

#### Dust Assessment: Predicted Construction Impacts

- 5.4 The main sources of dust and PM<sub>10</sub> during construction activities are:
- Haulage routes, vehicles and construction traffic;
  - Materials handling, storage, stockpiling, potential spillage and disposal;
  - Exhaust emissions from site plant;
  - Site preparation;
  - Construction and fabrication processes; and
  - Internal and external finishing and refurbishment.
- 5.5 The majority of the releases are likely to occur during the typical “working-week”. The construction impact assessment has been split into two sections. The first deals with the potential impacts from dust soiling and changes in PM<sub>10</sub> concentrations due to on-site works and the second deals with the effect of emissions from construction traffic.



*Dust soiling and changes in PM<sub>10</sub> concentrations*

5.6 The site will require earthworks, construction and trackout of vehicles associated with all phases of the Site. The resulting dust emission magnitudes are:

- Demolition – **Medium**: Total building volume 20,000 m<sup>3</sup> – 50,000 m<sup>3</sup>, potentially dusty construction material, demolition activities 10-20 m above ground level;
- Earthworks – **Medium** - Total site area between 2,500 m<sup>2</sup> and 10,000 m<sup>2</sup>, moderately dusty soil type, 5-10 heavy earth moving vehicles active at any one time, total material moved 20,000 - 100,000 tonnes),
- Construction – **Large** (Total building volume is greater than 100,000 m<sup>3</sup>, on site concrete batching),
- Trackout – **Medium** (10-50 HGV outward movements in any one day, moderately dusty surface material).

5.7 Using the information presented in Section 3 and the criteria presented in Table 3.1, Table 3.2 and Table 3.3, the sensitivity of the construction for the proposed development can be defined. The results of defining the sensitivity of the area are presented in **Table 5.1**.

**Table 5.1: Outcome of Defining the Sensitivity of an Area**

Potential Impact	Sensitivity of the Surrounding Area			
	<i>Demolition</i>	<i>Earthworks</i>	<i>Construction</i>	<i>Trackout</i>
<i>Dust Soiling</i>	High	High	High	High
<i>Human Health</i>	Medium	Medium	Medium	Medium
<i>Ecological</i>	Negligible	Negligible	Negligible	Negligible

5.8 From Table 5.1 it can be seen that the predicted sensitivity of the surrounding area to dust soiling is “High” during the demolition, construction, earthworks and trackout phases. The sensitivity of the surrounding area to changes in PM<sub>10</sub> affecting human health is “Medium” during the demolition, construction, earthworks and trackout phases. As there are no ecological receptors within 50m of the development, the predicted sensitivity impact is “Negligible”.

5.9 The dust emission magnitude determined in paragraph 5.6 is combined with the sensitivity of the area summarised in Table 5.1 to determine the risk of impacts with no mitigation applied. The risk of impacts are summarised in **Table 5.2**.



**Table 5.2: Summary Dust Risk Table to Define Site-Specific Mitigation**

Potential Impact	Risk			
	<i>Demolition</i>	<i>Earthworks</i>	<i>Construction</i>	<i>Trackout</i>
<b><i>Dust Soiling</i></b>	Medium	Medium	High	Medium
<b><i>Human Health</i></b>	Medium	Medium	Medium	Low
<b><i>Ecological</i></b>	Negligible	Negligible	Negligible	Negligible

- 5.10 During the Demolition phase, there is a Medium Risk of annoyance caused by dust soiling and health effects and Negligible ecological impacts due to an increase exposure in PM<sub>10</sub>.
- 5.11 During the Earthworks phase of development, there is a Medium Risk of annoyance caused by dust soiling and health effects due to increase exposure in PM<sub>10</sub>.
- 5.12 During the Construction phase of development, it has been assessed that there is a High Risk of potential annoyance to people and property caused by dust soiling and a Medium Risk of health effects due to an increase exposure in PM<sub>10</sub>. Therefore, mitigation may be required.
- 5.13 Throughout the Trackout processes, there is a Medium Risk of dust soiling and a Low Risk on human health effects due to an increase exposure in PM<sub>10</sub>.
- 5.14 For those cases where the risk category is Negligible (i.e. ecological), no specific mitigation measures is required beyond specific legislation.

Predicted Operational Impacts

- 5.15 The air quality impact of the proposed development on the surrounding area has been assessed by considering the changes in traffic flows which will occur on the existing highway network with the development in place.
- 5.16 Potential impacts from the proposed development would occur following the completion of the proposed development in 2031. Therefore, the year of assessment is 2031 “do nothing” and “do something”. For this development a Transport Assessment (TA) has been undertaken and part of the assessment was the collection and analysis of road traffic data from manual classified traffic counts (MCC), automated traffic counts (ATC), and the proposed development.



