

Tritax Symmetry (Hinckley) Limited

## **HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE**

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### **The Hinckley National Rail Freight Interchange Development Consent Order**

Project reference TR050007

### **ADDENDUM 6.4.1 AIR QUALITY PM Sensitivity Assessment**

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Planning Act 2008

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

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

Regulation 14

## ADDENDUM 6.4.1 AIR QUALITY PM Sensitivity Assessment

### Introduction

6.4.1.1 In March 2023, the UK Government published new air quality objectives in relation to concentrations of particulate matter (PM<sub>2.5</sub>). The latest legislation at the time that the air quality assessment and DCO application was prepared and submitted, in relation to the air quality objectives, were The Air Quality Standards Regulations 2010<sup>1</sup>. The Air Quality Standards Regulations<sup>1</sup> require that concentrations of PM<sub>2.5</sub> must not exceed an annual average of 20µg.m<sup>-3</sup>. In 2023, The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023<sup>2</sup> require that by 2040, concentrations of PM<sub>2.5</sub> in England must not exceed an annual average of 10µg.m<sup>-3</sup>. In addition, The Environmental Improvement Plan 2023<sup>3</sup> for England set interim targets that by 2028, an annual average of 12µg.m<sup>-3</sup> for PM<sub>2.5</sub> must not be exceeded. This is summarised in Table 6.4.1.1 below.

**Table 6.4.1.1: PM<sub>2.5</sub> Air Quality Objectives**

Legislation/Guidance	PM <sub>2.5</sub> Objective
The Air Quality Standards Regulation 2010	20 µg.m <sup>-3</sup>
The Environmental Improvement Plan 2023	12 µg.m <sup>-3</sup> by 2028
The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023	10 µg.m <sup>-3</sup> by 2040

6.4.1.2 Therefore, a sensitivity assessment was prepared to consider the updated PM<sub>2.5</sub> objectives in relation to the HNRFI DCO application. The modelled pollutant concentrations detailed in this Appendix remain as per those reported Appendix 6.2.9.11.

### Assessment of 2026 Construction Year against 2028 Interim Target of 12µg.m<sup>-3</sup>

6.4.1.3 The air quality model results for the 2026 Construction Year were compared to the 2028 interim target of 12µg.m<sup>-3</sup>. Table 6.4.1.2 below summarises the number of predicted exceedances of the 2028 interim target, in the 2026 construction year, both without the HNRFI and with the HNRFI. Conservative

<sup>1</sup> HMSO (2010) Statutory Instruments 2010 No. 1001 Air Quality Standards Regulations 2010. London: HMSO

<sup>2</sup> HMSO (2023) Statutory Instruments 2023 No. 96 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

<sup>3</sup> Defra (2023) Environmental Improvement Plan 2023, First revision of the 25 Year Environment Plan

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receptor locations were chosen and modelled to represent locations adjacent to roads where the impacts from traffic associated the HNRFI are most likely to be experienced.

**Table 6.4.1.2: Exceedances of the 2028 interim target of  $12\mu\text{g.m}^{-3}$  in the 2026 Construction Year**

Local Authority	Number of exceedances of the 2028 interim target of $12\mu\text{g.m}^{-3}$	
	Without HNRFI	With HNRFI
Blaby DC	0	0
Charnwood	0	0
Coventry	0	0
Daventry	0	0
Erewash	0	0
Hinckley and Bosworth	0	0
Harborough	0	0
North Warwickshire	0	0
Nuneaton & Bedworth	0	0
NWLDC	0	0
Rugby	0	0
Tamworth	0	0

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6.4.1.4 The modelled results show that there were no predicted exceedances of the 2028 interim target of  $12\mu\text{g}\cdot\text{m}^{-3}$  in the construction year of 2026, both without or with the HNRFI.

6.4.1.5 The impact of the HNRFI on  $\text{PM}_{2.5}$  concentrations in the 2026 construction year was negligible at the majority of modelled receptor locations. The impacts per Local Authority are shown in Table 6.4.1.3 below.

**Table 6.4.1.3: Impacts in relation to 2028 interim target**

Local Authority	Impact – 2026 Construction Year		
	Minor Adverse	Negligible	Minor Beneficial
Blaby DC	1	54	0
Charnwood	0	2	0
Coventry	0	5	0
Daventry	0	3	0
Erewash	0	3	0
Hinckley and Bosworth	5	101	1
Harborough	1	14	0
North Warwickshire	0	6	0
Nuneaton & Bedworth	0	6	0
NWLDC	0	12	0

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Rugby	2	10	0
Tamworth	0	6	0
<b>Total</b>	<b>9</b>	<b>222</b>	<b>1</b>

6.4.1.6 All impacts at modelled receptor locations are predicted to be negligible, minor adverse or minor beneficial in the 2026 construction year. Negligible impacts are predicted at 222 modelled receptor locations, minor adverse impacts are predicted at nine modelled receptor locations and minor beneficial impacts are predicted at one modelled receptor location. Therefore, the majority of the impacts were predicted to be negligible or beneficial, with only a small proportion experiencing minor adverse impacts.

