APPENDIX 7.5A
AIR QUALITY TECHNICAL NOTE - ASSESSMENT OF IMPACTS WITH NO LINK ROAD

Introduction

This note has been produced by Kairus Ltd to respond to concerns by Uttlesford District Council (UDC) that the link road between Radwinter Road and Thaxted Road, being constructed under planning applications UTT/13/3467/OP and UTT/17/2832/OP, is not completed and the subsequent impact the proposed development would therefore have on air quality within the town as a result of development related vehicle movements.

To address these concerns additional detailed air quality modeling has been carried out to assess the impact of the proposed development assuming no link road in in place. The methodology employed for the modelling remains the same as that undertaken for the air quality assessment (AQA) undertaken to support the planning application. This document should, therefore, be read in conjunction with the previous air quality report completed by Kairus Ltd in support of the application[1].

Revised traffic data for the future 2026 do minimum (DM) and do something (DS) scenarios without the link road in place has been provided by Cotswold Transport Planning (CTP) for use in the revised modelling scenarios. The data is based on data presented in the transport assessment report completed by Peter Brett Associates (PBA) undertaken for application 17/2832/OP for Land to the East of Thaxted Road. The PBA data did not consider as many junctions as the data used for the previous air quality assessment (Based on the Iceni report, therefore impacts have been predicted at a reduced number of receptors and across a smaller road network than presented previously. However, the data has included impacts at the Thaxted Road/Radwinter Road junction, known to be a hotspot location for air quality.

Traffic data used for this revised assessment are provided in Appendix A. The location of the receptors considered within this assessment are provided in Appendix B. To ensure consistency, the receptor numbers and locations have remained the same as those used in the previous AQA.

Assessment of Results

Predicted annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations under the revised DM and DS scenarios are set out in Appendix C.

As detailed above, the revised modelling has not undertaken any revised modelling for the 2019 base scenario, with model verification remaining the same. Data for this year therefore remains unchanged from the previous AQA. Annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations were previously predicted to be below the relevant objective limits at all locations across the town under the 2019 base scenario.

The revised modelling shows a decline in annual mean NO_2 concentrations between the 2019 base and 2026 DM scenarios, due to expected improvements in vehicle emissions. However, concentrations of PM_{10} and $PM_{2.5}$ show little change between the two assessment years. This is

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1 Kairus Ltd, Air Quality Assessment, Land South of Radwinter Road (East of Griffin Place), Saffron Walden, AQ051769 V5 Final

consistent with the results presented in the previous AQA where NO_2 concentrations were predicted to decline in the future 2026 DM scenario compared to the 2019 base scenario.

Traffic generated by the operational development is predicted to increase annual mean NO_2 concentrations at the majority of receptors considered in the revised modelling (Table C1, Appendix C). The highest impact is predicted at receptors R5, R6, R15, R17 and R34, which are located close to the Thaxted Road/Radwinter Road junction. However, the impact equates to 1% of the annual mean objective limit of 40 $\mu g/m^3$ (Air Quality Assessment Level (AQAL)), which is classed as a negligible impact due to concentrations remaining well below (<30 $\mu g/m^3$) the AQAL (based on the significance criteria set out in Table 4.4 of the previous AQA).

At all other receptor locations the predicted impact is predicted to be between 0 and 1% of the AQAL and is therefore also deemed to be negligible.

As annual mean NO_2 concentrations are predicted to be significantly less than 60 $\mu g/m^3$ at all receptor locations, the impact on short-term NO_2 will also be negligible.

In respect of PM_{10} and $PM_{2.5}$ annual mean concentrations are predicted to increase by less than 1% of the relevant AQAL of 40 $\mu g/m^3$ and 25 $\mu g/m^3$, respectively. Impacts on both pollutants would therefore be negligible.

As annual mean PM_{10} concentrations are predicted to remain well below 32 $\mu g/m^3$ at all receptor locations, impacts on short-term PM_{10} would also be negligible.