*Traffic Generation –2031 with development*

- 5.17 Road traffic data has been provided in part by the Transport Consultants (Waterman Infrastructure & Environment Ltd). The remaining traffic data was collected using permanent ATCs on the A339 and the A343 and publicly available traffic data for the local highway network. The “Base” traffic flows have been growthed using TEMPRO and NTM, which takes into account traffic from Committed Development projects. Worst-case flows arising from development generated traffic has then been added to the 2031 traffic flows and a summary is presented in **Table 5.3**.



**Table 5.3: Changes in traffic flow “with” and “without” the development in 2031**

Link Ref.	Description	2031 AADT			
		“do nothing”	“do something”	Change	% Change
1	A339 S (N of Cheap St)	46813	45408	-1406	-3.0
2	A339 S (S of Cheap St)	42372	41155	-1218	-2.9
3	Cheap St	7271	5866	-1406	-19.3
4	Mill Ln	6506	6506	0	0.0
5	A339 N (N of Sainsbury Rdbt)	44300	43729	-571	-1.3
6	Kings Rd	17414	16399	-1015	-5.8
7	Bear Lane (one way)	6221	4815	-1406	-22.6
8	Cheap St E	4869	3463	-1406	-28.9
9	Cheap St N	8324	6918	-1406	-16.9
10	Market St E	11029	8218	-2811	-25.5
11	Market St W	10984	9252	-1732	-15.8
12	Bartholomew St N	7844	6112	-1732	-22.1
13	Bartholomew St N (N of Site)	7844	6112	-1732	-22.1
14	Bartholomew St S	15807	15155	-653	-4.1
15	Sainsburys Rdbt	24251	23371	-879	-3.6
16	A339 (S of Burger King Rdbt)	46959	46553	-406	-0.9
17	St John's Rd	12675	12269	-406	-3.2
18	Burger King Rdbt	34002	33326	-676	-2.0
19	Craven Rd	4730	4404	-326	-6.9
20	Bartholomew St (N of Pound St)	8579	8253	-326	-3.8
21	Pound St	5128	4964	-163	-3.2
22	Newtown Rd N	9900	9736	-163	-1.6
23	St John's Rd	15820	15414	-406	-2.6
24	Newtown Rd S	6150	5865	-285	-4.6
25	A343 Andover Rd	13848	13564	-285	-2.1
26	St John's Rdbt	11429	11145	-285	-2.5

5.18 From Table 5.3 it can be seen that, with the completion of the development, there is predicted to be a decrease of between 0% and 28.9% in 24 hour traffic flows along the links within the assessment area. The greatest predicted change in traffic flows are on Cheap St E (28.9%).



*Background Concentrations – 2031*

5.19 From Table 4.2, it can be seen that there has been no significant change in measured concentrations of NO<sub>2</sub> in the past five years. Therefore, the background concentrations in NO<sub>x</sub>, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> for 2019 have been used for the future 2031 assessment.

Screening Assessment – 2031 with development

5.20 Sensitive receptors adjacent to the development site and where there is predicted to be an impact from the development have been assessed for the two scenarios, “do nothing” and “do something”. The results from the assessment are presented in **Table 5.4** and **Table 5.5**.

**Table 5.4: Predicted air quality concentrations at sensitive receptors in 2031 “do nothing”**

Receptor Number and Name		NO <sub>x</sub>	NO <sub>2</sub>	PM <sub>10</sub>		PM <sub>2.5</sub>
		Annual mean µgm <sup>-3</sup>	Annual mean µgm <sup>-3</sup>	Annual mean µgm <sup>-3</sup>	Days >50 µgm <sup>-3</sup>	Annual mean µgm <sup>-3</sup>
1	1 St John's Rd	19.38	13.53	15.46	0.18	10.62
2	1 Winchester Court	27.63	17.80	17.35	0.94	11.67
3	3 Howard Rd	19.19	13.43	15.99	0.31	10.90
4	40 Bartholomew St	21.34	14.56	15.65	0.22	10.73
5	6 Market St	19.09	13.37	15.56	0.20	10.67
6	63 St John's Rd	22.83	15.33	16.47	0.49	11.18
7	64 Greenham Rd	19.11	13.39	15.99	0.31	10.90
8	CM1 Newbury	31.48	19.74	18.07	1.45	12.08
9	Newbury Gardens Day Nursery	19.58	13.63	15.72	0.24	10.76
NAQO		-	40	40	40	25





