

OVG Manchester:

Appendix 6.4 – Construction Traffic Modelling Results

OVG Manchester- EIA Chapter 6 Air Quality

Appendix 6.4 Construction Traffic Modelling Results

0042841

16 January 2020

Revision 00

BRA-BHE-XX-XX-RP-YM-0606

Copyright © 1976 - 2020 BuroHappold Engineering. All Rights Reserved.

Revision	Description	Issued by	Date	Checked
01	Final	CR	15/01/2020	16/01/2020

This report has been prepared for the sole benefit, use and information of OVG Manchester Limited for the purposes set out in the report or instructions commissioning it. The liability of BuroHappold in respect of the information contained in the report will not extend to any third party.

author **Connor Rusby**

date **16/01/2020**

approved **Peter Henshaw**

signature 

date **16/01/2020**

Table 1- Long Term NO₂ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor
Club Shop	1.5	24.3	20.7	20.7	52	0	Negligible
Phillips Park	1.5	30.8	26.5	26.5	66	0	Negligible
Regional Arena	1.5	24.1	20.9	20.9	52	0	Negligible
Tennis Centre	1.5	23.8	20.6	20.6	51	0	Negligible
r1	1.5	29.1	27.2	27.2	68	0	Negligible
r2	1.5	30.6	27.7	27.7	69	0	Negligible
r2a	3	30.2	27.1	27.2	68	0	Negligible
r2b	5	29.4	26.0	26.0	65	0	Negligible
r2c	7	28.5	24.9	24.9	62	0	Negligible
r2d	10	27.2	23.6	23.6	59	0	Negligible
r2e	12	26.5	22.9	22.9	57	0	Negligible
r2f	15	25.6	22.2	22.2	55	0	Negligible

Table 1- Long Term NO₂ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor
r2g	18	25.0	21.6	21.6	54	0	Negligible
r2h	21	24.5	21.2	21.2	53	0	Negligible
r2i	24	24.2	20.9	20.9	52	0	Negligible
r2j	27	23.9	20.7	20.7	52	0	Negligible
r3	1.5	30.3	26.4	26.4	66	0	Negligible
r3a	3	30.0	26.1	26.1	65	0	Negligible
r3b	5	29.3	25.5	25.5	64	0	Negligible
r3c	7	28.5	24.7	24.8	62	0	Negligible
r3d	10	27.3	23.6	23.6	59	0	Negligible
r3e	12	26.6	23.0	23.0	57	0	Negligible
r3f	15	25.7	22.2	22.2	55	0	Negligible
r3g	18	25.0	21.6	21.6	54	0	Negligible
r3h	21	24.5	21.2	21.2	53	0	Negligible
r3i	24	24.2	20.9	20.9	52	0	Negligible

Table 1- Long Term NO₂ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor
r3j	27	23.9	20.7	20.7	52	0	Negligible
r4	1.5	30.8	26.4	26.4	66	0	Negligible
r4a	3	30.5	26.1	26.2	65	0	Negligible
r4b	5	29.8	25.6	25.6	64	0	Negligible
r4c	7	29.0	24.9	25.0	62	0	Negligible
r4d	10	27.7	23.9	23.9	60	0	Negligible
r4e	12	26.9	23.3	23.3	58	0	Negligible
r4f	15	26.0	22.5	22.5	56	0	Negligible
r4g	18	25.2	21.9	21.9	55	0	Negligible
r4h	21	24.7	21.5	21.5	54	0	Negligible
r4i	24	24.4	21.2	21.2	53	0	Negligible
r4j	27	24.1	20.9	20.9	52	0	Negligible
r5	1.5	26.5	21.5	21.5	54	0	Negligible
r6	1.5	26.2	21.4	21.4	54	0	Negligible

Table 1- Long Term NO₂ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor
r7	1.5	25.9	21.3	21.3	53	0	Negligible
r8	1.5	25.9	21.3	21.3	53	0	Negligible
r9	1.5	26.9	21.8	21.8	54	0	Negligible
r10	1.5	26.7	21.7	21.7	54	0	Negligible
r11	1.5	27.6	22.1	22.1	55	0	Negligible
r12	1.5	27.6	22.1	22.1	55	0	Negligible
r13	1.5	29.7	25.1	25.1	63	0	Negligible
r14	1.5	29.3	24.8	24.9	62	0	Negligible
r15	1.5	28.9	24.6	24.6	61	0	Negligible
r16	1.5	28.4	24.2	24.3	61	0	Negligible
r17	1.5	29.5	25.1	25.1	63	0	Negligible
r18	1.5	30.3	25.7	25.7	64	0	Negligible
r19	1.5	31.1	26.3	26.3	66	0	Negligible
r20	1.5	33.4	28.0	28.1	70	0	Negligible

