

TECHNICAL NOTE – AIR QUALITY

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Introduction

Entran Ltd have been commissioned to carry out an air quality assessment for the development of land at Wises Lane. The site is located on open land to the south of the A2 and to the east of the A249. Detailed information to inform the air quality assessment is not currently available, however our initial findings are detailed below.

Summary of Key Air Quality Legislation and Policy

The Government's policy on air quality within the UK is set out in the Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland¹. It defines a framework for reducing hazards to health from air pollution and ensuring that international commitments are met in the UK. The AQS sets standards and objectives for ten main air pollutants to protect health, vegetation and ecosystems. These are benzene (C₆H₆), 1,3-butadiene (C₄H₆), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), particulate matter (PM₁₀, PM_{2.5}), sulphur dioxide (SO₂), ozone (O₃) and polycyclic aromatic hydrocarbons (PAHs).

The air quality standards are long-term benchmarks for ambient pollutant concentrations which represent negligible or zero risk to health, based on medical and scientific evidence. The air quality objectives are medium-term policy based targets set by the Government which take into account economic efficiency, practicability, technical feasibility and timescales.

Many of the objectives in the AQS were made statutory in England through the Air Quality (England) Regulations 2000² and the Air Quality (England) Amendment Regulations 2002³ for the purpose of Local Air Quality Management (LAQM). The Air Quality Standards Regulations 2010⁴ adopted the limit values required by the EU Directive 2008/50/EC⁵ into UK law.

¹ The Air Quality Strategy for England, Scotland, Wales and Northern Ireland – July 2007

² The Air Quality (England) Regulations 2000 – Statutory Instrument 2000 No 928

³ The Air Quality (England) (Amendment) Regulations 2002 – Statutory Instrument 2002 No 3043

⁴ The Air Quality Standards Regulations 2010 – Statutory Instruments 2010 No 1001

⁵ Air Quality Directive 2008/50/EC

Of particular relevance to this assessment are the objectives for NO₂, and particulate matter (PM₁₀ and PM_{2.5}) as these are the key pollutant emitted from road vehicle exhausts that are the most likely to be approaching the objective levels. It should be noted that whilst the AQS contains a framework for considering the effects of PM_{2.5}, there is currently no statutory objective incorporated into UK laws at this time. The objective levels for these pollutants are set out in Table 1 below:

Table 1: AQS Objectives Relevant to this Assessment

Pollutant	Objective Level (µg/m ³)	Averaging Period	No. of Permitted Exceedances
NO ₂	200 (a)	1-Hour	18 per annum (99.8 th percentile)
	40 (a)	Annual	-
PM ₁₀	200 (a)	24-Hour	35 per annum (90.4 th percentile)
	50 (a)	Annual	-
PM _{2.5}	25 (b)	Annual	
(a) Air Quality Standards Regulations (2010)			
(b) EU Directive Limit Value			

Baseline Conditions

Swale Borough Council (SBC) has declared six Air Quality Management Area (AQMA) within their regulatory area, which are as follows:

- AQMA 1 – Newington declared in 2009 for
- AQMA 2 – Ospringe Street declared in June 2011
- AQMA 3 – St Pauls Street, Milton, Sittingbourne declared in January 2009
- AQMA 4 – East Street / Canterbury Road, Sittingbourne declared in January 2013
- AQMA 5 – Teynham declared in December 2015
- AQMA 6 – Extension of Ospringe Street AQMA declared in May 2016

The closest AQMA to the site is AQMA 3, which was declared for potential exceedances of the annual mean NO₂ objective. This AQMA is located approximately 1.5km to the northeast of the site.

Monitoring Data

SBC currently monitors air pollutant levels using four continuous automatic monitors and a network of passive diffusion tubes. The automatic monitors are all located within the AQMAs,

data from these monitoring locations are not considered to be representative of the likely concentrations at the Site.

Within Sittingbourne, SBC also currently monitors NO₂ concentrations using passive diffusion tubes at 13 locations including two urban background sites. Of these sites, SW88 Sonara Way is considered likely to be the most representative of the concentrations at the Site, although it is situated in a more urban environment than the Site and therefore concentrations are likely to be higher. Data from this and the other nearest monitoring locations to the Site is reproduced in Table 1 below.

Table 1: NO₂ Concentrations recorded at the nearest monitoring locations

Monitoring Site	Site Type	Distance from Site	2011	2012	2013	2014	2015
SW88	Urban Background	1.5km	-	27.2	24.3	22.3	19.5
SW62	Roadside	250	46.5	47.5	39.9	37.1	37.2
SW58	Roadside	1.5km	36.8	31.1	28.6	39.8	33.5
SW83	Roadside	1.5km	34.7	33.6	33.3	28.4	29.1

As illustrated in Table 1, the background NO₂ concentration measured in the area is well below the AQS objective level for annual mean NO₂ concentrations of 40µg/m³. Since 2013, the roadside concentrations have also been below the AQS objective level.

Defra Background Maps

Additional information on background concentrations for the year 2017 in the vicinity of the site have been obtained from the Defra background pollutant maps. This data is set out in Table 2 below.

Table 2: Estimated Annual Mean Background Concentrations from Defra Maps (µg/m³)

Pollutant	Background Concentrations at Development Site
NO ₂	12.1
PM ₁₀	16.0
PM _{2.5}	11.4

The background concentrations obtained from the Defra website for the year 2017 are below the relevant AQS objective levels.

Review of Proposals

The proposals include the provision of a new road through the Site which, along with providing access to the Site, also links the A249 and Borden Lane thereby providing a bypass to much of the Sittingbourne town centre and alleviating traffic along the A2.

Review of the initial traffic flows available at the time of writing has indicated that the new road link will specifically alleviate traffic along the A2 between the Key Street Roundabout and Adelaide Drive, it will also act to reduce traffic flows along The Street in Borden Village.

The development is sensitively designed to ensure areas considered to be sensitive to air quality are set back from the proposed road link and sufficiently distant from the existing main pollution sources, namely the A2 and A249.

Conclusions

Based on the above information, it is considered likely that the concentrations of pollutants within the site are below the relevant AQS objective levels. As background concentrations are well below the relevant objective levels and the new road link will act to alleviate traffic along the most congested road in the vicinity of the Site (A2), it is considered unlikely that the proposals will lead to any breaches of the relevant standards.

Furthermore, it is considered likely that the proposed development will result in some improvement in air quality along the A2 between Key Street Roundabout and Adelaide Drive and along The Street in Borden Village as traffic flows are predicted to be lower in these locations due to the introduction of the new link road. Overall it is anticipated that the proposed scheme would not have a significant impact on local air quality.

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