**Table 5.5: Predicted air quality concentrations at sensitive receptors in 2031 “do something”**

Receptor Number and Name		NO <sub>x</sub>	NO <sub>2</sub>	PM <sub>10</sub>		PM <sub>2.5</sub>
		Annual mean µgm <sup>-3</sup>	Annual mean µgm <sup>-3</sup>	Annual mean µgm <sup>-3</sup>	Days >50 µgm <sup>-3</sup>	Annual mean µgm <sup>-3</sup>
1	1 St John's Rd	19.27	13.47	15.44	0.18	10.61
2	1 Winchester Court	27.46	17.72	17.31	0.92	11.65
3	3 Howard Rd	19.14	13.40	15.98	0.31	10.89
4	40 Bartholomew St	21.11	14.44	15.61	0.21	10.71
5	6 Market St	18.50	13.07	15.44	0.18	10.60
6	63 St John's Rd	22.71	15.27	16.45	0.48	11.16
7	64 Greenham Rd	19.06	13.36	15.98	0.31	10.89
8	CM1 Newbury	31.26	19.63	18.02	1.42	12.05
9	Newbury Gardens Day Nursery	19.47	13.58	15.69	0.23	10.75
NAQO		-	40	40	40	25

5.21 Presented in **Table 5.6** are the predicted change in concentrations of NO<sub>2</sub> and PM<sub>10</sub> and the change in the number of days where concentrations of PM<sub>10</sub> are greater than 50 µgm<sup>-3</sup>.

**Table 5.6: Predicted change in air quality concentrations at sensitive receptors in 2031 “do something”**

Receptor Number and Name		NO <sub>2</sub>		PM <sub>10</sub>		PM <sub>2.5</sub>			
		Change in annual mean µgm <sup>-3</sup> (%)		Change in annual mean µgm <sup>-3</sup> (%)		Change in days >50 µgm <sup>-3</sup> (%)		Change in annual mean µgm <sup>-3</sup> (%)	
1	1 St John's Rd	-0.06	-(0.44)	-0.02	-(0.13)	0.00	(0.00)	-0.02	-(0.19)
2	1 Winchester Court	-0.08	-(0.45)	-0.04	-(0.23)	-0.02	-(2.12)	-0.03	-(0.26)
3	3 Howard Rd	-0.03	-(0.22)	-0.01	-(0.06)	0.00	(0.00)	-0.01	-(0.09)
4	40 Bartholomew St	-0.12	-(0.82)	-0.05	-(0.32)	-0.01	-(4.51)	-0.03	-(0.28)
5	6 Market St	-0.30	-(2.24)	-0.12	-(0.77)	-0.02	-(9.91)	-0.07	-(0.66)
6	63 St John's Rd	-0.06	-(0.39)	-0.03	-(0.18)	-0.01	-(2.05)	-0.01	-(0.09)
7	64 Greenham Rd	-0.03	-(0.22)	-0.01	-(0.06)	0.00	(0.00)	-0.01	-(0.09)
8	CM1 Newbury	-0.11	-(0.56)	-0.05	-(0.28)	-0.04	-(2.75)	-0.03	-(0.25)
9	Newbury Gardens Day Nursery	-0.05	-(0.37)	-0.03	-(0.19)	-0.01	-(4.22)	-0.01	-(0.09)



5.22 From Table 5.6 it can be seen that concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are predicted decrease by -0.3 µgm<sup>-3</sup> or less, -0.12 µgm<sup>-3</sup> or less and -0.07 µgm<sup>-3</sup> or less respectively. It can also be seen that the number of days where the concentration of PM<sub>10</sub> is predicted to be more than 50 µgm<sup>-3</sup> will decrease by -0.04 days or less.

Magnitude of Change – 2031 with development

5.23 Comparing the results in Table 5.6 with the magnitude of change in Table 3.7 it can be seen that all the receptors are predicted to experience a decrease in annual mean NO<sub>2</sub> concentrations which is “Imperceptible” (<0.4 µgm<sup>-3</sup>).

5.24 It can also be seen that the receptors are predicted to experience a decrease in annual mean PM<sub>10</sub> and PM<sub>2.5</sub> concentrations which is “Imperceptible” (<0.4 µgm<sup>-3</sup>) and an “Imperceptible” (<1 day) decrease in the number of days where PM<sub>10</sub> levels are greater than 50 µgm<sup>-3</sup>.

“Significance” of Change – 2031 with development

5.25 The “Significance” of the predicted changes in NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> annual mean concentrations are presented in **Table 5.7**.

**Table 5.7: NO<sub>2</sub> – Significance of change in annual mean concentrations following the completion of the proposed development in 2031**

Receptor Number and Name		NO <sub>2</sub>		
		Change in annual mean (µgm <sup>-3</sup> )	Magnitude of change	“Significance” of change
1	1 St John's Rd	-0.06	Imperceptible	Negligible
2	1 Winchester Court	-0.08	Imperceptible	Negligible
3	3 Howard Rd	-0.03	Imperceptible	Negligible
4	40 Bartholomew St	-0.12	Imperceptible	Negligible
5	6 Market St	-0.30	Imperceptible	Negligible
6	63 St John's Rd	-0.06	Imperceptible	Negligible
7	64 Greenham Rd	-0.03	Imperceptible	Negligible
8	CM1 Newbury	-0.11	Imperceptible	Negligible
9	Newbury Gardens Day Nursery	-0.05	Imperceptible	Negligible



5.26 With reference to the overall concentration of NO<sub>2</sub> presented in Table 5.5 being close to the NAQO level of 40 µgm<sup>-3</sup> and the magnitude of change being “Imperceptible”, the “Significance” of change in NO<sub>2</sub> concentrations is considered “Negligible”.

