

A8.4: Wider Road Network Assessment

1 Introduction

- 1.1 As stated in paragraph 8.5.45 of Chapter 8 (Noise and Vibration), the Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 7 HD213/11 Revision 1 'Noise and Vibration' (Highways Agency, Transport Scotland, Welsh Government and The Department for Regional Development Northern Ireland 2011) indicates that an assessment of the impacts upon the wider network, i.e. Noise Sensitive Receptors (NSRs) that are within 50m of roads outside the study area that are predicted to experience a change of 1dB or more in the short-term or 3dB or more in the long-term, should be undertaken.
- 1.2 There are 80 road links outside the core study area which are predicted to meet the aforementioned criteria. Table 1 provides a list of road links that are predicted to experience a change of 1dB or more in the basic noise level during the short-term assessment and the number of NSRs that are within 50m of the proposed Scheme. It should be noted that in some instances a property will be within 50m of both an adverse and beneficial road and this has also been reported in Table 1 in terms of differing qualitative effect. In addition the table includes the annual average weekday traffic flow (AAWT), percentage of heavy goods vehicles and average traffic speed used to predict the basic noise level (BNL) of each road link.
- 1.3 The results show that, in the short-term, there are predicted to be 16 NSRs that are within 50m of an adversely affected road. Whilst there are 250 NSRs that are within 50m of a beneficially affected road.
- 1.4 Table 2 provides a list of the roads that are predicted to experience a change of 3dB or more in the long-term and the number of NSRs that are within 50m of the proposed Scheme. It should be noted that in some instances a property will be within 50m of both an adverse and beneficial road and this has also been reported in Table 2 in terms of differing qualitative effect. In addition the table includes the annual average weekday traffic flow (AAWT), percentage of heavy goods vehicles and average traffic speed used to predict the basic noise level (BNL) of each road link.
- 1.5 In the long-term the number of NSRs that are within 50m of an adversely affected road is 24. Whilst there are 29 NSRs that are within 50m of a beneficially affected road.

Table 1: Wider Road Network Short-term Assessment

Road Link ID	Road Name	Do Minimum Baseline (2021)				Do Something Baseline (2021)				Noise Level Difference (dB)	Qualitative Effect	Number of NSRs within 50m of Road Link	Number of NSRs within 50m of Road Link of Differing Qualitative Effect
		18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB)	18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB)				
118700892_118700893	Lochloy Road	2,559	0	44	59.7	1,436	1	44	57.7	-2.0	Beneficial	0	
114494684_114494692	-	584	0	64	55.6	740	0	64	56.6	1.0	Adverse	3	2
118700892_124412818	Lochloy Road	2,534	0	44	59.7	2,155	0	31	57.7	-2.0	Beneficial	3	
118613714_118701367	B9091	918	0	88	60.1	212	0	95	54.4	-5.7	Beneficial	5	
118613714_237404085	B9091	918	0	88	60.1	212	0	95	54.4	-5.7	Beneficial	0	
118701347_118701367	B9091	918	0	58	56.8	212	0	62	50.9	-5.9	Beneficial	2	
118613733_237404085	B9091	918	0	44	55.2	212	0	47	49.2	-6.0	Beneficial	22	6
118701096_124412817	Unknown	981	0	43	55.4	1,665	0	40	57.4	2.0	Adverse	3	
124412817_124412818	Unknown	981	0	48	56.0	1,665	0	48	58.3	2.3	Adverse	0	
114494733_114494736	B9006	6,570	2	62	66.5	4,636	2	63	65.1	-1.4	Beneficial	3	
114494736_114494756	B9006	6,570	2	62	66.5	4,636	2	63	65.1	-1.4	Beneficial	6	
114494733_114497205	B9006	6,570	2	62	66.5	4,636	2	63	65.1	-1.4	Beneficial	8	
114494692_114497205	B9006	6,570	2	62	66.5	4,636	2	63	65.1	-1.4	Beneficial	10	2
118613733_118613734	-	4,665	2	48	63.6	2,966	3	48	62.0	-1.6	Beneficial	2	1
118701394_237404083	B9090	3,807	2	79	65.9	2,757	3	80	64.8	-1.1	Beneficial	1	
33672_118613733	-	3,807	2	48	62.7	2,757	3	48	61.7	-1.0	Beneficial	0	
33671_118613734	-	1,748	1	48	58.9	2,605	1	48	60.7	1.8	Adverse	5	2
118613706_237404084	B9090	1,724	0	80	62.0	2,581	0	80	63.8	1.8	Adverse	0	
114492878_114492897	-	3,909	3	96	67.8	2,038	6	97	65.6	-2.2	Beneficial	8	
114494068_114494069	-	4,692	3	96	68.6	2,779	4	97	66.6	-2.0	Beneficial	0	
114494690_114494692	B9006	5,990	2	62	66.1	3,889	3	63	64.6	-1.5	Beneficial	0	
118701394_118701409	B9090	3,807	2	80	66.0	2,757	3	80	64.8	-1.2	Beneficial	1	
35387_114494069	B9006	4,692	3	96	68.6	2,779	4	97	66.6	-2.0	Beneficial	0	

