



APPENDIX 9 – NOISE AND VIBRATION

Appendix 9.1: Glossary of Terms

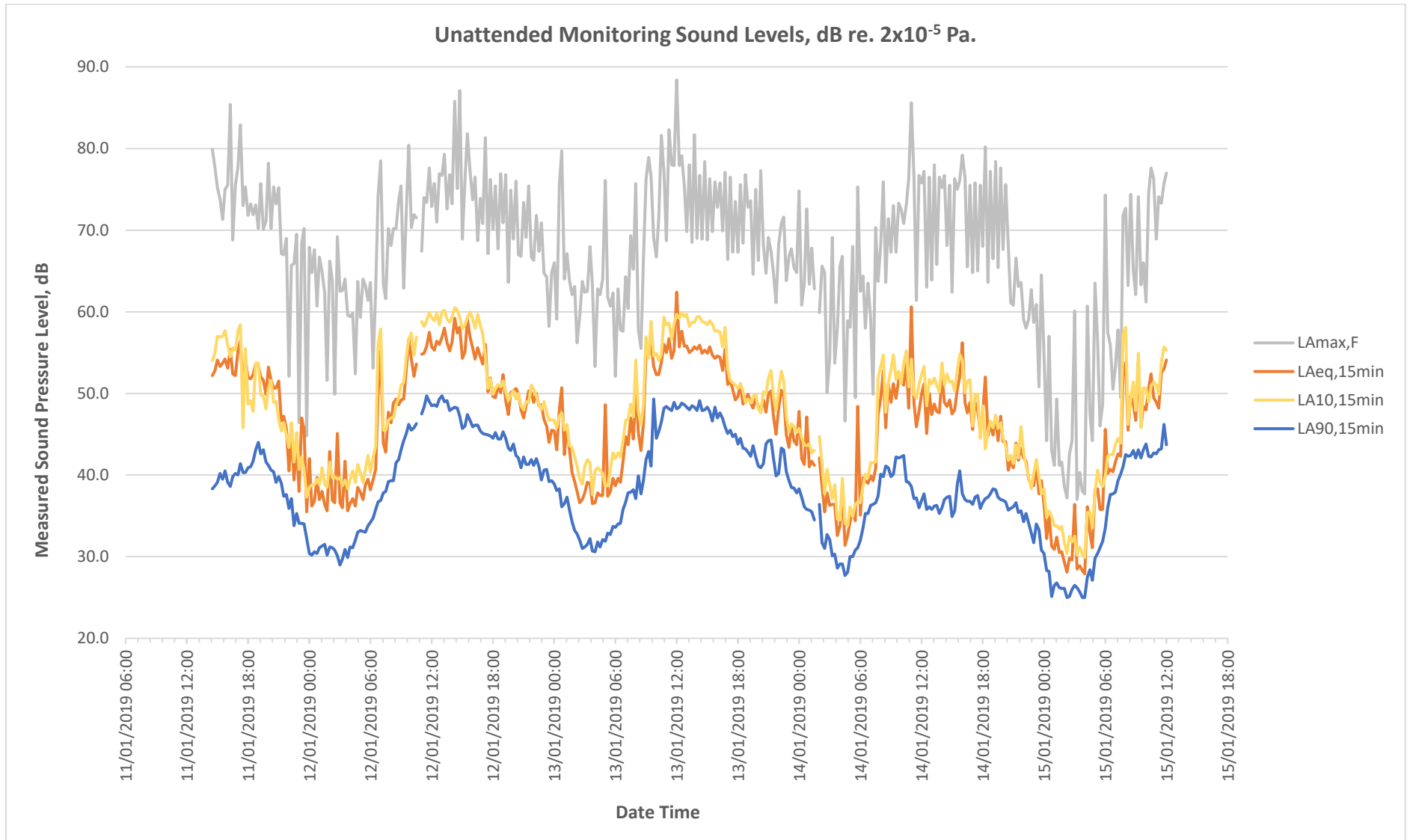
Term	Definition
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s_1 and s_2 is given by $20 \log_{10} (s_1/s_2)$. The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is $20\mu\text{Pa}$.
A-weighting, dB(A)	The unit of sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at some frequencies.
Noise Level Indices	Noise levels usually fluctuate over time, so it is often necessary to consider an average or statistical noise level. This can be done in several ways, so a number of different noise indices have been defined, according to how the averaging or statistics are carried out.
$L_{\text{eq},T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{\text{max},F}$	A noise level index defined as the maximum noise level during the period T. L_{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{90,T}$	A noise level index. The noise level exceeded for 90% of the time over the period T. L_{90} can be considered to be the 'average minimum' noise level and is often used to describe the background noise.
Free-Field	Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5m
Ambient Noise Level	The totally encompassing sound in a given situation at a given time, usually composed of a sound from many sources both distant and near ($L_{\text{Aeq},T}$).
Residual Noise Level	The ambient noise remaining at a given position in a given situation when specified sources are suppressed to a degree such that they do not contribute to the ambient noise level ($L_{\text{Aeq},T}$)
Specific Noise Level	The equivalent continuous A-weighted sound pressure level at the assessment position produced by the specific noise source (the noise source under investigation) over a given time interval ($L_{\text{Aeq},T}$)
Rating Noise Level	The specific noise level plus any adjustment for the characteristic features of the noise (L_{Ar,T_r}).

