

Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Written Statement of Oral Case ISH3 [Appendix B - Air Quality Effects at Acorns Cafe and Burbage Common Play Area]

Document reference: 18.7.2

Revision: 1

14 November 2023

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
Regulation 5(2)(q)

Hinckley National Rail Freight Interchange

AIR QUALITY TECHNICAL NOTE

Project	Hinckley National Rail Freight Interchange		
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Air Quality Impacts at Acorns Café

With regards to air quality, pollutant concentrations were modelled across the HNRFI Site, including at Acorns Café and play area, as shown in Figures 9.25 – 9.30 (Document References: APP 264 - 269).

Modelled pollutant concentrations at Acorns Café and play area, in both the 2026 with HNRFI and 2036 with HNRFI scenarios are shown in **Table 1** below. The relevant air quality objectives for England are also presented for reference.

Table 1: Predicted pollutant concentrations at Acorns Cafe

Pollutant	Predicted annual mean concentration range ($\mu\text{g.m}^{-3}$) at Acorns Café		Air Quality Objective
	2026 with HNRFI	2036 with HNRFI	
NO ₂	7.0 - 9.0	8.0 - 9.0	¹ Annual mean – 40 $\mu\text{g.m}^{-3}$ ⁵ 1-hour mean not to be exceeded more than 18 times per year – 200 $\mu\text{g.m}^{-3}$
PM ₁₀	12.0 -13.0	12.0 -13.0	¹ Annual mean – 40 $\mu\text{g.m}^{-3}$ ⁵ 24-hour mean not to be exceeded more than 35 times per year – 50 $\mu\text{g.m}^{-3}$
PM _{2.5}	7.5 - 8.0	7.5 - 8.0	¹ Annual mean – 20 $\mu\text{g.m}^{-3}$ ¹ 2028 Annual mean interim target – 12 $\mu\text{g.m}^{-3}$ ¹ 2040 Annual mean – 10 $\mu\text{g.m}^{-3}$

¹ long term objective, ⁵ short term objective

Table 1 shows that the predicted pollutant concentrations are below the current annual mean air quality objectives for England. In accordance with Defra guidance¹, the short term objectives for NO₂ and PM₁₀ apply at Acorns Café and play area. With regard to short term

¹ Defra (2022) Local Air Quality Management Technical Guidance LAQM.TG(22)

air quality objectives for NO₂, in accordance with Defra guidance¹, where the predicted annual mean NO₂ concentrations are less than 60µg.m⁻³, it may be assumed that exceedances of the 1-hour mean NO₂ objective are unlikely. With regards to the short term air quality objectives for PM₁₀, the following calculation, as detailed in Defra guidance¹, was utilised to calculate the number of exceedances of the 24-hour mean PM₁₀ air quality objective:

$$\text{Number of 24-Hour Mean Exceedance} = -18.5 + 0.00145 * \text{Annual Mean}^3 + (206 / \text{Annual Mean})$$

The annual mean NO₂ concentration is predicted to be below 60µg.m⁻³, therefore, it is unlikely the short term NO₂ objective will be exceeded. The above calculation has been used to determine whether the short term PM₁₀ objective is likely to be exceeded. It is not predicted that the 24-hour mean will be exceeded more than 35 times per year, therefore, the short term PM₁₀ objective is unlikely to be exceeded.

Furthermore, a review of the predicted impacts at the two closest modelled receptors to Acorns Café, R111 and R219 has been undertaken. R111 is located along the B4668 Leicester Road, west of Burbage Common Road, and R219 is located at the junction of the B4668 Leicester Road and the A47 Link Road. These locations are situated closer to these roads and therefore anticipated to experience a higher concentration change as a result of the HNRFI. The predicted impacts at both of these locations are negligible and therefore not significant. Due to the location of these receptors located adjacent to roads affected by the HNRFI, it is expected that impacts at locations adjacent to the affected road network would be considered conservative in relation to the impacts at Acorns Café.

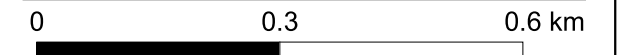
It is therefore considered that the impacts of the HNRFI on Acorns Café and play area will be negligible and not significant, and the predicted pollutant concentrations will be below the current relevant objectives for England.

Amendment to Figure 9.29

It should be noted that *Figure 9.29 : Operational Phase Road Traffic Emissions – Main HNRFI Site Annual Mean PM₁₀ Concentrations – Future Year* (Document reference: APP-268) shows the incorrect concentrations ranges in the figure legend. An updated figure with the correct concentrations ranges is shown in **Appendix A** of this technical note for submission at Deadline 3.

