

Appendix 8.11

Derivation of Background Sound Levels for SRFI Operational Sound Assessment

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Background Sound Levels

Table 1 Background sound levels – Daytime (07:00 – 23:00)

Monitoring Location	Background Sound Level (L _{A90,15min} dB) - Day							
	Broadly South-Westerly Winds				Broadly North-Easterly Winds			
	Modal Value	Lower Quartile	Difference	Sens Test Required?	Modal Value	Lower Quartile	Difference	Sens Test Required?
L1	47	44	-3	YES	60	48	-12	YES
L2	67	66	-1	NO	67	66	-1	NO
L4	40	39	-1	NO	55	46	-9	YES
L5	36	36	0	NO	50	42	-8	YES
L6	41	38	-3	YES	41	40	-1	NO
L7	46	42	-4	YES	58	45	-13	YES
L8	61	57	-4	YES	57	55	-2	NO
L9	56	57	1	NO	55	55	0	NO
L10	52	48	-4	YES	50	49	-1	NO

Table 2 Background sound levels – Night-time (23:00 – 07:00)

Monitoring Location	Background Sound Level (L _{A90,15min} dB) - Night							
	Broadly South-Westerly Winds				Broadly North-Easterly Winds			
	Modal Value	Lower Quartile	Difference	Sens Test Required?	Modal Value	Lower Quartile	Difference	Sens Test Required?
L1	43	42	-1	NO	52	48	-4	YES
L2	60	60	0	NO	60	57	-3	YES
L4	36	35	-1	NO	51	47	-4	YES
L5	35	34	-1	NO	50	43	-7	YES
L6	42	36	-6	YES	44	42	-2	NO
L7	43	40	-3	YES	52	45	-7	YES
L8	56	53	-3	YES	52	52	0	NO
L9	54	52	-2	NO	51	51	0	NO
L10	40	39	-1	NO	49	44	-5	YES

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Receptor Positions and Representative Monitoring Locations

It is not feasible to carry out monitoring at every sensitive receptor location that may be affected by operational sound from the development. Therefore, some monitoring positions have been used as proxy locations for some receptor locations.

Table 3 below indicates the receptor locations that are used for the assessment of operational sound and the representative monitoring position used for that location. Where corrections are required to account for the difference between the receptor location and the corresponding monitoring position, such as an increased distance from a major source of sound, these have been identified.

Table 3 Representative monitoring positions for receptors locations

Receptor Location	Representative Monitoring Position	Correction Required?	Notes
R2 Northampton South SUE W	L2	No	-
R3 Northampton South SUE S	L2	No	Similar distance back from M1.
R4 Collingtree Ct	L2	No	Similar distance back from M1.
R5 Collingtree Ct	L2	No	Receptor closer to M1 than monitoring position.
R6 Watering Ln	L8	Yes: -2 dB(A)	Levels corrected for difference in distance to M1 between monitoring location (45m) and receptor location (265m) in accordance with base model.
R8 Hilton West	L8	No	Receptor position similar to monitoring location.
R11 Holiday Inn West	L9	No	Levels likely to be higher at receptor location as closer to M1 than receptor position.
R12 Maple Farm East	L2	Yes: -6 dB(A)	Levels corrected for difference in distance to M1 between monitoring location (425m) and receptor location (74m) in accordance with the results of IMMI model.
R13 Maple Farm South	L2	Yes: -10 dB(A)	Levels corrected for difference in distance to M1 between monitoring location (425m) and receptor location (94m) in accordance with results of IMMI model.
R14 Collingtree Rd	L1	No	-
R15 Collingtree Rd North	L7	No	-
R16 Collingtree Rd South	L7	No	-
R17 Collingtree Rd West	L7	No	-
R19 Collingtree Rd South	L7	No	-
R21 Barn Lane	L4	No	-
R23 Barn Ln	L6	No	No difference in LA90 measured at L6 and S4 (short term position close to this receptor).
R24 Lodge Farm	L6	No	-
R25 Barn Ln	L6	No	-
R28 Courteenhall Rd	L5	No	-
R29 West Lodge Cottages West	L10	No	-