

PACIFIC HIGHWAY UPGRADE
OXLEY HIGHWAY TO KEMPSEY
NOISE & VIBRATION WORKING PAPER

REPORT NO. 04254
VERSION D

SEPTEMBER 2010

PREPARED FOR

GHD PTY LTD
PO BOX 5403
HUNTER REGIONAL MAIL CENTRE NSW 2310

Wilkinson Murray Pty Limited

ABN 41 192 548 112 • Level 2, 123 Willoughby Road, Crows Nest NSW 2065, Australia • **Asian Office: Hong Kong**
† +61 2 9437 4611 • f +61 2 9437 4393 • e acoustics@wilkinsonmurray.com.au • w www.wilkinsonmurray.com.au

APPENDIX C

CALCULATED NOISE LEVELS AT RESIDENCES

The following tables show the calculated daytime and night time noise levels at each residence considered in this assessment. In the case where residences have more than one floor, only the floor with the highest noise level is presented. NCAs and residence numbers refer to figures in Appendices D and E.

Levels are calculated first for 2016 on the existing alignment. The base criteria are set or an allowance given where the base criteria are already exceeded. Noise levels are then calculated for the proposed highway in 2026 to compare to the criterion.

Criteria at each receiver for both daytime and night time are based on a classification as either a "New" or "Redeveloped" which depends on the proposed changes in road geometry in the vicinity of the receiver as well as existing traffic noise levels according to Practice Note i of RTA's *Environmental Noise Management Manual*. For this reason it is possible a receiver can be classified in one category at daytime and the other category at night time i.e. "New" for daytime and "Redeveloped" at night time.

For the purpose of this assessment and to avoid confusion, the more stringent "New" base criterion is applied to both time periods. This applies to Receivers 107, 493, and 500.

Table C - 1 Calculated Daytime Noise Levels

NCA	Receiver No	Future Existing Level 2016 L _{eq, 15hr} (dB(A))	Design Noise 2026 L _{eq, 15hr} (dB(A))	Day Base Criteria (dB(A))	Day Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (>=65 dB(A))?
22	28	52.5	54.0	60	54.5		
22	29	50.5	52.0	60	52.5		
22	30	56.5	58.5	60	58.5		
22	31	58.5	60.0	60	60.5		
22	32	53.0	54.5	60	55.0		
22	34	50.5	52.0	60	52.5		
22	36	48.5	50.0	60	50.5		
22	516	53.0	54.5	60	55.0		
22	867	59.5	61.0	60	61.5		
21	6	48.5	50.0	60	50.5		
21	9	51.5	53.0	60	53.5		
21	12	60.0	61.5	60	62.0		
21	20	58.0	59.5	60	60.0		
21	21	53.5	55.0	60	55.5		
21	23	52.5	53.5	60	54.5		
21	24	51.0	52.5	60	53.0		
21	25	51.0	52.5	60	53.0		
21	38	49.5	51.0	60	51.5		
21	39	52.0	53.5	60	54.0		
21	40	50.0	51.5	60	52.0		
21	41	51.5	53.0	60	53.5		
21	42	51.5	53.0	60	53.5		
21	43	52.5	54.5	60	54.5		
21	59	51.5	53.0	60	53.5		
21	60	49.5	50.5	60	51.5		
21	61	50.5	52.0	60	52.5		
21	63	53.5	55.5	60	55.5		
21	64	49.0	51.5	60	51.0		
21	68	50.5	52.5	60	52.5		
21	508	47.5	49.0	60	49.5		
21	510	45.0	46.0	60	47.0		
21	511	44.5	46.0	60	46.5		
21	529	58.0	59.5	60	60.0		

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 15hr}$ (dB(A))	Design Noise 2026 $L_{eq, 15hr}$ (dB(A))	Day Base Criteria (dB(A))	Day Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 65 dB(A))?
21	530	52.0	53.5	60	54.0		
21	532	49.5	51.0	60	51.5		
21	534	51.0	52.5	60	53.0		
21	546	48.0	49.5	60	50.0		
21	548	47.5	49.0	60	49.5		
20	82	51.0	65.0	55	53.0	Y	Y
20	83	51.5	64.0	55	53.5	Y	
20	84	52.5	63.0	55	54.5	Y	
20	85	53.5	62.5	55	55.5	Y	
20	88	56.5	55.0	55	58.5		
20	91	58.0	55.5	55	60.0		
20	93	59.5	56.5	55	61.5		
20	96	51.5	64.0	55	53.5	Y	
20	98	55.0	54.0	55	57.0		
20	99	52.0	51.5	55	54.0		
20	100	52.5	52.0	55	54.5		
20	103	58.0	57.0	55	60.0		
20	105	55.0	55.0	55	57.0		
20	106	54.0	63.0	55	56.0	Y	
20	107	53.5	55.0	55	55.5		
20	567	55.5	54.0	55	57.5		
20	853	53.5	54.0	55	55.5		
20	860	56.0	59.0	60	58.0		
19	71	51.0	53.5	60	53.0		
19	74	50.5	56.5	55	52.5	Y	
19	75	51.5	58.5	55	53.5	Y	
19	76	55.5	63.5	55	57.5	Y	
19	77	51.5	58.5	55	53.5	Y	
19	80	52.0	60.0	55	54.0	Y	
19	855	50.5	54.5	55	52.5		
18	850	46.0	53.0	55	48.0		
17	109	54.0	54.5	55	56.0		
17	111	55.0	54.5	55	57.0		
17	113	61.5	51.0	55	63.5		
17	116	49.0	53.5	55	51.0		
17	117	52.0	53.0	55	54.0		