**Table 5.8: PM<sub>10</sub> – Significance of change in annual mean concentrations following the completion of the proposed development in 2031**

Receptor Number and Name		PM <sub>10</sub>		
		Change in annual mean (µgm <sup>-3</sup> )	Magnitude of change	“Significance” of change
1	1 St John's Rd	-0.02	Imperceptible	Negligible
2	1 Winchester Court	-0.04	Imperceptible	Negligible
3	3 Howard Rd	-0.01	Imperceptible	Negligible
4	40 Bartholomew St	-0.05	Imperceptible	Negligible
5	6 Market St	-0.12	Imperceptible	Negligible
6	63 St John's Rd	-0.03	Imperceptible	Negligible
7	64 Greenham Rd	-0.01	Imperceptible	Negligible
8	CM1 Newbury	-0.05	Imperceptible	Negligible
9	Newbury Gardens Day Nursery	-0.03	Imperceptible	Negligible

5.27 With reference to the overall concentrations of PM<sub>10</sub> presented in Table 5.5 being well below the objective level of 40 µgm<sup>-3</sup> and the magnitude of change presented in Table 5.8 being “Imperceptible”, the “Significance” of change in PM<sub>10</sub> concentration is considered to be “Negligible”.



**Table 5.9: PM<sub>2.5</sub> – Significance of change in annual mean concentrations following the completion of the proposed development in 2031**

Receptor Number and Name		PM <sub>2.5</sub>		
		Change in annual mean (µgm <sup>-3</sup> )	Magnitude of change	“Significance” of change
1	1 St John's Rd	-0.02	Imperceptible	Negligible
2	1 Winchester Court	-0.03	Imperceptible	Negligible
3	3 Howard Rd	-0.01	Imperceptible	Negligible
4	40 Bartholomew St	-0.03	Imperceptible	Negligible
5	6 Market St	-0.07	Imperceptible	Negligible
6	63 St John's Rd	-0.01	Imperceptible	Negligible
7	64 Greenham Rd	-0.01	Imperceptible	Negligible
8	CM1 Newbury	-0.03	Imperceptible	Negligible
9	Newbury Gardens Day Nursery	-0.01	Imperceptible	Negligible

5.28 With reference to the overall concentrations of PM<sub>10</sub> presented in Table 5.5 being well below the objective level of 25 µgm<sup>-3</sup> and the magnitude of change presented in Table 5.9 being “Imperceptible”, the “Significance” of change in PM<sub>10</sub> concentration is considered to be “Negligible”.

### Constraints

5.29 Constraints on development has been determined by considering the background concentrations of pollutants within the site and comparing these to the NAQO levels for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>.

5.30 Within the site, concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> were 13.15 µgm<sup>-3</sup>, 14.64 µgm<sup>-3</sup> and 10.16 µgm<sup>-3</sup> respectively in 2019 (modelling verification year) and 10.82 µgm<sup>-3</sup>, 13.68 µgm<sup>-3</sup> and 9.42 µgm<sup>-3</sup> respectively in 2024 (base year of assessment). Future (2031) concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are predicted to be 9.44 µgm<sup>-3</sup> 13.48 µgm<sup>-3</sup> 9.26 µgm<sup>-3</sup> respectively.

5.31 The concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> within the site are well below the NAQO levels and subsequently there will not be any significant levels of pollutants, based on the background pollutants concentrations and the proximity of main roads.



## 6.0 MITIGATION

### Construction Phase

6.1 Monitoring during the construction phase should be considered in the management of operations to ensure that the nuisance thresholds are not exceeded at nearby sensitive locations. However, it is important to note that such limits are subjective, e.g. as “nuisance” caused by dust does not currently have a statutory limit applied to it.

6.2 Monitoring of dust could be achieved using a variety of sampling techniques, for example deposit (“Frisbee”) gauges, glass slides or high-volume air samplers located around the site perimeter and at the sensitive locations up to 250 metres from the site boundary.