Table 1- Long Term NO₂ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor
r21	1.5	29.1	24.8	24.8	62	0	Negligible
r22	1.5	31.4	26.6	26.6	67	0	Negligible
r23	1.5	31.6	26.8	26.8	67	0	Negligible
r24	1.5	31.6	26.8	26.8	67	0	Negligible
r25	1.5	30.4	25.8	25.9	65	0	Negligible
r26	1.5	34.1	28.8	28.8	72	0	Negligible
r27	1.5	30.3	25.8	25.8	64	0	Negligible
r28	1.5	32.1	27.2	27.2	68	0	Negligible
r29	1.5	27.5	23.5	23.5	59	0	Negligible
r30	1.5	29.8	25.2	25.3	63	0	Negligible
r31	1.5	30.7	26.0	26.0	65	0	Negligible
r32	1.5	26.4	22.6	22.7	57	0	Negligible
r33	1.5	26.2	22.5	22.6	56	0	Negligible
r34	1.5	25.8	22.4	22.4	56	0	Negligible

Table 1- Long Term NO₂ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor
r35	1.5	25.6	22.6	22.6	56	0	Negligible
r36	1.5	32.9	27.7	27.8	69	0	Negligible
r37	1.5	33.5	28.2	28.2	70	0	Negligible
r38	1.5	29.0	24.9	25.0	62	0	Negligible
r39	1.5	32.5	27.4	27.4	68	0	Negligible
r40	1.5	27.7	23.7	23.8	59	0	Negligible
r41	1.5	29.2	24.7	24.7	62	0	Negligible
r42	1.5	27.3	23.2	23.2	58	0	Negligible
r43	1.5	28.7	24.4	24.4	61	0	Negligible
r44	1.5	32.0	27.0	27.1	68	0	Negligible
r45	1.5	25.1	26.8	26.9	67	0	Negligible
r46	1.5	25.0	27.1	27.1	68	0	Negligible
r47	1.5	25.0	26.9	27.0	67	0	Negligible
r48	1.5	25.0	28.5	28.6	71	0	Negligible

Table 1- Long Term NO₂ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor
r49	1.5	24.7	25.0	25.0	63	0	Negligible
r50	1.5	22.3	20.8	20.8	52	0	Negligible
r51	1.5	22.1	20.5	20.5	51	0	Negligible
r52	1.5	22.1	23.0	23.0	58	0	Negligible
r53	1.5	22.1	32.4	32.5	81	0	Negligible
r54	1.5	22.0	23.0	23.0	58	0	Negligible
r55	1.5	22.0	23.3	23.3	58	0	Negligible
r56	1.5	22.0	26.2	26.3	66	0	Negligible
r57	1.5	22.0	28.4	28.4	71	0	Negligible
r58	1.5	24.4	24.4	24.4	61	0	Negligible
r59	1.5	24.4	23.8	23.8	59	0	Negligible
r60	1.5	24.4	25.1	25.1	63	0	Negligible
r61	1.5	24.4	24.2	24.2	61	0	Negligible
r62	1.5	24.4	24.2	24.2	61	0	Negligible

Table 1- Long Term NO₂ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline ($\mu\text{g}/\text{m}^3$)	Do Nothing ($\mu\text{g}/\text{m}^3$)	Do Something ($\mu\text{g}/\text{m}^3$)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor
r63	1.5	24.4	25.6	25.6	64	0	Negligible
r64	1.5	24.4	25.0	25.0	63	0	Negligible
r65	1.5	24.4	23.0	23.0	58	0	Negligible
r66	1.5	24.4	23.4	23.4	58	0	Negligible
r67	1.5	21.6	24.0	24.0	60	0	Negligible
r68	1.5	20.9	20.4	20.4	51	0	Negligible
r69	1.5	21.6	22.6	22.6	57	0	Negligible
r70	1.5	21.6	21.9	22.0	55	0	Negligible
r71	1.5	21.6	23.6	23.7	59	0	Negligible
r72	1.5	21.6	23.7	23.8	59	0	Negligible
r73	1.5	30.3	25.7	25.7	64	0	Negligible
r74	1.5	30.2	25.6	25.6	64	0	Negligible
r75	1.5	30.3	25.7	25.7	64	0	Negligible
r76	1.5	30.3	25.7	25.7	64	0	Negligible

Table 1- Long Term NO₂ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor
r77	1.5	30.8	26.0	26.0	65	0	Negligible
r78	1.5	28.5	24.3	24.3	61	0	Negligible
r79	1.5	27.7	23.7	23.7	59	0	Negligible