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 15hr}$ (dB(A))	Design Noise 2026 $L_{eq, 15hr}$ (dB(A))	Day Base Criteria (dB(A))	Day Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 65 dB(A))?
17	119	46.0	53.5	55	48.0		
17	123	43.5	54.5	55	45.5		
17	125	43.0	55.5	55	45.0	Y	
17	126	42.5	57.5	55	44.5	Y	
17	128	41.5	58.5	55	43.5	Y	
17	129	42.0	56.5	55	44.0	Y	
17	130	43.0	55.5	55	45.0	Y	
17	131	43.5	55.0	55	45.5		
17	133	41.0	56.5	55	43.0	Y	
17	135	44.5	54.5	55	46.5		
17	138	51.0	52.0	55	53.0		
17	139	66.0	54.0	55	68.0		
17	142	67.5	55.5	55	69.5		
17	145	54.0	45.0	55	56.0		
17	146	47.5	34.5	55	49.5		
17	147	60.0	49.5	55	62.0		
17	148	67.0	55.0	55	69.0		
17	149	67.0	55.0	55	69.0		
17	150	66.0	54.0	55	68.0		
17	151	59.5	49.0	55	61.5		
17	152	60.0	49.0	55	62.0		
17	153	60.5	49.5	55	62.5		
17	154	61.0	50.0	55	63.0		
17	155	61.0	50.5	55	63.0		
17	156	61.5	51.0	55	63.5		
17	157	68.0	55.5	55	70.0		
17	158	67.0	54.5	55	69.0		
17	159	67.0	55.0	55	69.0		
17	160	66.5	54.0	55	68.5		
17	161	61.5	51.0	55	63.5		
17	162	61.5	50.5	55	63.5		
17	163	67.0	54.5	55	69.0		
17	164	67.0	54.5	55	69.0		
17	165	53.5	53.0	55	55.5		
17	580	50.0	52.0	55	52.0		
17	583	43.5	54.5	55	45.5		

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 15hr}$ (dB(A))	Design Noise 2026 $L_{eq, 15hr}$ (dB(A))	Day Base Criteria (dB(A))	Day Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 65 dB(A))?
17	846	43.5	56.0	55	45.5	Y	
16	169	53.5	40.0	55	55.5		
16	170	56.0	47.0	55	58.0		
16	171	59.0	49.5	55	61.0		
16	172	65.0	53.0	55	67.0		
16	173	66.0	54.0	55	68.0		
16	174	65.5	53.5	55	67.5		
16	175	67.0	55.0	55	69.0		
16	176	66.0	54.0	55	68.0		
16	178	54.0	53.0	55	56.0		
16	179	50.5	37.0	55	52.5		
16	180	62.0	51.0	55	64.0		
16	181	61.5	50.5	55	63.5		
16	187	61.0	50.0	55	63.0		
16	188	61.0	50.0	55	63.0		
16	190	60.0	49.5	55	62.0		
16	191	60.0	49.5	55	62.0		
16	193	60.0	49.5	55	62.0		
16	210	49.0	36.0	55	51.0		
16	212	52.0	38.5	55	54.0		
16	213	54.0	41.0	55	56.0		
16	214	55.0	41.5	55	57.0		
16	215	54.0	41.0	55	56.0		
16	216	50.5	37.0	55	52.5		
16	219	59.0	46.0	55	61.0		
16	220	58.5	45.0	55	60.5		
16	221	59.5	46.5	55	61.5		
16	222	61.0	47.5	55	63.0		
16	223	61.5	48.0	55	63.5		
16	224	63.5	50.5	55	65.5		
16	225	63.0	49.5	55	65.0		
16	226	65.0	51.5	55	67.0		
16	227	66.0	53.5	55	68.0		
16	228	67.5	55.0	55	69.5		
16	229	70.0	56.5	55	72.0		
16	230	72.5	59.5	55	74.5	Y	