6.4.1.7 In accordance with the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK) guidance<sup>4</sup>, negligible and minor impacts are considered to be not significant. The impact of the HNRFI, in relation to the 2028 PM<sub>2.5</sub> target of 12µg.m<sup>-3</sup> is, therefore, not significant. In addition, the HNRFI does not lead to any new exceedances of the 2028 interim target of 12µg.m<sup>-3</sup> in the 2026 construction year.

### Assessment of 2036 Opening Year against 2040 Air Quality Objective of 10µg.m<sup>-3</sup>

6.4.1.8 The air quality model results for the 2036 Opening Year were compared to the 2040 future objective of 10µg.m<sup>-3</sup>. Table 6.4.1.4 below summarises the number of predicted exceedances of the 2040 future objective, in the 2036 opening year, both without and with the HNRFI. Conservative receptor locations were chosen and modelled to represent locations adjacent to roads where the impacts from traffic associated the HNRFI are most likely to be experienced.

**Table 6.4.1.4: Exceedances of the 2040 future objective of 10µg.m<sup>-3</sup> in the 2036 Opening Year**

Local Authority	Number of exceedances of the 2040 future objective of 10µg.m <sup>-3</sup>	
	Without HNRFI	With HNRFI

<sup>4</sup> Institute of Air Quality Management and Environmental Protection UK (2017) Land-Use Planning and Development Control: Planning for Air Quality

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Blaby DC	7	7
Charnwood	0	1
Coventry	5	5
Daventry	0	0
Erewash	0	0
Hinckley and Bosworth	1	2
Harborough	2	2
North Warwickshire	0	0
Nuneaton & Bedworth	2	2
NWLDC	1	1
Rugby	6	6
Tamworth	4	4
<b>TOTAL</b>	<b>28</b>	<b>30</b>

6.4.1.9 The modelled results show that across the study area there were 28 exceedances and 30 exceedances of the 2040 future objective of  $10\mu\text{g.m}^{-3}$  in 2036 without HNRFI and with HNRFI, respectively. Therefore the HNRFI potentially leads to two new exceedances of the 2040 future objective, in the 2036 assessment year.

6.4.1.10 The impact of the HNRFI on  $\text{PM}_{2.5}$  concentrations in the 2036 opening year was negligible at the majority of modelled receptor locations. The impacts per Local Authority are shown in Table 6.4.1.5 below.

Table 6.4.1.5: Impacts in relation to 2040 interim target

Local Authority	Impact – 2036 Opening Year				
	Moderate Adverse	Minor Adverse	Negligible	Minor Beneficial	Moderate Beneficial
Blaby DC	0	0	55	0	0
Charnwood	0	0	2	0	0
Coventry	1	0	4	0	0
Daventry	0	0	3	0	0
Erewash	0	0	3	0	0
Hinckley and Bosworth	5	4	91	6	1
Harborough	2	0	13	0	0
North Warwickshire	0	0	6	0	0
Nuneaton & Bedworth	0	1	5	0	0
NWLDC	0	0	12	0	0
Rugby	0	3	9	0	0
Tamworth	0	0	6	0	0

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<b>TOTAL</b>	<b>8</b>	<b>8</b>	<b>209</b>	<b>6</b>	<b>1</b>
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6.4.1.11 The impact of the HNRFI in the 2036 opening year is predicted to be negligible at most modelled receptor locations. Negligible impacts were predicted at 209 modelled receptor locations, moderate adverse and minor adverse impacts were each predicted at eight receptor locations. Moderate beneficial impacts were predicted at six receptor locations and minor beneficial impacts were predicted at one receptor locations.

6.4.1.12 In accordance with the IAQM and EPUK guidance<sup>4</sup>, negligible and minor impacts are considered to be not significant. In accordance with the IAQM and EPUK guidance<sup>4</sup>, moderate impacts are considered to potentially significant. Moderate adverse and potentially significant adverse impacts are only predicted eight modelled receptor locations. A potentially significant beneficial impact is also predicted at one modelled receptor location. Therefore, the majority of the impacts were predicted to be negligible or beneficial, with only a small proportion experiencing moderate adverse impacts.