6.3 In addition, there are a number of Best Practice mitigation measures that can be used by contractors to ensure that the impacts experienced in close proximity to the construction site are minimal. Sample mitigation:

6.4 Specific to demolition:

- Ensure effective water suppression is used during demolition operations;
- Avoid explosive blasting, using appropriate manual or mechanical alternatives;
- Bag and remove any biological debris or damp down such material before demolition; and

6.5 Effective site planning:

- Erect solid barriers to site boundary;
- Dust generating activities to be located away from sensitive receptors;
- All site personnel will be fully trained;
- There will be a trained and responsible manager on site during working times to maintain a logbook and carry out site inspections;
- There will be no run off of mud or water from the site;
- Relevant legislation and guidance will be adhered to; and

6.6 Construction Traffic



- All vehicles to switch off engines (no idling);
- On road vehicles will comply to set emission standards;
- Effective vehicle cleaning and specific wheel-washing on leaving site;
- All loads entering site must be covered;
- All non-road mobile machinery (NRMM) should use ultra-low sulphur diesel where available; and

#### 6.7 Site Activities

- Minimise dust generating activities where possible;
- Use water as a dust suppressant where applicable;
- Stockpiles will be covered, enclosed, seeded or kept them sheeted; and
- If applicable, any concrete crushers/batchers will have the required permits.

6.8 It is recommended that liaison with West Berkshire Council Environmental Health Department be maintained throughout the construction process. In addition, the main contractor should nominate a representative (possibly the site manager) to act as a point of contact with the Council, the construction team and the local community to ensure that any air quality related issues that occur during the construction period can be dealt with effectively and promptly.

6.9 All other site sub-contractors should also nominate or appoint a suitable team member responsible for liaison with the lead contractor's representative and to ensure that sub-contractor construction activities are managed effectively.

6.10 Details of the proposed methodology for achieving this and procedures to follow should be set out in a Construction Environmental Management Plan (CEMP). This would be held on-site and would include relevant contact names, details, lines of communication and mitigation action plans. The document should be available to all site personnel who should be made aware of its existence and provide an undertaking that they will adhere to the guidance provided therein.

6.11 The mitigation of PM<sub>10</sub> releases due to material disturbance will be achieved in the same manner as the control of dust releases. By achieving effective control of sources of dust release, PM<sub>10</sub> releases can be minimized.



- 6.12 The most effective control of particulate releases from site plant will be achieved by ensuring that it is maintained in good working order, and is of the appropriate capacity and specification for the job being carried out. It should also be located away from the site perimeter, thereby maximizing the distance between source and receptor.
- 6.13 There may be occasions where breakdown of site plant could cause short-term releases of excess particulate matter (smoke) and odour. Short-term releases may also occur during start up (of diesel engines, etc). Regular visual checks and routine maintenance should be applied in accordance with the plant specification, to ensure that these releases are minimized. Faulty site plant should be decommissioned until repairs have been carried out and have been tested and found to be operating satisfactorily.
- 6.14 Detailed mitigation measures to control construction traffic should be discussed with officers from West Berkshire Council, in order to establish the most suitable access routes for the site traffic and service vehicles. The most effective mitigation will be achieved by ensuring that construction traffic vehicles are kept clean and sheeted when on public highways (through the use of wheel washers) and avoid using sensitive roads. Timing of large-scale vehicle movements to avoid peak hours on the local road network would also be beneficial. Clear signposting to the site access for construction traffic should also be provided and direct traffic along routes agreed with the Council.
- 6.15 Early morning delivery vehicles, which may arrive prior to the site opening, should be prevented from waiting on the approach roads to the site. If site deliveries arrive prior to the site opening, they should wait away from the site entrance and residential properties, at more suitable locations.
- 6.16 With the implementation of the appropriate mitigation measures detailed above, but not restricted to the information detailed above, the residual effects will be **“Not Significant”**.

### **Operational Phase**

- 6.17 Taking into the account predicted “Negligible” decreases in NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations at sensitive receptors due to the development generated traffic following the completion of the development, and the fact that concentrations of





NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are predicted to be well below the NAQO level of 40 µgm<sup>-3</sup> (NO<sub>2</sub> and PM<sub>10</sub>) and 25 µgm<sup>-3</sup> (PM<sub>2.5</sub>) no additional mitigation is proposed.

- 6.18 Within the development site, concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are predicted to be well below the NAQO level of 40 µgm<sup>-3</sup> (NO<sub>2</sub> and PM<sub>10</sub>) and 25 µgm<sup>-3</sup> (PM<sub>2.5</sub>). Therefore, there are no proposals to mitigate air quality within the site.