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 15hr}$ (dB(A))	Design Noise 2026 $L_{eq, 15hr}$ (dB(A))	Day Base Criteria (dB(A))	Day Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 65 dB(A))?
16	231	62.5	59.5	55	64.5	Y	
16	232	59.5	57.0	55	61.5		
16	233	58.5	56.0	55	60.5		
16	234	60.0	57.0	55	62.0		
16	235	59.0	56.5	55	61.0		
16	236	56.5	54.5	55	58.5		
16	237	56.5	54.5	55	58.5		
16	238	56.0	54.0	55	58.0		
16	240	51.5	52.0	55	53.5		
16	242	53.0	53.0	55	55.0		
16	243	52.5	53.0	55	54.5		
16	244	55.5	53.5	55	57.5		
16	245	51.0	52.5	55	53.0		
16	246	51.0	52.5	55	53.0		
16	247	52.5	53.0	55	54.5		
16	248	47.5	52.0	55	49.5		
16	249	47.5	52.0	55	49.5		
16	250	47.0	52.0	55	49.0		
16	251	47.0	52.0	55	49.0		
16	252	48.0	52.0	55	50.0		
16	253	47.5	52.0	55	49.5		
16	256	46.5	53.0	55	48.5		
16	272	50.5	52.5	55	52.5		
16	273	52.5	52.5	55	54.5		
16	274	52.0	52.5	55	54.0		
16	277	55.0	53.5	55	57.0		
16	278	52.5	52.5	55	54.5		
16	279	55.5	53.5	55	57.5		
16	280	54.5	53.0	55	56.5		
16	281	57.0	54.0	55	59.0		
16	283	52.5	52.5	55	54.5		
16	284	53.0	52.5	55	55.0		
16	286	61.0	52.5	55	63.0		
16	288	60.0	52.0	55	62.0		
16	290	62.0	52.5	55	64.0		
16	291	64.5	53.0	55	66.5		

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 15hr}$ (dB(A))	Design Noise 2026 $L_{eq, 15hr}$ (dB(A))	Day Base Criteria (dB(A))	Day Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 65 dB(A))?
16	292	64.5	53.0	55	66.5		
16	293	64.5	53.0	55	66.5		
16	294	65.0	53.0	55	67.0		
16	295	65.0	53.5	55	67.0		
16	296	64.5	53.0	55	66.5		
16	297	63.5	52.0	55	65.5		
16	298	63.0	51.5	55	65.0		
16	299	62.0	51.0	55	64.0		
16	300	67.5	52.5	55	69.5		
16	301	68.0	52.5	55	70.0		
16	302	61.0	48.5	55	63.0		
16	303	50.0	36.5	55	52.0		
16	304	60.0	52.5	55	62.0		
16	305	62.5	53.0	55	64.5		
16	306	62.5	53.0	55	64.5		
16	307	67.5	54.5	55	69.5		
16	310	67.5	54.0	55	69.5		
16	602	59.5	49.0	55	61.5		
16	603	60.0	49.5	55	62.0		
16	605	61.0	50.0	55	63.0		
16	610	47.0	53.5	55	49.0		
16	615	56.5	43.0	55	58.5		
16	617	50.5	37.5	55	52.5		
16	619	51.0	37.5	55	53.0		
16	620	37.0	23.5	55	39.0		
16	624	33.0	20.0	55	35.0		
15	204	41.0	61.0	55	43.0	Y	
15	205	43.0	55.5	55	45.0	Y	
15	209	44.0	53.5	55	46.0		
15	266	45.0	61.5	55	47.0	Y	
15	270	47.5	55.0	55	49.5		
15	271	50.5	54.5	55	52.5		
15	308	65.0	53.5	55	67.0		
15	311	49.0	61.5	55	51.0	Y	
15	632	43.0	64.0	55	45.0	Y	
14	259	45.0	64.0	55	47.0	Y	

NCA	Receiver No	Future Existing Level 2016 L _{eq, 15hr} (dB(A))	Design Noise 2026 L _{eq, 15hr} (dB(A))	Day Base Criteria (dB(A))	Day Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (>=65 dB(A))?
14	341	52.0	56.0	55	54.0	Y	
14	342	48.5	52.5	60	50.5		
14	647	52.0	56.5	55	54.0	Y	
14	790	43.5	51.0	55	45.5		
14	794	47.0	52.0	55	49.0		
14	796	41.0	45.5	55	43.0		
13	315	51.5	64.5	55	53.5	Y	
13	322	58.0	55.5	55	60.0		
13	323	59.5	56.0	55	61.5		
13	324	53.5	52.5	55	55.5		
13	326	56.5	53.5	55	58.5		
13	330	51.5	51.0	55	53.5		
13	332	49.5	49.5	55	51.5		
13	334	43.0	44.0	55	45.0		
13	336	43.5	45.0	55	45.5		
13	337	44.0	45.0	55	46.0		
13	338	41.5	44.0	55	43.5		
13	339	47.5	48.0	55	49.5		
13	340	51.0	51.5	55	53.0		
13	345	51.0	50.5	55	53.0		
13	347	48.5	48.5	55	50.5		
13	348	46.0	47.5	60	48.0		
13	350	46.5	48.5	60	48.5		
13	352	47.0	49.5	60	49.0		
13	839	56.5	55.0	55	58.5		
13	840	61.5	56.5	55	63.5		
12	363	61.5	65.0	60	63.5	Y	Y
12	364	60.0	63.5	60	62.0	Y	
12	365	58.0	61.5	60	60.0	Y	
12	367	54.0	58.0	60	56.0		
12	374	65.0	67.0	60	67.0	Y	Y
12	375	65.5	67.0	60	67.5	Y	Y
12	378	58.5	60.0	60	60.5		
12	380	55.5	57.0	60	57.5		
11	355	46.5	48.5	60	48.5		
11	358	47.0	49.5	60	49.0		

