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December 2023

London Luton Airport Expansion

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Volume 8 Additional Submissions (Examination)

8.143 Applicant's Response to Issue Specific Hearing 8 Action 21 - Hitchin AQMA Impact Assessment Summary note

Infrastructure Planning (Examination Procedure) Rules 2010

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The Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

London Luton Airport Expansion Development Consent Order 202x

8.143 APPLICANT'S RESPONSE TO ISSUE SPECIFIC HEARING 8 ACTION 21 - HITCHIN AQMA IMPACT ASSESSMENT SUMMARY NOTE

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1 INTRODUCTION

1.1.1 During consultation with North Hertfordshire District Council (NHDC) on the Statement of Common Grounds (SoCG), NHDC requested details on the modelled impacts of additional traffic generated by the Proposed Development on Air Quality Management Areas (AQMAs) in Hitchin.

1.1.2 This note has been prepared to summarise the results of the air quality dispersion modelling of road traffic emissions at AQMAs in Hitchin. The full results of the air quality assessment are detailed in Section 7.9 of **Chapter 7 Air Quality** of the Environmental Statement (ES) **[AS-076] and Appendix 7.3 of Chapter 7 Air Quality** of the ES **[APP-063].**

1.2 Air Quality Standards

1.2.1 **Error! Reference source not found.** sets out the air quality standards for annual mean nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$) which have been used in the air quality assessment, as detailed in section 7.2 of **Chapter 7 Air Quality** of the ES **[AS-076].**

Table 1: Air Quality Standards from the Environmental (Miscellaneous Amendments) (EU Exit) Regulations 2020 and the Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

Pollutant	Averaging Period	Air Quality Standard
Nitrogen dioxide (NO_2)	Annual mean	40µg/m^3
Particulate matter (PM_{10})	Annual mean	40µg/m^3
Fine particulate matter ($PM_{2.5}$)	Annual mean	10µg/m^3 to be achieved by 2040

1.3 Assessment scenarios

1.3.1 As described in section 3.6 of **Appendix 7.1 of Chapter 7 Air Quality of the ES [APP-061]**, there are three assessment Phases in the ES Core Planning Case. These include assessment Phase 1 (2027) with (Do Minimum (DM)) and without (Do Something (DS)) the Proposed Development, assessment Phase 2a (2039) with (DM) and without (DS) the Proposed Development , and assessment Phase 2b (2043) with (DM) and without (DS) the Proposed Development.

2 AIR QUALITY MANAGEMENT AREAS IN HITCHIN

2.1.1 Details of the Hitchin AQMAs declared in the study area are provided in Table 7.8 of **Chapter 7 Air Quality** of the ES **[AS-076]** and relevant information is extracted into Table 2 below. The location of the AQMAs in relation to the Proposed Development (listed as Main Application Site in the Figure legend) are shown in **Error! Reference source not found.**.

Table 2: Details of AQMAs in Hitchin

Details of AQMAs in Hitchin
NHDC AQMA Stevenage Road Declared in 2012 due to exceedances of the NO_2 annual mean standard. The AQMA is located along Stevenage Road, Hitchin, and includes properties on the south side of the road.
NHDC AQMA Payne's Park Declared in 2017 due to exceedances of the NO_2 annual mean standard. The AQMA is located along the roads surrounding Payne's Park Roundabout in Hitchin.

3 MODELLED RECEPTORS

3.1.1 There are three modelled human receptors in the NHDC AQMA Stevenage Road and one modelled human receptor in the NHDC AQMA Payne's Park which have been considered in the air quality assessment detailed in **Chapter 7 Air Quality** of the ES **[AS-076].** The details of these human receptors are shown in Table 3 and their locations shown in Figure 1**Error! Reference source not found.**. It should be noted there are 43 other human receptors that are modelled in Hitchin outside of the AQMAs. These are shown in Figure 2**Error! Reference source not found.**.

Table 3: Sensitive human receptors in Hitchin AQMAs

Site ID	Address	X	Y	Receptor Type	NHDC Hitchin AQMA
H17	28 Stevenage Road, Hitchin, SG4 9DL	518890	228295	Residential	NHDC AQMA Stevenage Road
H77	9 Dower Court, London Road, Hitchin, SG4 9EX	518720	228334	Residential	NHDC AQMA Stevenage Road
H188	41 Upper Tilehouse Street, Hitchin, SG5 2EE	518130	229043	Residential	NHDC AQMA Payne's Park
H265	54 Stevenage Road, Hitchin, SG4 9DR	518984	228278	Residential	NHDC AQMA Stevenage Road