## 7.0 SUMMARY AND CONCLUSIONS

- 7.1 Stuart Michael Associates Limited (SMA), Consulting Engineers, has been appointed by Lochailort Newbury Ltd. (the Applicant) to prepare an Air Quality Assessment in support of a full planning application for the phased redevelopment of the Kennet Centre comprising the partial demolition of existing buildings, flexible-use commercial space, headquarters office building, 317 dwellings plus residents' ancillary facilities, access, car parking and cycle parking, landscaping & open space, sustainable energy installations, and associated works in Newbury, West Berkshire.
- 7.2 The site is considered to be in a highly accessible location with facilities within a 1km walk of the site. The proposed development will include a Green Travel Plan to reduce single car occupancy trips to and from the site.
- 7.3 Impacts from development generated traffic and the constraints on the development have been assessed using ADMS-Roads for 2024, the future base year 2031 (no development) and 2031 (with the proposed development).
- 7.4 The magnitude of change in annual mean NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> concentrations due to development generated traffic is predicted to be "Imperceptible" (<0.4 µgm<sup>-3</sup>) at the locations of all modelled sensitive receptors. Moreover, concentrations of air pollutants are well below their NAQO objective values. Therefore, the significance of development is considered **Negligible**.
- 7.5 During the Demolition phase, there is a Medium Risk of annoyance caused by dust soiling and health effects and Negligible ecological impacts due to an increase exposure in PM<sub>10</sub>.
- 7.6 During the Earthworks phase of development, there is a Medium Risk of annoyance caused by dust soiling and health effects due to increase exposure in PM<sub>10</sub>.
- 7.7 During the Construction phase of development, it has been assessed that there is a High Risk of potential annoyance to people and property caused by dust soiling and a Medium Risk of health effects due to an increase exposure in PM<sub>10</sub>. Therefore, mitigation may be required.
- 7.8 Throughout the Trackout processes, there is a Medium Risk of dust soiling and a Low Risk on human health effects due to an increase exposure in PM<sub>10</sub>.



- 7.9 For those cases where the risk category is Negligible (i.e. ecological), no specific mitigation measures is required beyond specific legislation.
- 7.10 With the implementation of the appropriate mitigation measures the residual effects during the earthworks and construction of the Development will be “**Not Significant**”.
- 7.11 Therefore, taking into account the proposed development’s decrease in air pollution during the operational stage, and the “not significant” impact arising from dust during the construction stage, it can be concluded that air quality should not be a determining factor in refusing planning consent.



## 8.0 APPENDICES

### Appendix 1 National Air Quality Objectives (NAQO)

National air quality objectives and European Directive limit and target values for the protection of human health						
Pollutant	Applies	Objective	Concentration measured as <sup>10</sup>	Date to be achieved by (and maintained thereafter)	European Obligations	Date to be achieved (by and maintained thereafter)
Particles (PM <sub>10</sub> )	UK	50 µg/m <sup>3</sup> not to be exceeded more than 35 times a year	24 hour mean	31 December 2004	50 µg/m <sup>3</sup> not to be exceeded more than 35 times a year	1 January 2005
	UK	40 µg/m <sup>3</sup>	annual mean	31 December 2004	40 µg/m <sup>3</sup>	1 January 2005
	Indicative 2010 objectives for PM <sub>10</sub> (from the 2000 strategy and Addendum) have been replaced by an exposure reduction approach for PM <sub>2.5</sub> (except in Scotland – see below)					
	Scotland	50 µg/m <sup>3</sup> not to be exceeded more than 7 times a year	24 hour mean	31 December 2010	50 µg/m <sup>3</sup> not to be exceeded more than 35 times a year	1 January 2005
	Scotland	18 µg/m <sup>3</sup>	annual mean	31 December 2010	40 µg/m <sup>3</sup>	1 January 2005
Particles (PM <sub>2.5</sub> ) Exposure Reduction	UK (except Scotland)	25 µg/m <sup>3</sup>	annual mean	2020	Target value - 25 µg/m <sup>3</sup>	2010
	Scotland	10 µg/m <sup>3</sup>		31 December 2020	Limit value - 25 µg/m <sup>3</sup>	1 January 2015
	UK urban areas	Target of 15% reduction in concentrations at urban background		Between 2010 and 2020	Target of 20% reduction in concentrations at urban background.	Between 2010 and 2020

National air quality objectives and European Directive limit and target values for the protection of human health						
Pollutant	Applies	Objective	Concentration measured as <sup>1</sup>	Date to be achieved by (and maintained thereafter)	European Obligations	Date to be achieved by (and maintained thereafter)
Nitrogen dioxide	UK	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1 hour mean	31 December 2005	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1 January 2010
	UK	40 µg/m <sup>3</sup>	annual mean	31 December 2005	40 µg/m <sup>3</sup>	1 January 2010
Ozone	UK	100 µg/m <sup>3</sup> not to be exceeded more than 10 times a year	8 hour mean	31 December 2005	Target of 120 µg/m <sup>3</sup> not to be exceeded by more than 25 times a year averaged over 3 years	31 December 2010
Sulphur dioxide	UK	266 µg/m <sup>3</sup> not to be exceeded more than 35 times a year	15 minute mean	31 December 2005	-	-
	UK	350 µg/m <sup>3</sup> not to be exceeded more than 24 times a year	1 hour mean	31 December 2004	350 µg/m <sup>3</sup> not to be exceeded more than 24 times a year	1 January 2005
	UK	125 µg/m <sup>3</sup> not to be exceeded more than 3 times a year	24 hour mean	31 December 2004	125 µg/m <sup>3</sup> not to be exceeded more than 3 times a year	1 January 2005
Polycyclic Aromatic Hydrocarbons	UK	0.25 ng/m <sup>3</sup> B[a]P	as annual average	31 December 2012	1.0 ng/m <sup>3</sup>	31 December 2012