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Road Link ID	Road Name	Do Minimum Baseline (2021)				Do Something Baseline (2021)				Noise Level Difference (dB)	Qualitative Effect	Number of NSRs within 50m of Road Link	Number of NSRs within 50m of Road Link of Differing Qualitative Effect
		18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB)	18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB)				
35386_114494180	B9006	4,692	3	96	68.6	2,779	4	97	66.6	-2.0	Beneficial	0	
33671_237404084	B9090	1,724	0	48	58.4	2,581	0	48	60.2	1.8	Adverse	5	1
114494840_114497457	Caulifield Road	1,894	1	47	59.2	1,472	1	48	58.2	-1.0	Beneficial	5	
114494180_114497723	B9006	5,098	3	95	68.9	3,269	4	97	67.3	-1.6	Beneficial	2	
114493760_114493770	B9006	5,098	3	63	65.8	3,269	4	64	64.2	-1.6	Beneficial	3	
114493826_114497723	B9006	5,098	3	63	65.8	3,269	4	64	64.2	-1.6	Beneficial	1	
35324_114493760	B9006	5,098	3	63	65.8	3,269	4	64	64.2	-1.6	Beneficial	5	
35324_35325	-	5,098	3	63	65.8	3,269	4	64	64.2	-1.6	Beneficial	0	
35325_114493826	-	5,098	3	63	65.8	3,269	4	64	64.2	-1.6	Beneficial	0	
114494068_114494090	B9006	4,704	3	95	68.5	2,596	5	97	66.5	-2.0	Beneficial	2	
114494090_114494122	B9006	4,704	3	95	68.5	2,596	5	97	66.5	-2.0	Beneficial	0	
114494646_114494687	B9006	4,653	2	95	68.3	2,545	3	97	66.0	-2.3	Beneficial	0	
114494711_114494727	B9006	4,653	2	63	65.1	2,545	3	64	62.9	-2.2	Beneficial	4	
114494727_114494759	B9006	4,653	2	63	65.1	2,545	3	64	62.9	-2.2	Beneficial	4	
114494756_114494759	B9006	4,653	2	63	65.1	2,545	3	64	62.9	-2.2	Beneficial	4	
114494122_114497071	B9006	4,653	2	95	68.3	2,545	3	97	66.0	-2.3	Beneficial	0	
114494646_114497206	B9006	4,653	2	95	68.3	2,545	3	97	66.0	-2.3	Beneficial	0	
114497206_114497211	B9006	4,653	2	95	68.3	2,545	3	97	66.0	-2.3	Beneficial	3	
114497071_114497211	B9006	4,653	2	95	68.3	2,545	3	97	66.0	-2.3	Beneficial	0	
114494711_237404080	B9006	4,653	2	63	65.1	2,545	3	64	62.9	-2.2	Beneficial	2	
114494687_237404080	B9006	4,653	2	95	68.3	2,545	3	97	66.0	-2.3	Beneficial	0	
35386_35387	B9039	4,692	3	97	68.7	2,779	4	97	66.6	-2.1	Beneficial	0	
118701356_118701359	B9101	2,631	2	80	64.4	1,461	4	80	62.3	-2.1	Beneficial	2	