Figure 1: Modelled receptors in Hitchin AQMAs

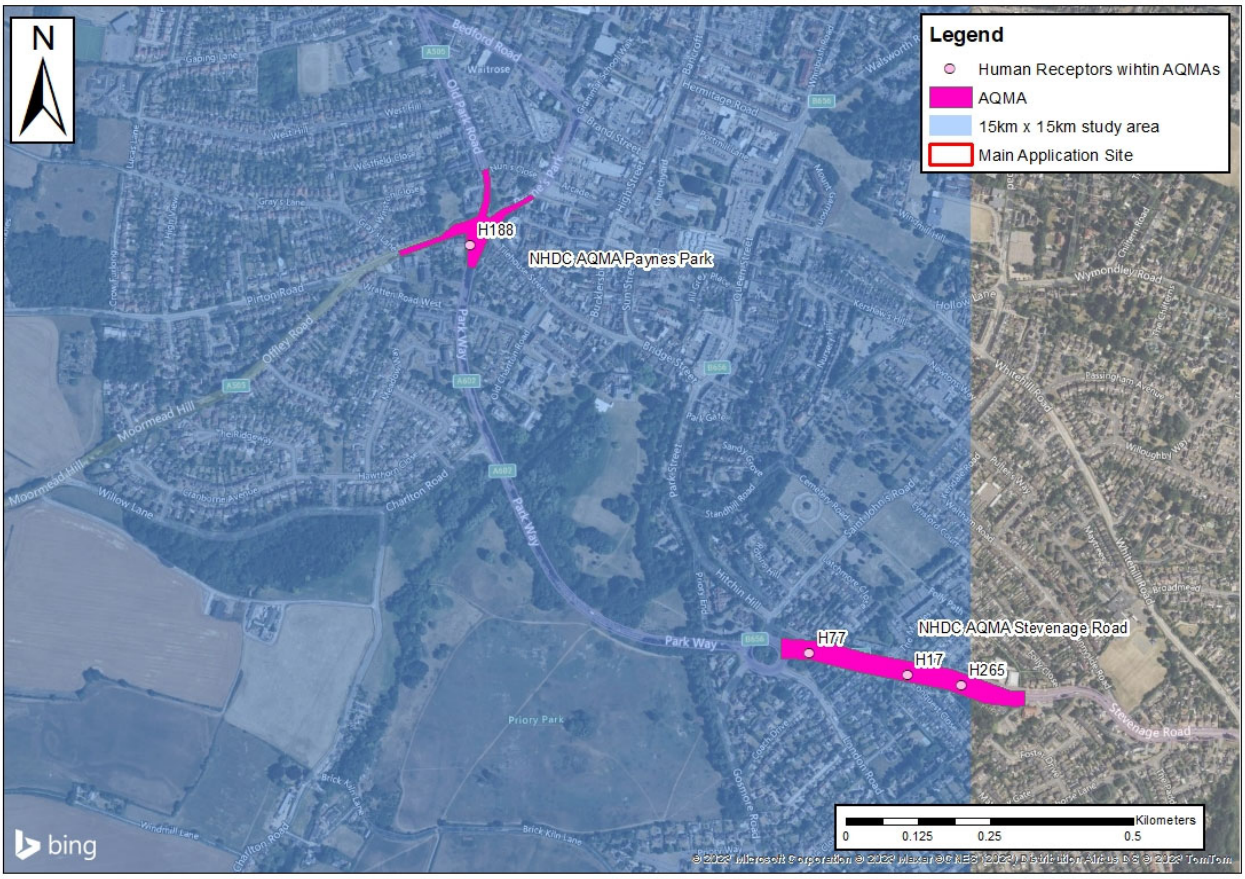

Figure 2: Modelled receptors in and surrounding Hitchin AQMAs

4 RESULTS

4.1.1 The air quality dispersion modelling results for the modelled receptors in the NHDC AQMA Stevenage Road and NHDC AQMA Payne's Park for assessment Phases 1 (2027), 2a (2039) and 2b (2043) for NO_2 are shown in **Error! Reference source not found.**, results for PM_{10} are shown in Table 5, and results for $PM_{2.5}$ are shown in Table 6. The full set of results for the air quality assessment are detailed in Section 7.9 of **Chapter 7 Air Quality** of the ES **[AS-076] and Appendix 7.3 of Chapter 7 Air Quality** of the ES **[APP-063].**

4.1.2 The maximum NO_2 concentration within the Hitchin AQMAs is expected to be 18.9µg/m^3, during assessment Phase 1 at receptor H77, in the NHDC AQMA Stevenage Road, in both DM and DS scenarios. This is well below the annual mean objective of 40µg/m^3.

4.1.3 All receptors in both of the Hitchin AQMAs are expected to have negligible impacts, and are below the air quality standard for annual mean NO_2 concentrations.

4.1.4 The maximum PM_{10} concentration within the Hitchin AQMAs is expected to be 15.3µg/m^3, during assessment Phase 2b at receptor H188, in the NHDC AQMA Payne's Park, in the DM scenario, dropping to a concentration of 15.1µg/m^3 in the DS scenario. This is well below the annual mean objective of 40µg/m^3.

4.1.5 All receptors in both of the Hitchin AQMAs are expected to have negligible impacts, and are below the air quality standard for annual mean PM_{10} concentrations.