6.4.1.13 These moderate impacts have been reviewed in further detail in Table 6.4.1.6 below.

**Table 6.4.1.6: Moderate Adverse Impacts**

Local Authority	Receptor ID	PM <sub>2.5</sub> concentrations (µg.m <sup>-3</sup> ) – 2036 Opening Year			Change as a % of objective
		Without HNRFI	With HNRFI	Difference*	
Coventry	STR4	<b>11.0</b>	<b>11.0</b>	+0.04	0.5
Hinckley and Bosworth	R134	9.5	9.6	+0.15	1.3
	R135	9.7	10.0	+0.21	1.1
	R136	9.4	9.6	+0.19	1.1
	R180	9.4	9.7	+0.29	2.9



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	R181	10.0	<b>10.4</b>	+0.39	3.9
Harborough	R65	<b>10.1</b>	<b>10.4</b>	+0.25	2.5
	R68	9.1	9.3	+0.19	1.9

\* Discrepancies in changes due to rounding effects

6.4.1.14 Table 6.4.1.6 shows that out of the eight predicted moderate adverse impacts, there are only three of these receptor locations which experience exceedances of the 2040 future objective of  $10\mu\text{g.m}^{-3}$ . STR4 and R65 are predicted to exceed in both the without HNRFI and with HNRFI scenario. R181 is predicted to exceed in the with HNRFI scenario only, however the without HNRFI scenario is  $10\mu\text{g.m}^{-3}$ . The changes in concentrations between the without HNRFI and the with HNRFI scenario range from  $0.04\mu\text{g.m}^{-3}$  to  $0.39\mu\text{g.m}^{-3}$ , which are 0.5% to 3.9% of the 2040 future objective.

### Summary

6.4.1.15 Predicted  $\text{PM}_{2.5}$  concentrations at modelled human receptor locations were compared to the 2028 interim target of  $12\mu\text{g.m}^{-3}$  and the 2040 future objective of  $10\mu\text{g.m}^{-3}$ . Conservative receptor locations were chosen and modelled to represent locations adjacent to roads where the impacts from traffic associated the HNRFI are most likely to be experienced.

6.4.1.16 The results show that there are no predicted exceedances of the 2028 interim target in the 2026 construction year assessment. Negligible impacts were predicted at 222 receptor locations, minor adverse impacts were predicted at nine receptor locations and minor beneficial impacts were predicted at one receptor location. In accordance with guidance<sup>4</sup>, negligible and minor impacts are considered to be not significant. The impact of the HNRFI on concentrations of  $\text{PM}_{2.5}$  when considered in relation to the 2028 interim target are therefore considered to be not significant.

6.4.1.17 The results show that there are some exceedances of the 2040 future objective of  $10\mu\text{g.m}^{-3}$  in both the without and with HNRFI in the 2036 opening year. Negligible impacts were predicted at 209 receptor locations, moderate adverse and minor adverse impacts were each predicted at eight receptor locations, minor beneficial impacts were predicted at six receptor locations and moderate beneficial impacts at one receptor location. Therefore, the majority of the impacts were predicted to be negligible or beneficial, with only a small proportion experiencing moderate adverse impacts.

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- 6.4.1.18 Negligible and minor impacts are considered to be not significant and moderate impacts are considered to be significant. The impact of the HNRFI on concentrations of PM<sub>2.5</sub>, when considered in relation to the 2040 future objective, are not significant at the majority of receptor locations. The impact is considered to be potentially significant at eight receptor locations. However, only three of these locations experience an exceedance of the 2040 future objective in the with HNRFI scenario, two of which also experience the exceedance in the without HNRFI scenario.
- 6.4.1.19 It should be noted that the 2036 assessment utilised PM<sub>2.5</sub> background concentrations from 2030 as this is the latest year that Defra background maps are available. It is considered likely that there will be a decrease in concentrations between 2030 and 2036. In addition, emission factors and fleet mix have also been used for 2030, as this is the latest year that data is provided for in Defra's Emissions Factor Toolkit. It is therefore considered that 2036 modelled concentrations are likely to represent a robust assessment. In addition, the concentrations were modelled for the opening year of 2036 and compared to the 2040 objectives, therefore, there is also likely to be a reduction modelled PM<sub>2.5</sub> concentrations between 2036 and 2040. Overall, the impact of the HNRFI is predicted to be not significant in relation to the future PM<sub>2.5</sub> objectives, therefore, no mitigation is proposed in relation to PM<sub>2.5</sub> impacts.