Table 2 - PM₁₀ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor	Estimated Short Term Exceedances Per Year (35 allowable)*
Club Shop	1.5	12.25	11.8	11.9	52	0	Negligible	1
Phillips Park	1.5	13.49	13.2	13.2	66	0	Negligible	1
Regional Arena	1.5	12.27	11.9	11.9	52	0	Negligible	1
Tennis Centre	1.5	12.19	11.8	11.8	51	0	Negligible	1
r1	1.5	29.1	27.2	27.2	68	0	Negligible	1
r2	1.5	30.6	27.7	27.7	69	0	Negligible	0
r2a	3	30.2	27.1	27.2	68	0	Negligible	0
r2b	5	29.4	26.0	26.0	65	0	Negligible	1
r2c	7	28.5	24.9	24.9	62	0	Negligible	1
r2d	10	27.2	23.6	23.6	59	0	Negligible	1

Table 2 - PM₁₀ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor	Estimated Short Term Exceedances Per Year (35 allowable)*
r2e	12	26.5	22.9	22.9	57	0	Negligible	1
r2f	15	25.6	22.2	22.2	55	0	Negligible	1
r2g	18	25.0	21.6	21.6	54	0	Negligible	1
r2h	21	24.5	21.2	21.2	53	0	Negligible	1
r2i	24	24.2	20.9	20.9	52	0	Negligible	1
r2j	27	23.9	20.7	20.7	52	0	Negligible	1
r3	1.5	30.3	26.4	26.4	66	0	Negligible	1
r3a	3	30.0	26.1	26.1	65	0	Negligible	1
r3b	5	29.3	25.5	25.5	64	0	Negligible	1
r3c	7	28.5	24.7	24.8	62	0	Negligible	1
r3d	10	27.3	23.6	23.6	59	0	Negligible	1
r3e	12	26.6	23.0	23.0	57	0	Negligible	1
r3f	15	25.7	22.2	22.2	55	0	Negligible	1

Table 2 - PM₁₀ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor	Estimated Short Term Exceedances Per Year (35 allowable)*
r3g	18	25.0	21.6	21.6	54	0	Negligible	1
r3h	21	24.5	21.2	21.2	53	0	Negligible	1
r3i	24	24.2	20.9	20.9	52	0	Negligible	1
r3j	27	23.9	20.7	20.7	52	0	Negligible	1
r4	1.5	30.8	26.4	26.4	66	0	Negligible	1
r4a	3	30.5	26.1	26.2	65	0	Negligible	1
r4b	5	29.8	25.6	25.6	64	0	Negligible	1
r4c	7	29.0	24.9	25.0	62	0	Negligible	1
r4d	10	27.7	23.9	23.9	60	0	Negligible	1
r4e	12	26.9	23.3	23.3	58	0	Negligible	1
r4f	15	26.0	22.5	22.5	56	0	Negligible	1
r4g	18	25.2	21.9	21.9	55	0	Negligible	1
r4h	21	24.7	21.5	21.5	54	0	Negligible	1

Table 2 - PM₁₀ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor	Estimated Short Term Exceedances Per Year (35 allowable)*
r4i	24	24.4	21.2	21.2	53	0	Negligible	1
r4j	27	24.1	20.9	20.9	52	0	Negligible	2
r5	1.5	26.5	21.5	21.5	54	0	Negligible	1
r6	1.5	26.2	21.4	21.4	54	0	Negligible	1
r7	1.5	25.9	21.3	21.3	53	0	Negligible	1
r8	1.5	25.9	21.3	21.3	53	0	Negligible	1
r9	1.5	26.9	21.8	21.8	54	0	Negligible	1
r10	1.5	26.7	21.7	21.7	54	0	Negligible	1
r11	1.5	27.6	22.1	22.1	55	0	Negligible	1
r12	1.5	27.6	22.1	22.1	55	0	Negligible	1
r13	1.5	29.7	25.1	25.1	63	0	Negligible	1
r14	1.5	29.3	24.8	24.9	62	0	Negligible	1
r15	1.5	28.9	24.6	24.6	61	0	Negligible	1

Table 2 - PM₁₀ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor	Estimated Short Term Exceedances Per Year (35 allowable)*
r16	1.5	28.4	24.2	24.3	61	0	Negligible	1
r17	1.5	29.5	25.1	25.1	63	0	Negligible	1
r18	1.5	30.3	25.7	25.7	64	0	Negligible	1
r19	1.5	31.1	26.3	26.3	66	0	Negligible	1
r20	1.5	33.4	28.0	28.1	70	0	Negligible	1
r21	1.5	29.1	24.8	24.8	62	0	Negligible	1
r22	1.5	31.4	26.6	26.6	67	0	Negligible	1
r23	1.5	31.6	26.8	26.8	67	0	Negligible	1
r24	1.5	31.6	26.8	26.8	67	0	Negligible	1
r25	1.5	30.4	25.8	25.9	65	0	Negligible	1
r26	1.5	34.1	28.8	28.8	72	0	Negligible	1
r27	1.5	30.3	25.8	25.8	64	0	Negligible	1
r28	1.5	32.1	27.2	27.2	68	0	Negligible	0