4.1.6 The maximum $PM_{2.5}$ concentration within the Hitchin AQMAs is expected to be 10.2µg/m^3, during assessment Phase 1, Phase 2a, and 2b at receptor H188, in the NHDC AQMA Payne's Park in both the DM and DS scenario.

4.1.7 All receptors in both of the Hitchin AQMAs are predicted to experience negligible impacts.

4.1.8 Based on the monitored and modelled annual mean concentrations, the impact of NO_2, PM_{10} and $PM_{2.5}$ are not considered to be at risk of exceeding the short-term standards as outlined in **Chapter 7 [AS-076]**, **Paragraphs 7.7.7** and **7.7.8**, therefore an assessment of short-term effects was scoped out.

Table 4: Hitchin AQMA NO_2 human receptor results

Site ID	X	Y	DM result (µg/m^3)	DS result (µg/m^3)	Change (DM to DS)	Impact
Phase 1 (2027)						
H17	518890	228295	14.7	14.7	<0.1	Negligible
H77	518720	228334	18.9	18.9	<0.1	Negligible
H188	518130	229043	16.9	17.0	<0.1	Negligible
H265	518984	228278	14.7	14.7	<0.1	Negligible
Phase 2a (2039)						
H17	518890	228295	13.2	13.7	0.5	Negligible
H77	518720	228334	16.3	17.5	1.2	Negligible
H188	518130	229043	15.1	15.1	<0.1	Negligible
H265	518984	228278	13.2	13.7	0.5	Negligible
Phase 2b (2043)						
H17	518890	228295	13.2	13.7	0.5	Negligible
H77	518720	228334	16.1	17.3	1.2	Negligible
H188	518130	229043	15.0	15.0	<0.1	Negligible
H265	518984	228278	13.2	13.7	0.6	Negligible

Table 5: Hitchin AQMA PM_{10} human receptor results

Site ID	X	Y	DM result (µg/m^3)	DS result (µg/m^3)	Change (DM to DS)	Impact
Phase 1 (2027)						
H17	518890	228295	14.1	14.1	<0.1	Negligible
H77	518720	228334	14.5	14.5	<0.1	Negligible
H188	518130	229043	15.1	15.1	<0.1	Negligible
H265	518984	228278	14.1	14.1	<0.1	Negligible
Phase 2a (2039)						
H17	518890	228295	14.1	14.1	<0.1	Negligible
H77	518720	228334	14.6	14.7	0.2	Negligible
H188	518130	229043	15.2	15.1	-0.1	Negligible
H265	518984	228278	14.1	14.1	<0.1	Negligible
Phase 2b (2043)						
H17	518890	228295	14.1	14.1	<0.1	Negligible
H77	518720	228334	14.6	14.7	0.2	Negligible
H188	518130	229043	15.3	15.1	-0.1	Negligible
H265	518984	228278	14.1	14.1	<0.1	Negligible

Table 6: Hitchin AQMA $PM_{2.5}$ human receptor results

Site ID	X	Y	DM result (µg/m^3)	DS result (µg/m^3)	Change (DM to DS)	Impact
Phase 1 (2027)						
H17	518890	228295	9.6	9.6	<0.1	Negligible
H77	518720	228334	9.8	9.8	<0.1	Negligible
H188	518130	229043	10.2	10.2	<0.1	Negligible
H265	518984	228278	9.6	9.6	<0.1	Negligible
Phase 2a (2039)						
H17	518890	228295	9.6	9.6	<0.1	Negligible
H77	518720	228334	9.9	9.9	<0.1	Negligible
H188	518130	229043	10.2	10.1	-0.1	Negligible
H265	518984	228278	9.6	9.6	<0.1	Negligible
Phase 2b (2043)						
H17	518890	228295	9.6	9.6	<0.1	Negligible
H77	518720	228334	9.9	10.0	<0.1	Negligible
H188	518130	229043	10.2	10.2	<0.1	Negligible
H265	518984	228278	9.6	9.6	<0.1	Negligible

5 CONCLUSION

5.1.1 This note has detailed the results of the air quality dispersion modelling at AQMAs in Hitchin. The results show that predicted concentrations of annual mean and short term NO_2 and PM_{10} concentrations are below the relevant air quality standards and impacts are predicted to be negligible for all assessment Phases (1, 2a and 2b).

5.1.2 The results show that predicted concentrations of annual mean $PM_{2.5}$ concentrations are above the relevant air quality standard in all assessment Phases (1, 2a and 2b) for receptor H188 located in NHDC AQMA Payne's Park. However, impacts are predicted to be negligible.

GLOSSARY AND ABBREVIATIONS

Term	Definition
AQMA	Air Quality Management Area
DM	Do Minimum
DS	Do Something
ES	Environmental Statement
EU	European Union
NO_2	Nitrogen dioxide
NHDC	North Hertfordshire District Council
$PM_{2.5}$	Fine particulate matter
PM_{10}	Particulate matter
SOCG	Statement of Common Ground