National air quality objectives and European Directive limit and target values for the protection of human health						
Pollutant	Applies	Objective	Concentration measured as <sup>1</sup>	Date to be achieved by (and maintained thereafter)	European Obligations	Date to be achieved by (and maintained thereafter)
Benzene	UK	16.25 µg/m <sup>3</sup>	running annual mean	31 December 2003	-	-
	England and Wales	5 µg/m <sup>3</sup>	annual average	31 December 2010	5 µg/m <sup>3</sup>	1 January 2010
	Scotland, Northern Ireland	3.25 µg/m <sup>3</sup>	running annual mean	31 December 2010	-	-
1,3-butadiene	UK	2.25 µg/m <sup>3</sup>	running annual mean	31 December 2003	-	-
Carbon monoxide	UK	10 mg/m <sup>3</sup>	maximum daily running 8 hour mean/in Scotland as running 8 hour mean	31 December 2003	10 mg/m <sup>3</sup>	1 January 2005
Lead	UK	0.5 µg/m <sup>3</sup>	annual mean	31 December 2004	0.5 µg/m <sup>3</sup>	1 January 2005
		0.25 µg/m <sup>3</sup>	annual mean	31 December 2008	-	-

National air quality objectives and European Directive limit and target values for the protection of vegetation and ecosystems						
Pollutant	Applies	Objective	Concentration measured as <sup>1</sup>	Date to be achieved by (and maintained thereafter)	European Obligations	Date to be achieved by (and maintained thereafter)
Nitrogen oxides	UK	30 µg/m <sup>3</sup>	annual mean	31 December 2000	30 µg/m <sup>3</sup>	19 July 2001
Sulphur dioxide	UK	20 µg/m <sup>3</sup>	annual mean	31 December 2000	20 µg/m <sup>3</sup>	19 July 2001
	UK	20 µg/m <sup>3</sup>	winter average	31 December 2000	20 µg/m <sup>3</sup>	19 July 2001
Ozone: protection of vegetation and ecosystems	UK	Target value of 18,000 µg/m <sup>3</sup> based on AOT40 to be calculated from 1 hour values from May to July, and to be achieved, so far as possible, by 2010	Average over 5 years	1 January 2010	Target value of 18,000 µg/m <sup>3</sup> based on AOT40 to be calculated from 1 hour values from May to July, and to be achieved, so far as possible, by 2010	1 January 2010





## Appendix 2 EIA Screening Opinion

01 December 2020

Mr James Croucher  
Lochailort Newbury

By email: james.croucher@lochailort-investments.com

### Development & Planning

Council Offices  
Market Street, Newbury  
Berkshire, RG14 5LD

**Our Ref:** 20/02647/SCREEN

**Your Ref:**

**Contact Centre:** 01635 519111

**Email:** planapps@westberks.gov.uk

Dear Mr Croucher

### Screening opinion under the Town and Country Planning (Environmental Impact Assessment) Regulation 2017

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**Reference:** 20/02647/SCREEN

**Site:** The Kennet Centre, Bartholomew Street, Newbury RG14 5EN

**Proposal:** Demolition of existing covered shopping centre other than multi-storey car park and 2009 cinema/leisure wing. Erection of new mixed use development comprising (i) approximately 400 dwellings of mixed type and size to include ancillary residents' facilities (ii) up to 8,500sqm office building or, in the alternative, approximately 120 retirement living units to include ancillary residents' facilities (iii) approximately 30 flexible-use commercial units (iv) public realm works including pedestrian links and open spaces (v) landscaping (vi) car and cycle parking (vii) open-loop Ground Source Heat Pump system; and (viii) associated works

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Thank you for your letter dated 11 November 2020. In accordance with Regulation 6 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the Council is required to adopt a screening opinion as to whether the proposal constitutes 'EIA development', and therefore whether Environmental Impact Assessment (EIA) is required as part of the decision-making process. Information on EIA is available from the Planning Practice Guidance:

<https://www.gov.uk/guidance/environmental-impact-assessment>

The proposed development falls within the column 1 description at paragraph 10 (b) (Urban development projects) of Schedule 2. It is not located in a sensitive area. It does exceed the relevant threshold in column 2 in that it would exceed 150 dwellings. The proposal is therefore "Schedule 2 development" within the meaning of the Regulations.

However, taking into account the selection criteria in Schedule 3, it is not considered that the proposal is likely to have significant effects on the environment. Accordingly, the proposal is **NOT considered "EIA development"** within the meaning of the Regulations. An Environmental Statement is not required. Please see the written statement in Annex A to this letter, which gives the reasons for this screening opinion.