Overall, the impact of the development, if the new road link is not completed, would be negligible at all locations within Saffron Walden.

Conclusions

Revised air quality modelling has been undertaken to assess the impact of the proposed development of Land to the South of Radwinter Road (East of Griffin Place) on local air quality if the new link road between Radwinter Road and Thaxted Road is not completed.

The modelling was carried out using the same methodology as that employed for AQA undertaken in support of the planning application for the Site.

The results of the revised modelling show that traffic generated by the proposed development would have a negligible impact on NO_2, PM_{10} and $PM_{2.5}$ concentrations across the town of Saffron Walden if the new link road is not completed.

Appendix A– Traffic Data used in Modelling

Table C1: AADT traffic Flows used in ADMS Modelling Assessment					
Link Number	Speed (kph)	2026 Do Minimum		2026 Do Something	
		%HGV	AADT	%HGV	AADT
V	35 (15 at junction)	1.7	4184	1.7	4323
W	48 (15 at junction)	1.8	13075	1.8	13517
X	35 (15 at junction)	2.2	10370	2.1	10731
Y	35 (15 at junction)	2.2	1380	2.2	10741
Z	48 (35 at junction)	1.3	4461	1.2	4712
A1	15 (10 at junction)	3.1	7852	3.0	8020
B1	35 (15 at junction)	3.2	6627	3.1	6989
C1	15 (10 at junction)	3.5	11339	3.5	11582
D1	35 (15 at junction)	3.5	11767	3.4	12010
E1	35 (15 at junction)	3.1	6790	3.0	7035
F1	35 (15 at junction)	3.3	14657	3.2	15087
G1	35 (15 at junction)	4.0	10479	3.9	10909
H1	35 (15 at junction)	0.9	4940	0.9	4940
I1	48	3.1	14633	3.0	15063
L1	35 (15 at junction)	1.0	5121	1.0	5121
M1	35 (15 at junction)	1.4	5547	1.4	5547
N1	35 (15 at junction)	1.1	6813	1.1	6813
O1	35 (15 at junction)	1.2	6909	1.2	9609
P1	48	1.6	9173	1.6	9247
Q1	35	1.9	10932	1.9	11006