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 15hr}$ (dB(A))	Design Noise 2026 $L_{eq, 15hr}$ (dB(A))	Day Base Criteria (dB(A))	Day Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 65 dB(A))?
11	359	49.5	51.5	60	51.5		
11	360	51.5	54.0	60	53.5		
11	361	59.0	63.5	60	61.0	Y	
11	370	54.0	56.5	60	56.0		
11	373	61.5	64.0	60	63.5	Y	
11	377	57.5	60.5	60	59.5	Y	
11	655	46.0	48.0	60	48.0		
10	381	43.5	48.0	60	45.5		
10	382	47.0	51.5	60	49.0		
10	383	50.5	55.5	60	52.5		
10	386	48.5	53.5	60	50.5		
10	688	55.0	60.0	60	57.0		
9	392	50.5	55.0	60	52.5		
9	393	49.0	54.0	60	51.0		
9	394	49.5	54.0	60	51.5		
9	405	55.0	60.0	60	57.0		
9	406	47.5	52.0	60	49.5		
9	689	49.0	54.0	60	51.0		
8	388	51.0	55.5	60	53.0		
8	390	51.5	56.0	60	53.5		
8	399	58.0	62.0	60	60.0	Y	
8	400	47.0	51.5	60	49.0		
8	402	50.0	54.0	60	52.0		
8	404	50.5	54.5	60	52.5		
8	683	55.0	60.0	60	57.0		
8	695	56.5	61.0	60	58.5	Y	
7	410	49.0	53.5	60	51.0		
7	411	47.0	51.5	60	49.0		
7	412	49.5	54.0	60	51.5		
7	418	47.0	51.5	60	49.0		
7	419	47.0	51.5	60	49.0		
7	420	47.5	52.0	60	49.5		
7	421	47.5	52.0	60	49.5		
7	422	48.0	52.5	60	50.0		
7	423	48.0	52.5	60	50.0		
7	427	46.5	51.0	60	48.5		

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 15hr}$ (dB(A))	Design Noise 2026 $L_{eq, 15hr}$ (dB(A))	Day Base Criteria (dB(A))	Day Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 65 dB(A))?
7	428	46.5	51.0	60	48.5		
7	429	47.0	51.5	60	49.0		
7	430	47.0	51.5	60	49.0		
7	431	47.5	52.0	60	49.5		
7	432	47.0	51.5	60	49.0		
7	433	47.0	51.5	60	49.0		
7	434	50.0	54.5	60	52.0		
7	438	56.0	60.5	60	58.0	Y	
7	439	54.0	58.0	60	56.0		
7	441	46.5	51.0	60	48.5		
7	826	49.0	53.5	60	51.0		
7	827	50.5	55.0	60	52.5		
6	407	50.0	54.0	60	52.0		
6	408	53.5	57.5	60	55.5		
6	409	63.5	67.0	60	65.5	Y	Y
6	414	48.0	52.5	60	50.0		
6	435	53.0	57.5	60	55.0		
6	436	59.0	61.5	60	61.0	Y	
6	443	48.0	52.5	60	50.0		
6	445	47.0	51.5	60	49.0		
6	712	55.5	59.5	60	57.5		
6	729	55.5	60.0	60	57.5		
5	446	51.5	55.5	60	53.5		
5	448	57.5	62.0	60	59.5	Y	
5	450	51.5	56.0	60	53.5		
5	451	45.5	50.0	60	47.5		
5	454	49.5	54.0	60	51.5		
5	459	55.0	59.0	60	57.0		
5	462	51.0	55.5	60	53.0		
5	464	48.5	53.0	60	50.5		
5	735	50.5	55.0	60	52.5		
5	823	48.5	53.0	60	50.5		
5	824	49.0	53.5	60	51.0		
4	461	50.5	55.5	60	52.5		
4	465	49.5	54.5	60	51.5		
4	471	60.5	65.5	60	62.5	Y	Y

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 15hr}$ (dB(A))	Design Noise 2026 $L_{eq, 15hr}$ (dB(A))	Day Base Criteria (dB(A))	Day Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 65 dB(A))?
4	478	58.0	63.0	60	60.0	Y	
4	479	48.5	52.5	60	50.5		
4	480	58.0	62.5	60	60.0	Y	
4	484	57.5	62.5	60	59.5	Y	
4	486	58.5	63.5	60	60.5	Y	
3	466	61.0	65.0	60	63.0	Y	Y
3	467	58.5	63.0	60	60.5	Y	
3	474	50.5	55.0	60	52.5		
3	475	58.0	62.5	60	60.0	Y	
3	482	51.0	55.5	60	53.0		
3	483	51.0	55.5	60	53.0		
3	488	57.0	61.0	60	59.0	Y	
3	490	51.0	55.5	60	53.0		
3	746	60.0	64.0	60	62.0	Y	
3	755	49.0	53.5	60	51.0		
3	821	59.5	64.0	60	61.5	Y	
2	495	49.0	51.5	55	51.0		
2	498	58.0	61.0	60	60.0	Y	
2	500	53.0	55.5	55	55.0		
1	491	48.5	50.5	55	50.5		
1	492	55.0	57.0	60	57.0		
1	493	54.0	56.5	55	56.0	Y	
1	496	50.5	52.5	55	52.5		
1	502	61.0	61.0	60	63.0		
1	503	67.0	65.5	60	69.0	Y	Y
1	767	50.0	52.0	55	52.0		
1	814	61.0	62.0	60	63.0		
1	920	61.0	60.5	60	63.0		
1	921	63.0	63.5	60	65.0	Y	
1	922	61.0	62.0	60	63.0		
1	923	65.5	68.5	60	67.5	Y	Y

