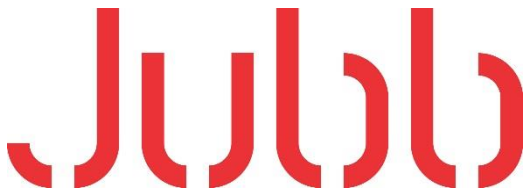


Project Number
17246



Title: Topic Note#01 – Air Quality

Date: 26/03/2018

1.0 Introduction

1.1 The proposed development site is located approximately 5 km to the northwest of Bedford town centre. The site is bounded by Northampton Road to the north, the A428 to the west, and existing residential properties to the south and east.

2.0 Baseline Conditions

2.1 Existing sources of emissions have been identified using a number of approaches with Defra's Pollutant Release and Transfer Register being used to establish Industrial and Waste Management sources and Bedford Borough Council's (BBC) Air Quality Review and Assessment reports being used to identify local sources.

2.2 Existing air quality at and around the site is informed through monitoring carried out Bedford Borough Council and is also informed by Defra national pollution mapping.

2.3 A search of the UK Pollutant Release and Transfer Register has not identified any significant industrial or waste management sources that are likely to affect the proposed development, in terms of air quality.

2.4 BBC has investigated air quality within its area as part of its responsibilities under the Local Air Quality Management (LAQM) regime.

2.5 An Air Quality Management Area (AQMA) is identified locally and covers much of Bedford Town Centre and is located 3.6 km southeast of the proposed development site. This AQMA has been identified due to exceedances of the annual mean nitrogen dioxide objective.

2.6 In terms of PM10 BBC have concluded that there are no exceedances of the objectives (Bedford Borough Council, 2016). It is, therefore, reasonable to assume that existing PM10 levels will not exceed the objectives within the study area.

2.7 BBC operate both automatic monitoring sites (with the nearest being some 4.5km south east of the site) as well as number of nitrogen dioxide monitoring sites using diffusion tubes – all these sites are within or in close proximity to the AQMA.

2.8 While measured nitrogen dioxide concentration was found to be above the annual mean objective level at a single diffusion tube monitoring site in 2016, at all other monitoring sites the nitrogen dioxide concentration were found to be below the objective.

2.9 Set against the historic data, at most sites there is an overall steady downward trend in nitrogen dioxide concentrations over the past six years; this is consistent with the progressive introduction of new vehicles operating to more stringent emission standards.

2.10 Thus, given the monitoring results within the AQMA, concentrations at the proposed development are thus likely to be below the objective.

3.0 Key Opportunities and Constraints

- 3.1 The operational impacts arising from additional traffic due to the proposed development, have been assessed. Concentrations have been modelled at 18 worst-case receptors, representing existing properties where impacts are expected to be greatest, including properties adjacent to the AQMA.
- 3.2 In addition, the impacts of emissions from local roads on the air quality for future residents have been assessed at 14 locations within the proposed development. In the case of nitrogen dioxide, a sensitivity test has also been carried out which considers the potential under-performance of emissions control technology on modern diesel vehicles.
- 3.3 With regard to existing receptors, increases in annual mean concentrations of PM10 and PM2.5, relative to the objectives, will be 0% (when rounded), and the impacts will all be negligible. In the case of annual mean nitrogen dioxide, the percentage increases are predicted to range from 0% to 1%, and the impacts will all be negligible.
- 3.4 Air quality conditions for residents within the proposed development have been shown to be acceptable, with concentrations well below the air quality objectives.
- 3.5 The overall operational air quality effects of the development are judged to be 'not significant'.

4.0 Necessary Mitigation and Enhancements

- 4.1 The EPUK/IAQM guidance advises that good design and best practice measures should be considered, whether or not more specific mitigation is required. The proposed developments would incorporate following good design and best practice in setting back the development buildings from roads by at least 10 m.
- 4.2 The assessment has demonstrated that the proposed development will not cause any exceedances of the air quality objectives and that the overall effect of the proposed development will be 'not significant'.
- 4.3 Therefore, further mitigation measures would not be required to support the developments.

5.0 Summary

- 5.1 The air quality impacts associated with the proposed residential developments at Land South of Northampton Road have been assessed.
- 5.2 The assessment has demonstrated that future residents of the proposed development will experience acceptable air quality, with pollutant concentrations below the air quality objectives.
- 5.3 The development will generate additional traffic on the local road network, but the assessment has also shown that there will be no impacts.
- 5.4 Overall, the air quality effects of the proposed development are judged to be 'not significant'.