The judgements on the significance of the effects on the environment are made solely in relation to the EIA Regulations, and any conclusions that 'significant environmental effects' are unlikely in terms of the Regulations does not necessarily denote that such impacts would be regarded as acceptable when considering a planning application. Neither the screening opinion, nor any statement within this letter, should be construed as precluding the Council from concluding that the development would have environmental impacts, albeit not significant in terms of the Regulations.

According to the Planning Practice Guidance, there may, exceptionally, be cases where a screening opinion has been issued but it becomes evident that it needs to be changed, for example, because new evidence comes to light. This screening opinion is issued based on the evidence currently available, having taken reasonable steps to obtain relevant information. Given the overriding purpose of EIA, the Council is bound to review its position in light of any new evidence, for example, through consultation during any forthcoming application.

A copy of this screening opinion will be placed on the Planning Register. If you wish to discuss this screening opinion, please contact Simon Till on 01635 519427 or [simon.till@westberks.gov.uk](mailto:simon.till@westberks.gov.uk).

Yours sincerely

***Gary Rayner***  
**Development Control Manager**

Enc. Annex: Screening Opinion Written Statement





**ANNEX – SCREENING OPINION WRITTEN STATEMENT**

<b>Case Details:</b>	
Reference:	20/02647/SCREEN
Stage/Type:	Pre-application screening
Relevant history:	20/02647/SCREEN
Has the applicant supplied an ES for the current or previous (if reserved matters or conditions) application?	No

<b>Schedule 1</b>	
Is the proposed development Schedule 1 development as described in Schedule 1 of the EIA Regulations?	No
If YES, under which description of development i.e. Nos. 1-24?	N/A

<b>Schedule 2</b>	
Is the proposed development Schedule 2 development as described in Column 1 of Schedule 2 of the EIA Regulations?	Yes
If YES, under which description of development in Column 1 i.e. Nos. 1- 13?	10(b) – Urban Development Project
Is the development within, partly within, or near a 'sensitive area' as defined by Regulation 2 of the EIA Regulations?	No
If YES, which area?	NA
Are the applicable thresholds/criteria in Column 2 exceeded/met?	Yes
If yes, which applicable threshold/criteria?	Development of over 150 dwellings
Is it necessary to issue a screening opinion?	Yes

<b>Decision</b>	
Is an ES required?	No
Reason	<p>When screening Schedule 2 projects, the local planning authority must take account of the selection criteria in Schedule 3 of the Regulations. Not all of the criteria will be relevant in every case. According to the Planning Practice Guidance (PPG), only a very small proportion of Schedule 2 development will require an assessment. While the development would exceed the threshold of 150 dwellings the Schedule 3 criteria have been assessed as below:</p> <p><b>FULL ASSESSMENT</b></p> <p>1. In terms of the characteristics of the development:</p> <p>(a) The development is on an existing fully developed site and is not considered to increase the quantum of development to a scale or intensity significantly beyond that of the existing development for the purposes of the meaning of the Regulations;</p> <p>(b) In terms of the cumulative impact with other developments, due to the existing developed nature of the site it is not considered that taken cumulatively with other approved development in the vicinity the proposed works would result in an increase in impact that would be significant within the meaning of the Regulations;</p> <p>(c) The proposed works are not considered to be such as to result in impacts on natural resources that would be significant within the meaning of the Regulations;</p>



	<p>(d) The proposed works are not considered to be such as to result in impacts in terms of the production of waste that would be significant within the meaning of the Regulations;</p> <p>(e) The proposed works are not considered to be such as to result in impacts in terms of the pollution or nuisances that would be significant within the meaning of the Regulations;</p> <p>(f) The proposed works are not considered to be such as to result in impacts in terms of the the risk of major accidents and/or disasters that would be significant within the meaning of the Regulations;</p> <p>(g) The proposed works are not considered to be such as to result in impacts in terms risks to human health that would be significant within the meaning of the Regulations.</p> <p>2. In terms of the location of development:</p> <p>(a) The existing an approved land use are similar to that proposed and are therefore not considered to raise concerns in respect of significant impacts on terms of the environmental sensitivity of the geographical area within the meaning of the Regulations;</p> <p>(b) The proposed works are not considered to be such as to result in detrimental impacts on natural resources within the meaning of the Regulations;</p> <p>(c) The proposed works are not considered to be such as to result in detrimental impacts on the absorption capacity of the natural environment within the meaning of the Regulations.</p> <p>3. In terms of the types and characteristics of the potential impact the proposed works are not considered to have a significant impact within the meaning of the Regulations that would stand to be assessed under the criteria of Schedule 3, part 3.</p> <p>Overall, the potential environmental effects of the development are considered insignificant in terms of the EIA Regulations.</p>
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### Appendix 3 Benson Wind Rose – 2019