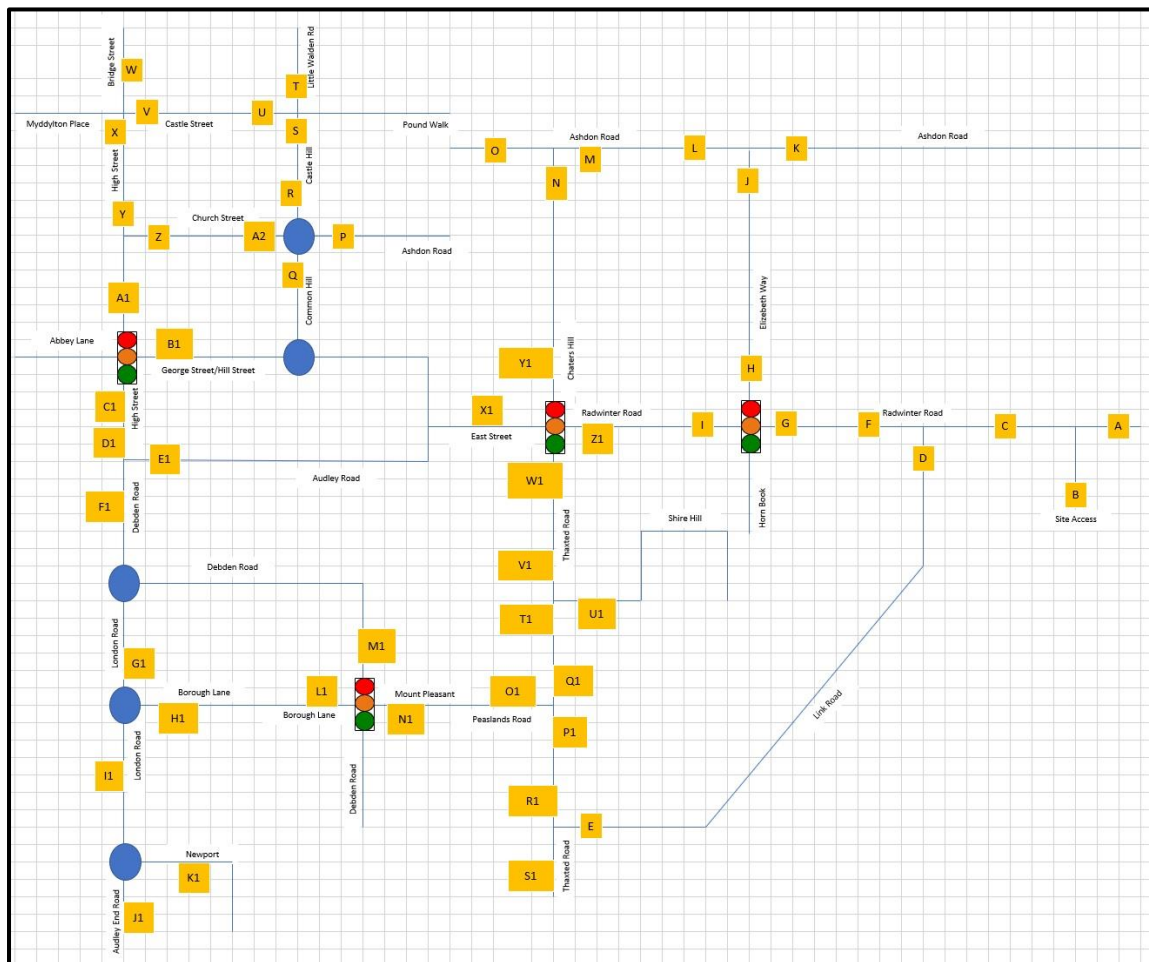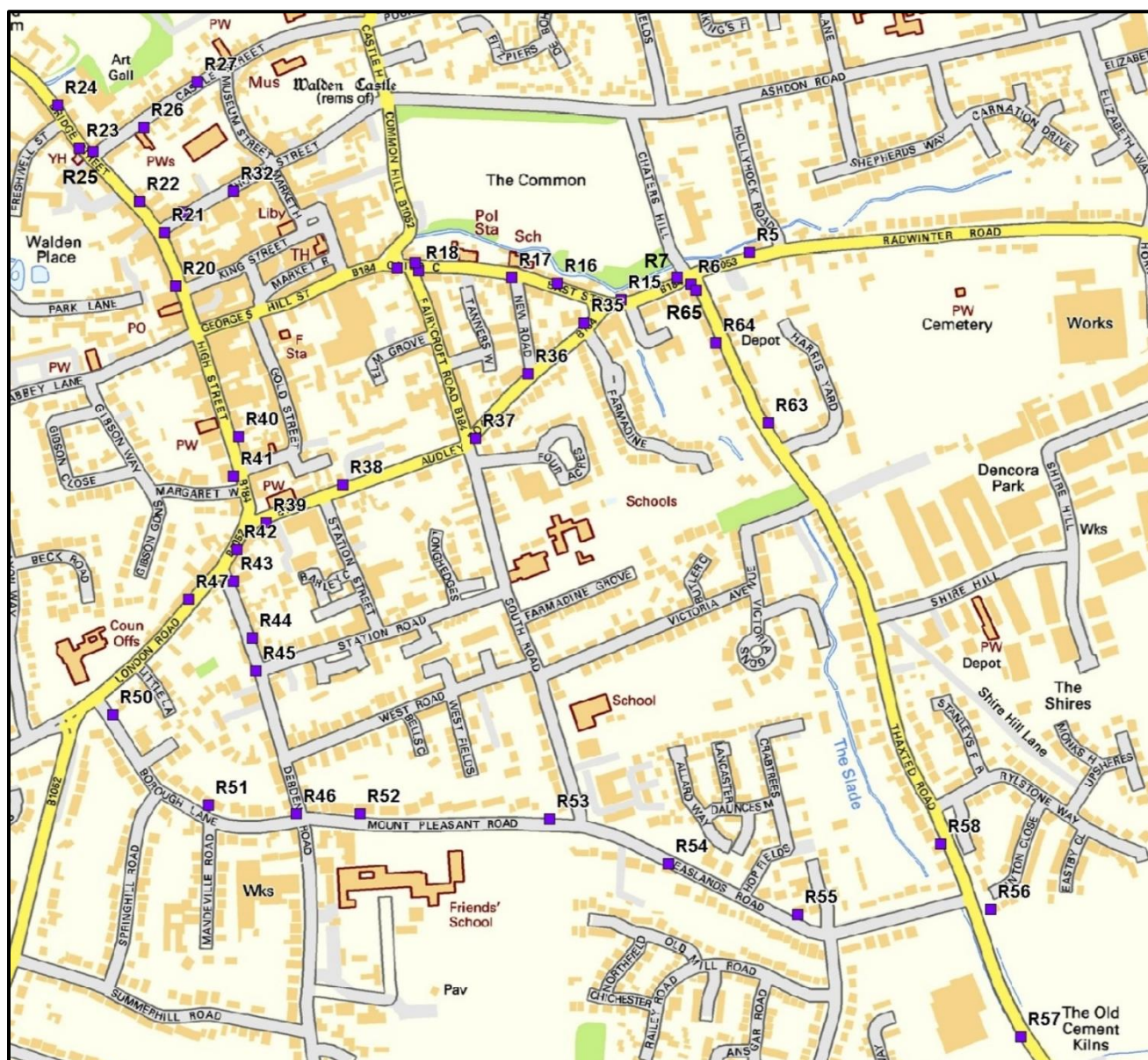| Table C1: AADT traffic Flows used in ADMS Modelling Assessment					
Link Number	Speed (kph)	2026 Do Minimum		2026 Do Something	
		%HGV	AADT	%HGV	AADT
W1	35	2.5	9332	2.4	9493
X1	35 (15 at junctions)	2.6	9964	2.5	10563
Y1	35 (15 at junctions)	2.3	2190	2.3	2190
Z1	15	2.9	11128	2.8	11888