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		18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB)	18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB)				
118701359_118701360	B9101	2,936	1	80	64.6	1,734	2	80	62.5	-2.1	Beneficial	0	
118701360_118701366	B9090	2,936	1	80	64.6	1,734	2	80	62.5	-2.1	Beneficial	10	
118701373_118701377	B9090	2,954	2	80	64.9	1,752	3	80	62.8	-2.1	Beneficial	0	
118701377_118701383	B9090	2,954	2	80	64.9	1,752	3	80	62.8	-2.1	Beneficial	0	
118701409_118701410	-	2,956	2	80	64.9	1,754	4	80	63.1	-1.8	Beneficial	0	
118701410_237404098	-	2,956	2	80	64.9	1,754	4	80	63.1	-1.8	Beneficial	0	
118701383_237404099	B9090	2,954	2	80	64.9	1,752	3	80	62.8	-2.1	Beneficial	0	
118701373_237404100	B9090	2,936	1	80	64.6	1,734	2	80	62.5	-2.1	Beneficial	0	
118701366_237404100	B9090	2,936	1	48	61.2	1,734	2	48	59.3	-1.9	Beneficial	14	
118701390_118701391	B9090	2,959	2	64	63.2	1,757	4	64	61.5	-1.7	Beneficial	0	
118701390_118701396	B9090	2,959	2	64	63.2	1,757	4	64	61.5	-1.7	Beneficial	3	
118701396_118701399	B9090	2,959	2	64	63.2	1,757	4	64	61.5	-1.7	Beneficial	1	
118701399_118701401	B9090	2,959	2	64	63.2	1,757	4	64	61.5	-1.7	Beneficial	1	
118701401_118701407	-	2,957	2	64	63.2	1,755	4	64	61.5	-1.7	Beneficial	4	
33674_118701407	-	2,957	2	64	63.2	1,755	4	64	61.5	-1.7	Beneficial	1	
33673_33674	-	2,957	2	64	63.2	1,755	4	64	61.5	-1.7	Beneficial	2	
33673_118701414	-	2,956	2	64	63.2	1,754	4	64	61.5	-1.7	Beneficial	0	
118701414_237404098	-	2,956	2	64	63.2	1,754	4	64	61.5	-1.7	Beneficial	0	
118701391_237404099	B9090	2,954	2	64	63.2	1,752	3	64	61.2	-2.0	Beneficial	0	
114492897_114492924	-	3,909	3	96	67.8	2,038	6	97	65.6	-2.2	Beneficial	8	
114492924_114493040	B9006	3,909	3	96	67.8	2,038	6	97	65.6	-2.2	Beneficial	12	
114493040_237404081	B9006	3,922	3	96	67.8	2,051	6	97	65.6	-2.2	Beneficial	7	
114493740_114497658	B9006	4,376	3	63	65.1	2,512	5	64	63.3	-1.8	Beneficial	19	

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		18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB)	18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB)				
34484_114493740	B9006	4,382	3	63	65.1	2,518	5	64	63.3	-1.8	Beneficial	18	
34484_34485	-	4,385	3	71	65.9	2,521	5	72	64.1	-1.8	Beneficial	0	
34485_114493770	B9006	4,388	3	63	65.1	2,524	5	64	63.4	-1.7	Beneficial	2	
114497658_237404081	B9006	3,922	3	63	64.7	2,051	6	64	62.7	-2.0	Beneficial	6	
114492855_114492878	B9091	3,139	1	96	66.4	1,338	3	97	63.2	-3.2	Beneficial	28	
114492855_118618629	B9091	3,351	2	97	67.0	1,420	5	97	63.9	-3.1	Beneficial	8	
118613747_118618629	B9091	3,351	2	97	67.0	1,420	5	97	63.9	-3.1	Beneficial	0	
118613747_237404082	B9091	3,351	2	97	67.0	1,420	5	97	63.9	-3.1	Beneficial	0	
118613734_237404082	B9091	3,351	2	48	62.1	1,420	5	48	59.4	-2.7	Beneficial	0	

Table 2: Wider Road Network Long-term Assessment

Road Link ID	Road Name	Do Minimum Baseline (2021)				Do Something Future (2036)				Noise Level Difference (dB)	Qualitative Effect	Number of NSRs within 50m of Road Link	Number of NSRs within 50m of Road Link of Differing Qualitative Effect
		18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB))	18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB))				
118613714_118701367	B9091	918	0	88	60.1	266	1	94	55.5	-4.6	Beneficial	5	
118613714_237404085	B9091	918	0	88	60.1	266	1	94	55.5	-4.6	Beneficial	0	
118701347_118701367	B9091	918	0	58	56.8	266	1	62	52.3	-4.5	Beneficial	2	
118613733_237404085	B9091	918	0	44	55.2	266	1	47	50.6	-4.6	Beneficial	22	6
33671_118613734	-	1,748	1	48	58.9	3,430	1	48	61.9	3.0	Adverse	5	5

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		18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB)	18 Hr AAWT	% of Heavy Goods Vehicles	Average Traffic Speed (kph)	Basic Noise Level (L _{A10,18h}) (dB)				
118613706_237404084	B9090	1,724	0	80	62.0	3,406	1	80	65.2	3.2	Adverse	0	
33671_237404084	B9090	1,724	0	48	58.4	3,406	1	48	61.8	3.4	Adverse	5	1
114492919_114493028	Unknown	907	7	45	57.8	3,533	3	43	62.3	4.5	Adverse	0	
114494057_114494130	Unknown	745	2	43	55.1	3,349	1	36	60.6	5.5	Adverse	14	

References

Highways Agency, Transport Scotland, Welsh Government and The Department for Regional Development Northern Ireland (2011). Design Manual for Roads and Bridges Volume 11 Environmental Assessment Section 3 Environmental Assessment Techniques Part 7 HD213/11 – Revision 1 Noise and Vibration.