Table 2 - PM₁₀ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor	Estimated Short Term Exceedances Per Year (35 allowable)*
r29	1.5	27.5	23.5	23.5	59	0	Negligible	1
r30	1.5	29.8	25.2	25.3	63	0	Negligible	0
r31	1.5	30.7	26.0	26.0	65	0	Negligible	0
r32	1.5	26.4	22.6	22.7	57	0	Negligible	1
r33	1.5	26.2	22.5	22.6	56	0	Negligible	1
r34	1.5	25.8	22.4	22.4	56	0	Negligible	1
r35	1.5	25.6	22.6	22.6	56	0	Negligible	1
r36	1.5	32.9	27.7	27.8	69	0	Negligible	1
r37	1.5	33.5	28.2	28.2	70	0	Negligible	1
r38	1.5	29.0	24.9	25.0	62	0	Negligible	1
r39	1.5	32.5	27.4	27.4	68	0	Negligible	1
r40	1.5	27.7	23.7	23.8	59	0	Negligible	1
r41	1.5	29.2	24.7	24.7	62	0	Negligible	1

Table 2 - PM₁₀ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor	Estimated Short Term Exceedances Per Year (35 allowable)*
r42	1.5	27.3	23.2	23.2	58	0	Negligible	1
r43	1.5	28.7	24.4	24.4	61	0	Negligible	1
r44	1.5	32.0	27.0	27.1	68	0	Negligible	1
r45	1.5	25.1	26.8	26.9	67	0	Negligible	0
r46	1.5	25.0	27.1	27.1	68	0	Negligible	0
r47	1.5	25.0	26.9	27.0	67	0	Negligible	0
r48	1.5	25.0	28.5	28.6	71	0	Negligible	0
r49	1.5	24.7	25.0	25.0	63	0	Negligible	0
r50	1.5	22.3	20.8	20.8	52	0	Negligible	1
r51	1.5	22.1	20.5	20.5	51	0	Negligible	1
r52	1.5	22.1	23.0	23.0	58	0	Negligible	1
r53	1.5	22.1	32.4	32.5	81	0	Negligible	0
r54	1.5	22.0	23.0	23.0	58	0	Negligible	1

Table 2 - PM₁₀ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor	Estimated Short Term Exceedances Per Year (35 allowable)*
r55	1.5	22.0	23.3	23.3	58	0	Negligible	1
r56	1.5	22.0	26.2	26.3	66	0	Negligible	0
r57	1.5	22.0	28.4	28.4	71	0	Negligible	0
r58	1.5	24.4	24.4	24.4	61	0	Negligible	1
r59	1.5	24.4	23.8	23.8	59	0	Negligible	1
r60	1.5	24.4	25.1	25.1	63	0	Negligible	1
r61	1.5	24.4	24.2	24.2	61	0	Negligible	1
r62	1.5	24.4	24.2	24.2	61	0	Negligible	1
r63	1.5	24.4	25.6	25.6	64	0	Negligible	1
r64	1.5	24.4	25.0	25.0	63	0	Negligible	1
r65	1.5	24.4	23.0	23.0	58	0	Negligible	1
r66	1.5	24.4	23.4	23.4	58	0	Negligible	1
r67	1.5	21.6	24.0	24.0	60	0	Negligible	1

Table 2 - PM₁₀ Construction Traffic Modelling Results

Receptor	Height (m)	Baseline (µg/m ³)	Do Nothing (µg/m ³)	Do Something (µg/m ³)	% AQAL in Do Something	% change relative to AQAL	Impact Descriptor	Estimated Short Term Exceedances Per Year (35 allowable)*
r68	1.5	20.9	20.4	20.4	51	0	Negligible	1
r69	1.5	21.6	22.6	22.6	57	0	Negligible	1
r70	1.5	21.6	21.9	22.0	55	0	Negligible	1
r71	1.5	21.6	23.6	23.7	59	0	Negligible	1
r72	1.5	21.6	23.7	23.8	59	0	Negligible	1
r73	1.5	30.3	25.7	25.7	64	0	Negligible	1
r74	1.5	30.2	25.6	25.6	64	0	Negligible	1
r75	1.5	30.3	25.7	25.7	64	0	Negligible	1
r76	1.5	30.3	25.7	25.7	64	0	Negligible	1
r77	1.5	30.8	26.0	26.0	65	0	Negligible	1
r78	1.5	28.5	24.3	24.3	61	0	Negligible	1
r79	1.5	27.7	23.7	23.7	59	0	Negligible	1