Appendix 9.2: Site Layout Plan



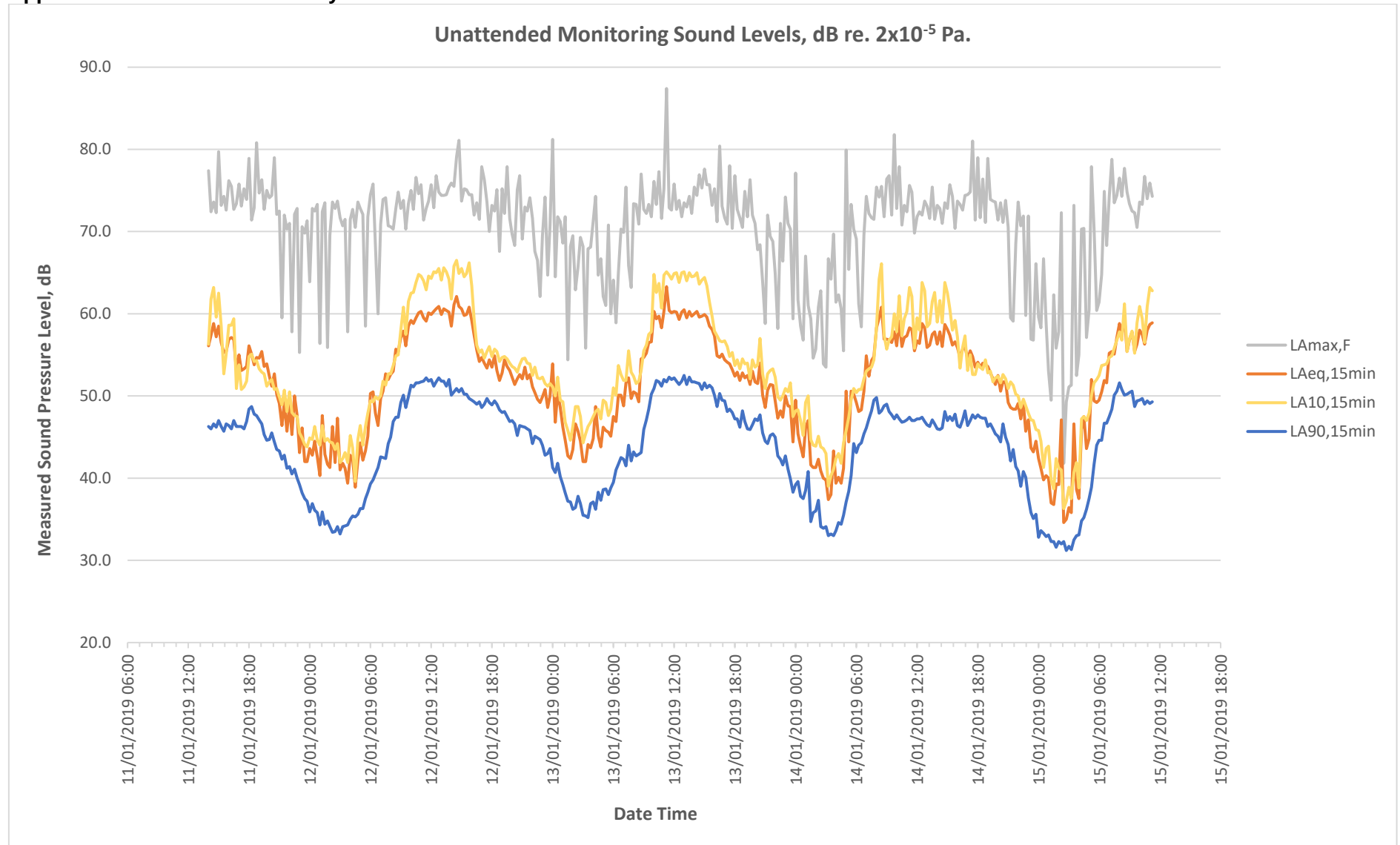


Appendix 9.3: Unattended Survey Results – Site 1





Appendix 9.4: Unattended Survey Results – Site 2





Appendix 9.5: Road Traffic Flows

Link ID	Road Link	2018 Baseline			2035 Do Minimum			2035 Do Something		
		AADT	18-Hr AAWT	HGV (%)	AADT	18-Hr AAWT	HGV (%)	AADT	18-Hr AAWT	HGV (%)
1	A2 New Rd	22594	22669	2.3%	28241	28334	1.4%	26681	26769	1.3%
2	Magpie Hall Rd	4901	4917	2.3%	5649	5667	2.1%	5367	5385	1.9%
3	A2 Chatham Hill	27947	28040	3.8%	37607	37732	4.3%	35292	35409	3.3%
4	Luton Road	10655	10690	5.1%	13778	13824	7.0%	12889	12932	4.5%
5	A2 Chatham Hill E	20464	20531	2.7%	27015	27104	2.6%	25533	25618	2.3%
6	A2 Rainham Road	10879	10915	3.0%	15894	15946	2.8%	15822	15875	2.6%
7	Ash Tree Lane N	4645	4660	1.0%	6518	6540	0.8%	6404	6425	1.2%
8	A2	13313	13357	3.1%	17534	17592	2.3%	17273	17330	2.1%
9	A2 Watling St	19457	19522	3.1%	23446	23524	3.2%	23362	23439	3.1%
10	A2 Sovereign Blvd W	24609	24691	2.9%	27228	27318	3.2%	27981	28074	3.0%
11	A2 sovereign Blvd E of	30612	30713	2.7%	35404	35521	2.9%	35239	35355	2.8%
12	Ito Way	23156	23233	2.1%	29462	29559	2.1%	28598	28693	2.4%
13	A2 Sovereign Blvd	36877	36999	3.1%	44581	44729	2.8%	43804	43950	3.0%
14	A2 London Rd	23881	23960	1.1%	24816	24898	0.8%	24801	24884	0.7%
15	Hoath Way N	28493	28587	2.8%	37923	38048	1.6%	36056	36176	2.0%
16	Hoath Way W	7642	7667	3.1%	12183	12223	2.3%	12003	12042	2.0%
17	Hoath Way E	5966	5986	3.1%	7284	7308	2.7%	7416	7440	3.0%
18	Hoath Way	14884	14933	2.7%	21291	21362	1.8%	20062	20129	2.2%
19	Hempstead Rd	11470	11508	2.6%	16691	16746	1.8%	17085	17141	1.5%
20	Sharsted Wat	14277	14325	3.4%	19438	19502	4.6%	19811	19877	4.4%
21	Wigmore Road	14166	14213	6.9%	18212	18272	8.2%	18168	18228	7.7%
22	Hoath Way S	40706	40841	4.0%	55842	56027	3.3%	53379	53556	3.5%
23	M2 EB on	9012	9042	4.1%	10382	10416	4.0%	9965	9998	4.5%