Figure A1: Location of Road Links used in Modelling

Appendix B– Receptors used in Modelling

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Appendix C– Results of Modelling at Existing Receptors Without the Link Road

Table C1: Predicted Annual Mean NO$_2$ Concentrations at Existing Receptors (µg/m^3)					
Receptor	2019 Base[1]	2026 Do Minimum	2026 Do Something	Increase due to Proposed Development	Significance of Impact
R5	28.4	22.2	22.5	1	Negligible
R6	32.6	24.7	25.0	1	Negligible
R7	28.1	22.1	22.5	1	Negligible
R15	29.1	22.8	23.2	1	Negligible
R16	25.0	20.5	20.8	1	Negligible
R17	27.8	22.1	22.5	1	Negligible
R18	28.9	22.1	22.4	1	Negligible
R19	27.5	20.8	21.1	1	Negligible
R20	23.8	19.7	19.7	0	Negligible
R21	29.8	23.2	23.4	1	Negligible
R22	27.8	22.6	22.9	1	Negligible
R23	24.4	20.9	21.1	0	Negligible
R24	26.4	22.2	22.5	1	Negligible
R25	25.9	21.9	22.1	1	Negligible
R26	19.8	18.0	18.1	0	Negligible
R27	19.1	17.5	17.6	0	Negligible
R32	21.6	18.6	18.7	0	Negligible
R33	21.4	18.5	18.7	0	Negligible
R34	32.1	23.7	24.1	1	Negligible
R35	23.6	20.0	20.1	0	Negligible
R36	21.8	19.0	19.1	0	Negligible
R37	25.5	21.3	21.5	0	Negligible
R38	21.9	19.1	19.2	0	Negligible
R39	29.4	23.4	23.6	1	Negligible
R40	28.2	22.3	22.5	0	Negligible
R41	24.5	20.2	20.3	0	Negligible
R42	39.8	29.2	29.5	1	Negligible
R43	29.7	22.7	22.9	0	Negligible