Table C - 2 Calculated Night Time Noise Levels

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 9hr}$ (dB(A))	Design Noise 2026 $L_{eq, 9hr}$ (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 60 dB(A))?
22	28	50.0	51.5	55	52.0		
22	29	48.0	49.5	55	50.0		
22	30	54.0	55.5	55	56.0		
22	31	56.0	57.5	55	58.0		
22	32	50.5	52.0	55	52.5		
22	34	47.5	49.0	55	49.5		
22	36	45.5	47.0	55	47.5		
22	516	50.5	52.0	55	52.5		
22	867	57.0	58.5	55	59.0		
21	6	45.5	47.0	55	47.5		
21	9	49.0	50.5	55	51.0		
21	12	57.0	58.5	55	59.0		
21	20	55.5	57.0	55	57.5		
21	21	51.0	52.5	55	53.0		
21	23	49.5	51.0	55	51.5		
21	24	48.5	50.0	55	50.5		
21	25	48.0	49.5	55	50.0		
21	38	46.5	48.0	55	48.5		
21	39	49.5	51.0	55	51.5		
21	40	47.5	49.0	55	49.5		
21	41	49.0	50.0	55	51.0		
21	42	48.5	50.0	55	50.5		
21	43	50.0	51.5	55	52.0		
21	59	48.5	50.0	55	50.5		
21	60	46.5	47.5	55	48.5		
21	61	48.0	49.0	55	50.0		
21	63	51.0	53.0	55	53.0		
21	64	46.5	48.5	55	48.5		
21	68	48.0	49.5	55	50.0		
21	508	45.0	46.5	55	47.0		
21	510	42.0	43.5	55	44.0		
21	511	41.5	43.0	55	43.5		

NCA	Receiver No	Future Existing Level 2016 L _{eq, 9hr} (dB(A))	Design Noise 2026 L _{eq, 9hr} (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (>=60 dB(A))?
21	529	55.0	57.0	55	57.0		
21	530	49.0	51.0	55	51.0		
21	532	47.0	48.5	55	49.0		
21	534	48.0	49.5	55	50.0		
21	546	45.5	46.5	55	47.5		
21	548	45.0	46.0	55	47.0		
20	82	48.0	61.0	50	50.0	Y	Y
20	83	48.5	60.0	50	50.5	Y	Y
20	84	49.5	59.0	50	51.5	Y	
20	85	50.5	58.5	50	52.5	Y	
20	88	53.5	52.0	50	55.5		
20	91	55.0	50.0	50	57.0		
20	93	56.5	53.5	50	58.5	Y	
20	96	48.5	61.0	50	50.5	Y	Y
20	98	52.0	51.0	50	54.0		
20	99	49.0	49.0	50	51.0		
20	100	49.5	49.0	50	51.5		
20	103	55.5	54.0	50	57.5	Y	
20	105	52.5	50.0	50	54.5		
20	106	51.5	59.5	50	53.5	Y	
20	107	50.5	53.0	50 ⁽¹⁾	52.5	Y	
20	567	52.5	51.0	50	54.5		
20	853	50.5	51.0	50	52.5		
20	860	53.5	56.0	55	55.5	Y	
19	71	48.5	51.0	55	50.5		
19	74	48.0	53.0	50	50.0	Y	
19	75	48.5	54.5	50	50.5	Y	
19	76	52.5	61.0	50	54.5	Y	Y
19	77	49.0	55.0	50	51.0	Y	
19	80	49.0	56.0	50	51.0	Y	
19	855	47.5	51.5	50	49.5	Y	
18	850	43.5	50.5	50	45.5	Y	
17	109	51.5	51.0	50	53.5		
17	111	52.5	51.0	50	54.5		