24	M2 EB off	12450	12491	4.8%	18376	18437	4.5%	17173	17230	4.3%
25	M2 WB off	8498	8526	2.8%	9821	9854	1.5%	10122	10155	1.7%
26	M2 WB on	10671	10707	3.8%	17494	17552	2.7%	16656	16711	3.1%
27	Hempstead Rd	4170	4184	7.6%	6006	6026	4.4%	5516	5534	6.8%
28	Hempstead Valley Dr	1874	1880	2.7%	2395	2403	4.8%	2369	2377	3.7%
29	Pear Tree Lane	10854	10890	2.4%	14647	14696	2.0%	15075	15125	3.0%
30	Capstone Road S	5693	5712	2.4%	13286	13330	1.9%	9405	9437	1.8%
31	Capstone Road	10984	11021	2.0%	19373	19437	1.9%	16388	16442	1.1%
32	Ash Tree Land S	13800	13846	1.6%	19609	19674	1.5%	18451	18512	1.2%
33	Capstone Road W	18194	18254	1.6%	22503	22577	1.2%	12432	12473	1.2%
34	Capstone Road W	10622	10657	3.4%	14776	14825	3.5%	11372	11410	1.5%
35	Street End Rd	10005	10038	3.1%	13301	13345	3.9%	13115	13159	3.6%
36	Luton High St	12599	12641	4.3%	15890	15943	5.8%	16581	16636	3.3%
37	N Dane Way	18926	18988	2.5%	22777	22852	2.8%	13352	13396	1.3%
38	Princes Ave	13028	13071	2.9%	17828	17887	3.3%	17625	17683	1.5%
39	Shawstead Rd	1195	1199	9.3%	5897	5917	1.5%	-	-	-
40	N Dane Way	9949	9982	1.4%	14399	14447	1.3%	-	-	-
41	Lords Wood Ln	3840	3853	1.8%	5017	5033	2.3%	7464	7489	1.0%
42	N Dane Way	7674	7700	1.0%	10992	11028	0.8%	12068	12108	1.0%
43	Albermarle Rd	3675	3687	5.0%	4320	4334	7.5%	3976	3989	8.2%
44	Lords Wood Ln	6038	6058	3.9%	8362	8389	4.9%	7551	7576	4.6%
46	Walderslade Woods	15510	15561	2.8%	23290	23367	2.4%	22915	22990	2.4%
48	Pear Tree Lane	10417	10451	1.6%	18027	18087	1.1%	20205	20272	1.2%
49	N Dane Way (S of S access)	-	-	-	-	-	-	18215	18276	1.1%
50	New Access S	-	-	-	-	-	-	7584	7609	1.0%
51	New Link E	-	-	-	-	-	-	13764	13810	1.2%
52	New Link N	-	-	-	-	-	-	24914	24996	1.4%
53	New Link W	-	-	-	-	-	-	15282	15333	1.3%
54	new link to Shawstead Rd	-	-	-	-	-	-	4857	4873	1.0%
55	N Dane Way (N of S access)	-	-	-	-	-	-	10711	10747	1.2%