Table C1: Predicted Annual Mean NO_2 Concentrations at Existing Receptors ($\mu g/m^3$)					
Receptor	2019 Base[1]	2026 Do Minimum	2026 Do Something	Increase due to Proposed Development	Significance of Impact
R44	24.7	20.0	20.0	0	Negligible
R45	21.7	18.4	18.4	0	Negligible
R46	25.7	20.7	20.7	0	Negligible
R47	249	20.2	20.4	0	Negligible
R50	26.5	20.7	20.8	0	Negligible
R51	18.7	17.0	17.0	0	Negligible
R52	20.2	17.9	17.9	0	Negligible
R53	20.8	18.4	18.4	0	Negligible
R54	24.8	22.8	22.8	0	Negligible
R55	19.6	18.5	18.5	0	Negligible
R56	19.9	18.0	18.0	0	Negligible
R57	21.7	18.6	18.6	0	Negligible
R58	20.5	18.2	18.2	0	Negligible
R63	26.0	20.9	21.0	0	Negligible
R64	21.6	18.5	18.6	0	Negligible
R65	30.0	23.1	23.3	1	Negligible
[1] unchanged from previous AQA					

Table C2: Predicted Annual Mean PM_{10} Concentrations at Existing Receptors ($\mu g/m^3$)					
Receptor	2019 Base[1]	2026 Do Minimum	2026 Do Something	Increase due to Proposed Development	Significance of Impact
R5	16.4	16.4	16.5	0	Negligible
R6	17.0	17.1	17.2	0	Negligible
R7	16.4	16.4	16.5	0	Negligible
R15	16.5	16.6	16.8	0	Negligible
R16	16.3	16.4	16.5	0	Negligible
R17	16.8	17.0	17.1	0	Negligible
R18	16.5	16.4	16.5	0	Negligible
R19	16.4	16.1	16.2	0	Negligible

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Table C2: Predicted Annual Mean PM$_{10}$ Concentrations at Existing Receptors (μg/m³)					
Receptor	2019 Base[1]	2026 Do Minimum	2026 Do Something	Increase due to Proposed Development	Significance of Impact
R20	15.9	15.8	15.9	0	Negligible
R21	17.0	17.1	17.2	0	Negligible
R22	17.0	17.3	17.3	0	Negligible
R23	16.5	16.8	16.9	0	Negligible
R24	17.0	17.4	17.5	0	Negligible
R25	16.7	17.1	17.2	0	Negligible
R26	15.5	15.6	15.6	0	Negligible
R27	15.4	15.5	15.5	0	Negligible
R32	15.9	15.9	16.0	0	Negligible
R33	157	15.8	15.8	0	Negligible
R34	17.0	16.8	16.9	0	Negligible
R35	15.8	15.9	16.0	0	Negligible
R36	15.7	15.8	15.9	0	Negligible
R37	16.1	16.3	16.3	0	Negligible
R38	15.8	15.9	16.0	0	Negligible
R39	16.7	16.8	16.9	0	Negligible
R40	16.5	16.5	16.5	0	Negligible
R41	16.0	16.0	16.0	0	Negligible
R42	18.3	18.4	18.5	0	Negligible
R43	16.8	16.7	16.8	0	Negligible
R44	16.7	16.6	16.6	0	Negligible
R45	16.1	16.0	16.0	0	Negligible
R46	16.5	16.5	16.5	0	Negligible
R47	16.3	16.3	16.4	0	Negligible
R50	16.7	16.6	16.6	0	Negligible
R51	15.6	15.6	15.6	0	Negligible
R52	15.8	15.8	15.8	0	Negligible
R53	16.1	16.2	16.2	0	Negligible
R54	16.9	17.8	17.8	0	Negligible
R55	15.9	16.3	16.3	0	Negligible