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 9hr}$ (dB(A))	Design Noise 2026 $L_{eq, 9hr}$ (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 60 dB(A))?
17	113	59.0	47.5	50	61.0		
17	116	46.5	50.5	50	48.5	Y	
17	117	49.5	50.0	50	51.5		
17	119	43.5	51.0	50	45.5	Y	
17	123	41.0	52.5	50	43.0	Y	
17	125	40.5	53.0	50	42.5	Y	
17	126	40.0	55.0	50	42.0	Y	
17	128	39.0	56.0	50	41.0	Y	
17	129	39.5	54.0	50	41.5	Y	
17	130	40.5	53.5	50	42.5	Y	
17	131	41.0	52.5	50	43.0	Y	
17	133	38.5	54.0	50	40.5	Y	
17	135	42.0	52.0	50	44.0	Y	
17	138	49.0	48.5	50	51.0		
17	139	64.0	50.0	50	66.0		
17	142	65.5	51.0	50	67.5		
17	145	51.5	41.5	50	53.5		
17	146	45.0	29.5	50	47.0		
17	147	57.5	46.0	50	59.5		
17	148	64.5	50.5	50	66.5		
17	149	64.5	50.5	50	66.5		
17	150	63.5	50.0	50	65.5		
17	151	57.0	45.5	50	59.0		
17	152	57.5	45.5	50	59.5		
17	153	58.0	46.0	50	60.0		
17	154	58.5	46.0	50	60.5		
17	155	58.5	46.5	50	60.5		
17	156	59.5	47.0	50	61.5		
17	157	65.5	51.0	50	67.5		
17	158	64.5	50.0	50	66.5		
17	159	64.5	50.5	50	66.5		
17	160	64.0	50.0	50	66.0		
17	161	59.0	47.0	50	61.0		
17	162	59.5	47.0	50	61.5		
17	163	64.5	50.0	50	66.5		

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 9hr}$ (dB(A))	Design Noise 2026 $L_{eq, 9hr}$ (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 60 dB(A))?
17	164	64.5	50.5	50	66.5		
17	165	51.0	49.5	50	53.0		
17	580	48.0	49.0	50	50.0		
17	583	41.0	52.0	50	43.0	Y	
17	846	41.0	53.5	50	43.0	Y	
16	169	51.0	34.5	50	53.0		
16	170	53.0	44.0	50	55.0		
16	171	56.5	46.0	50	58.5		
16	172	63.0	49.0	50	65.0		
16	173	63.5	49.5	50	65.5		
16	174	63.0	49.0	50	65.0		
16	175	64.5	50.5	50	66.5		
16	176	63.5	49.5	50	65.5		
16	178	51.5	49.0	50	53.5		
16	179	48.0	32.0	50	50.0		
16	180	59.5	47.0	50	61.5		
16	181	59.0	47.0	50	61.0		
16	187	58.5	46.5	50	60.5		
16	188	58.5	46.5	50	60.5		
16	190	57.5	46.0	50	59.5		
16	191	57.5	46.0	50	59.5		
16	193	57.5	46.0	50	59.5		
16	210	46.5	30.5	50	48.5		
16	212	49.5	33.5	50	51.5		
16	213	51.5	35.5	50	53.5		
16	214	52.0	36.0	50	54.0		
16	215	51.5	35.5	50	53.5		
16	216	47.5	31.5	50	49.5		
16	219	56.5	40.5	50	58.5		
16	220	56.0	39.5	50	58.0		
16	221	57.0	41.0	50	59.0		
16	222	58.5	42.5	50	60.5		
16	223	59.0	42.5	50	61.0		
16	224	61.0	45.5	50	63.0		

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 9hr}$ (dB(A))	Design Noise 2026 $L_{eq, 9hr}$ (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 60 dB(A))?
16	225	60.5	44.0	50	62.5		
16	226	62.0	46.5	50	64.0		
16	227	63.5	48.5	50	65.5		
16	228	65.0	50.0	50	67.0		
16	229	67.5	51.5	50	69.5		
16	230	70.0	54.5	50	72.0	Y	
16	231	60.0	54.5	50	62.0	Y	
16	232	57.5	52.0	50	59.5		
16	233	56.0	51.5	50	58.0		
16	234	58.0	52.5	50	60.0	Y	
16	235	56.5	52.0	50	58.5		
16	236	54.0	50.5	50	56.0		
16	237	54.5	50.5	50	56.5		
16	238	54.0	50.0	50	56.0		
16	240	49.0	49.0	50	51.0		
16	242	50.5	49.5	50	52.5		
16	243	50.5	49.5	50	52.5		
16	244	53.0	49.5	50	55.0		
16	245	48.5	49.5	50	50.5		
16	246	48.5	49.5	50	50.5		
16	247	50.0	49.5	50	52.0		
16	248	45.0	49.5	50	47.0		
16	249	45.0	49.5	50	47.0		
16	250	44.5	49.5	50	46.5		
16	251	44.5	49.5	50	46.5		
16	252	45.5	49.5	50	47.5		
16	253	45.0	49.5	50	47.0		
16	256	44.0	51.0	50	46.0	Y	
16	272	48.0	49.5	50	50.0		
16	273	50.5	50.0	50	52.5		
16	274	50.0	49.5	50	52.0		
16	277	53.0	50.0	50	55.0		
16	278	50.5	49.5	50	52.5		
16	279	53.5	50.0	50	55.5		
16	280	52.0	50.0	50	54.0		