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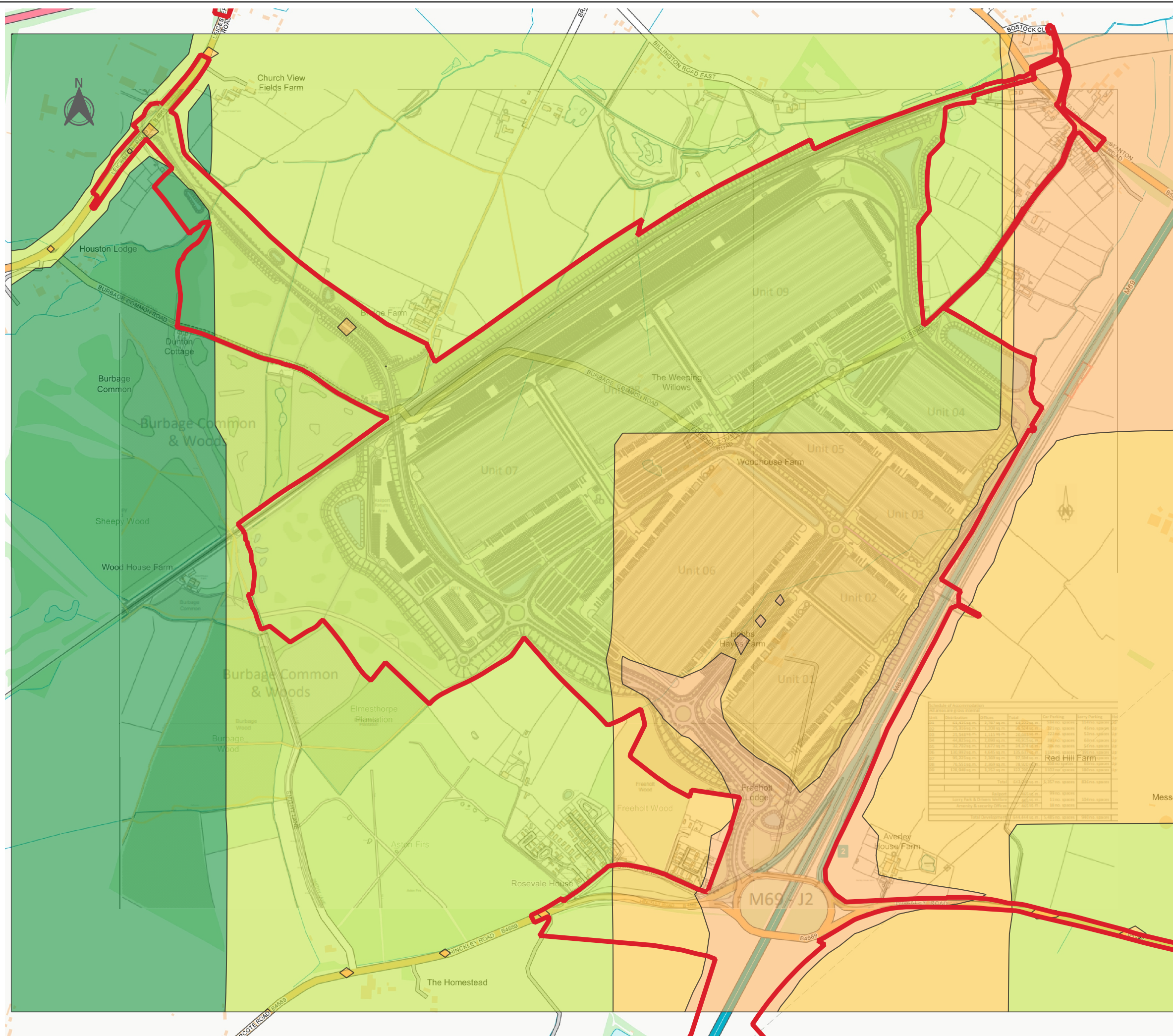


Key:

— Order Limits

Annual Mean PM₁₀ Concentrations (µg.m⁻³)

- 12.0 - 13.0
- 13.0 - 14.0
- 14.0 - 15.0
- 15.0 - 19.0



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ES Figure 9.29 - Operational Phase Road Traffic Emissions - Main HNRFI Site Annual Mean PM₁₀ Concentrations - Future Year

APFP Regulation: 5(2)(a)

Document Ref: 6.3.9.29

Drawing Number: Figure 9.29

Drawing Status: Final

Revision: V2

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