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Table C2: Predicted Annual Mean PM$_{10}$ Concentrations at Existing Receptors (µg/m³)					
Receptor	2019 Base[1]	2026 Do Minimum	2026 Do Something	Increase due to Proposed Development	Significance of Impact
R56	16.0	16.1	16.1	0	Negligible
R57	16.5	16.5	16.5	0	Negligible
R58	16.1	16.2	16.2	0	Negligible
R63	16.5	16.5	16.6	0	Negligible
R64	15.6	15.6	15.6	0	Negligible
R65	16.6	16.7	16.7	0	Negligible

[1] unchanged from previous AQA

Table C3: Predicted Annual Mean PM$_{2.5}$ Concentrations at Existing Receptors (µg/m³)					
Receptor	2019 Base	2026 Do Minimum	2026 Do Something	Increase due to Proposed Development	Significance of Impact
R5	10.6	10.5	10.6	0	Negligible
R6	11.0	10.9	11.0	0	Negligible
R7	10.6	10.5	10.6	0	Negligible
R15	10.7	10.7	10.7	0	Negligible
R16	10.5	10.5	10.6	0	Negligible
R17	10.8	10.8	10.9	0	Negligible
R18	10.6	10.5	10.6	0	Negligible
R19	10.3	10.1	10.2	0	Negligible
R20	10.0	9.9	10.0	0	Negligible
R21	10.7	10.7	10.7	0	Negligible
R22	10.6	10.7	10.8	0	Negligible
R23	10.3	10.5	10.5	0	Negligible
R24	10.6	10.8	10.9	0	Negligible
R25	10.5	10.6	10.7	0	Negligible
R26	9.7	9.8	9.8	0	Negligible
R27	9.7	9.7	9.7	0	Negligible
R32	10.0	10.0	10.0	0	Negligible

Table C3: Predicted Annual Mean PM$_{2.5}$ Concentrations at Existing Receptors (μg/m³)					
Receptor	2019 Base	2026 Do Minimum	2026 Do Something	Increase due to Proposed Development	Significance of Impact
R33	9.9	9.9	9.9	0	Negligible
R34	10.9	10.8	10.8	0	Negligible
R35	10.2	10.3	10.3	0	Negligible
R36	10.2	10.2	10.2	0	Negligible
R37	10.4	10.5	10.5	0	Negligible
R38	10.0	10.0	10.0	0	Negligible
R39	10.5	10.5	10.6	0	Negligible
R40	10.4	10.3	10.4	0	Negligible
R41	10.1	10.0	10.0	0	Negligible
R42	11.5	11.4	11.5	0	Negligible
R43	10.6	10.5	10.5	0	Negligible
R44	10.4	10.3	10.3	0	Negligible
R45	10.1	10.0	10.0	0	Negligible
R46	10.3	10.2	10.2	0	Negligible
R47	10.3	10.2	10.3	0	Negligible
R50	10.4	10.3	10.3	0	Negligible
R51	9.7	9.7	9.7	0	Negligible
R52	9.9	9.9	9.9	0	Negligible
R53	10.2	10.2	10.2	0	Negligible
R54	10.6	11.1	11.1	0	Negligible
R55	10.0	10.2	10.2	0	Negligible
R56	10.1	10.1	10.1	0	Negligible
R57	10.3	10.3	10.3	0	Negligible
R58	10.1	10.2	10.2	0	Negligible
R63	10.6	10.6	10.6	0	Negligible
R64	10.1	10.1	10.1	0	Negligible
R65	10.7	10.7	10.7	0	Negligible
[1] unchanged from previous AQA					

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