NCA	Receiver No	Future Existing Level 2016 L _{eq, 9hr} (dB(A))	Design Noise 2026 L _{eq, 9hr} (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (>=60 dB(A))?
16	281	54.5	50.5	50	56.5		
16	283	50.0	49.5	50	52.0		
16	284	50.5	49.5	50	52.5		
16	286	58.5	49.5	50	60.5		
16	288	57.5	49.5	50	59.5		
16	290	59.0	49.5	50	61.0		
16	291	62.0	50.0	50	64.0		
16	292	62.0	50.0	50	64.0		
16	293	62.0	50.0	50	64.0		
16	294	62.0	49.5	50	64.0		
16	295	62.5	50.0	50	64.5		
16	296	62.0	50.0	50	64.0		
16	297	61.0	48.5	50	63.0		
16	298	60.5	48.0	50	62.5		
16	299	59.5	48.0	50	61.5		
16	300	65.0	48.0	50	67.0		
16	301	65.5	47.5	50	67.5		
16	302	58.5	43.5	50	60.5		
16	303	47.5	31.0	50	49.5		
16	304	57.5	50.0	50	59.5		
16	305	59.5	50.5	50	61.5		
16	306	60.0	50.0	50	62.0		
16	307	64.5	51.0	50	66.5		
16	310	65.0	50.5	50	67.0		
16	602	56.5	45.5	50	58.5		
16	603	57.5	46.0	50	59.5		
16	605	58.5	46.5	50	60.5		
16	610	44.5	51.0	50	46.5	Y	
16	615	53.5	37.5	50	55.5		
16	617	48.0	32.0	50	50.0		
16	619	48.0	32.0	50	50.0		
16	620	34.0	18.0	50	36.0		
16	624	30.5	14.5	50	32.5		
15	204	38.5	58.5	50	40.5	Y	

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 9hr}$ (dB(A))	Design Noise 2026 $L_{eq, 9hr}$ (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 60 dB(A))?
15	205	40.5	52.5	50	42.5	Y	
15	209	41.5	50.5	50	43.5	Y	
15	266	42.5	58.0	50	44.5	Y	
15	270	45.0	52.0	50	47.0	Y	
15	271	48.0	52.0	50	50.0	Y	
15	308	62.5	50.0	50	64.5		
15	311	47.0	59.0	50	49.0	Y	
15	632	40.5	60.5	50	42.5	Y	Y
14	259	42.0	62.0	50	44.0	Y	Y
14	341	49.5	54.0	50	51.5	Y	
14	342	46.0	50.5	55	48.0		
14	647	49.5	54.0	50	51.5	Y	
14	790	41.0	48.5	50	43.0		
14	794	44.5	49.5	50	46.5		
14	796	38.5	43.0	50	40.5		
13	315	49.5	62.5	50	51.5	Y	Y
13	322	55.5	53.5	50	57.5	Y	
13	323	57.0	53.5	50	59.0	Y	
13	324	51.0	49.0	50	53.0		
13	326	54.0	50.5	50	56.0		
13	330	49.5	48.5	50	51.5		
13	332	47.0	47.0	50	49.0		
13	334	40.5	42.0	50	42.5		
13	336	41.0	42.5	50	43.0		
13	337	41.5	42.5	50	43.5		
13	338	39.0	42.0	50	41.0		
13	339	45.0	45.5	50	47.0		
13	340	48.5	49.0	50	50.5		
13	345	48.5	48.0	50	50.5		
13	347	46.0	46.0	50	48.0		
13	348	43.5	45.0	55	45.5		
13	350	44.0	46.0	55	46.0		
13	352	44.5	47.0	55	46.5		
13	839	54.0	51.0	50	56.0		

NCA	Receiver No	Future Existing Level 2016 L _{eq, 9hr} (dB(A))	Design Noise 2026 L _{eq, 9hr} (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (>=60 dB(A))?
13	840	59.0	54.0	50	61.0	Y	
12	363	59.5	63.0	55	61.5	Y	Y
12	364	58.0	61.5	55	60.0	Y	Y
12	365	56.0	59.0	55	58.0	Y	
12	367	52.0	55.5	55	54.0	Y	
12	374	63.5	64.5	55	65.5	Y	Y
12	375	63.5	64.5	55	65.5	Y	Y
12	378	56.0	57.5	55	58.0		
12	380	53.5	55.0	55	55.5		
11	355	44.0	46.0	55	46.0		
11	358	45.0	47.0	55	47.0		
11	359	47.0	49.0	55	49.0		
11	360	49.0	51.5	55	51.0		
11	361	57.0	61.5	55	59.0	Y	Y
11	370	52.0	54.5	55	54.0		
11	373	59.5	61.5	55	61.5	Y	Y
11	377	55.5	58.5	55	57.5	Y	
11	655	43.5	45.5	55	45.5		
10	381	41.0	46.0	55	43.0		
10	382	44.5	49.5	55	46.5		
10	383	48.5	53.0	55	50.5		
10	386	46.5	51.0	55	48.5		
10	688	53.0	58.0	55	55.0	Y	
9	392	48.0	53.0	55	50.0		
9	393	47.0	51.5	55	49.0		
9	394	47.0	52.0	55	49.0		
9	405	53.0	57.5	55	55.0	Y	
9	406	45.0	49.5	55	47.0		
9	689	47.0	51.5	55	49.0		
8	388	48.5	53.0	55	50.5		
8	390	49.5	54.0	55	51.5		
8	399	56.0	60.0	55	58.0	Y	Y
8	400	44.5	49.0	55	46.5		
8	402	47.5	52.0	55	49.5		

NCA	Receiver No	Future Existing Level 2016 $L_{eq, 9hr}$ (dB(A))	Design Noise 2026 $L_{eq, 9hr}$ (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (≥ 60 dB(A))?
8	404	48.0	52.0	55	50.0		
8	683	53.0	57.5	55	55.0	Y	
8	695	54.5	58.5	55	56.5	Y	
7	410	46.5	51.0	55	48.5		
7	411	44.5	49.0	55	46.5		
7	412	47.5	52.0	55	49.5		
7	418	44.5	49.0	55	46.5		
7	419	44.5	49.0	55	46.5		
7	420	45.0	49.5	55	47.0		
7	421	45.5	50.0	55	47.5		
7	422	45.5	50.0	55	47.5		
7	423	46.0	50.5	55	48.0		
7	427	44.0	48.5	55	46.0		
7	428	44.0	48.5	55	46.0		
7	429	44.5	49.0	55	46.5		
7	430	45.0	49.0	55	47.0		
7	431	45.5	50.0	55	47.5		
7	432	44.5	49.0	55	46.5		
7	433	45.0	49.5	55	47.0		
7	434	47.5	52.0	55	49.5		
7	438	54.0	58.0	55	56.0	Y	
7	439	51.5	56.0	55	53.5	Y	
7	441	44.0	48.5	55	46.0		
7	826	46.5	51.0	55	48.5		
7	827	48.0	52.5	55	50.0		
6	407	47.5	51.5	55	49.5		
6	408	51.0	55.0	55	53.0		
6	409	61.0	64.5	55	63.0	Y	Y
6	414	45.5	50.0	55	47.5		
6	435	51.0	55.0	55	53.0		
6	436	57.0	59.0	55	59.0		
6	443	46.0	50.5	55	48.0		
6	445	44.5	49.0	55	46.5		
6	712	53.0	57.0	55	55.0	Y	

NCA	Receiver No	Future Existing Level 2016 L _{eq, 9hr} (dB(A))	Design Noise 2026 L _{eq, 9hr} (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (>=60 dB(A))?
6	729	54.0	58.0	55	56.0	Y	
5	446	49.0	53.5	55	51.0		
5	448	55.0	59.5	55	57.0	Y	
5	450	49.5	53.5	55	51.5		
5	451	43.5	47.5	55	45.5		
5	454	47.0	51.5	55	49.0		
5	459	52.5	57.0	55	54.5	Y	
5	462	48.5	53.0	55	50.5		
5	464	46.5	50.5	55	48.5		
5	735	48.5	52.5	55	50.5		
5	823	46.5	51.0	55	48.5		
5	824	47.0	51.0	55	49.0		
4	461	48.5	53.0	55	50.5		
4	465	47.5	52.0	55	49.5		
4	471	58.5	63.0	55	60.5	Y	Y
4	478	56.0	61.0	55	58.0	Y	Y
4	479	46.0	50.5	55	48.0		
4	480	55.5	60.0	55	57.5	Y	Y
4	484	55.5	60.5	55	57.5	Y	Y
4	486	56.5	61.0	55	58.5	Y	Y
3	466	59.0	62.5	55	61.0	Y	Y
3	467	56.5	61.0	55	58.5	Y	Y
3	474	48.0	52.5	55	50.0		
3	475	56.0	60.0	55	58.0	Y	Y
3	482	48.5	53.0	55	50.5		
3	483	49.0	53.0	55	51.0		
3	488	54.5	58.5	55	56.5	Y	
3	490	48.5	53.0	55	50.5		
3	746	57.5	61.5	55	59.5	Y	Y
3	755	46.5	51.0	55	48.5		
3	821	57.5	61.5	55	59.5	Y	Y
2	495	47.0	49.0	50	49.0		
2	498	56.0	58.5	55	58.0	Y	
2	500	51.0	53.0	50 ⁽¹⁾	53.0	Y	
1	491	46.0	48.0	50	48.0		

NCA	Receiver No	Future Existing Level 2016 L _{eq, 9hr} (dB(A))	Design Noise 2026 L _{eq, 9hr} (dB(A))	Night Base Criteria (dB(A))	Night Allowance Criteria (dB(A))	Does the Receiver need Mitigation according to ENMM guidelines?	Design Noise 2026 Acute (>=60 dB(A))?
1	492	52.5	54.5	55	54.5		
1	493	51.5	54.0	50 ⁽¹⁾	53.5	Y	
1	496	48.5	50.5	50	50.5		
1	502	58.5	59.0	55	60.5		
1	503	64.5	63.0	55	66.5	Y	Y
1	767	48.0	49.5	50	50.0		
1	814	58.5	60.0	55	60.5	Y	Y
1	920	58.5	58.5	55	60.5	Y	
1	921	60.5	61	55	62.5	Y	Y
1	922	58.5	60	55	60.5	Y	Y
1	923	63	65.5	55	65	Y	Y

Notes 1 Refer description at cover page to Appendix C