The Sizewell C Project

6.6 Volume 5 Two Village Bypass

Chapter 4 Noise and Vibration

Appendices 4A - 4B

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VOLUME 5, CHAPTER 4, APPENDIX 4A: ROAD TRAFFIC FLOW DATA

Contents

Tables

Plates

None provided.

Figures

None provided.

1 Road Traffic Flow Data

Table 1.1: Two Village Bypass - Speed = 96 km/h.

Two village bypass	2028 Typical Peak Construction		2028 Busiest Peak Construction		2034 Operational Phase	
	Do something opening year		Do something opening year		Do something future year	
Time	HDVs per Hour.	Cars per Hour.	HDVs per Hour.	Cars per Hour.	HDVs per Hour.	Cars per Hour.
00:00–01:00.	2	63	2	63	2	48
01:00–02:00.	1	34	1	34	1	31
02:00–03:00.	1	26	1	26	1	28
03:00–04:00.	1	32	1	32	2	35
04:00–05:00.	3	67	3	67	3	69
05:00–06:00.	17	223	17	223	9	216
06:00–07:00.	94	738	98	738	60	760
07:00–08:00.	131	1385	155	1380	79	1472
08:00–09:00.	144	1457	165	1446	87	1587
09:00–10:00.	107	1362	133	1356	66	1431
10:00–11:00.	105	1353	130	1347	65	1426
11:00–12:00.	110	1344	137	1338	63	1419
12:00–13:00.	106	1359	131	1354	63	1430
13:00–14:00.	115	1328	139	1322	60	1383
14:00–15:00.	121	1381	145	1375	62	1456
15:00–16:00.	145	1648	171	1646	78	1750
16:00–17:00.	119	1833	140	1816	67	1964
17:00–18:00.	90	1644	106	1638	44	1710
18:00–19:00.	71	1369	83	1369	28	1414
19:00–20:00.	48	680	58	677	30	700
20:00–21:00.	44	443	51	441	19	455
21:00–22:00.	25	363	27	362	16	383
22:00–23:00.	23	251	25	250	11	262
23:00–00:00.	18	118	19	117	5	122

Table 1.2: A12 south of Two Village Bypass junction - Speed = 64 km/h.

A12 south of 2VB junction	2028 Typical Peak Construction		2028 Busiest Day Peak Construction		2034 Operational Phase	
	Do something opening year		Do something opening year		Do something future year	
Time	HDVs per Hour.	Cars per Hour.	HDVs per Hour.	Cars per Hour.	HDVs per Hour.	Cars per Hour.
00:00–01:00.	2	66	2	66	2	49
01:00–02:00.	1	36	1	36	1	32
02:00–03:00.	1	27	1	27	1	29
03:00–04:00.	2	34	2	34	2	36
04:00–05:00.	3	70	3	69	3	72
05:00–06:00.	17	233	17	232	10	224
06:00–07:00.	97	763	103	763	62	774
07:00–08:00.	134	1437	156	1431	82	1497
08:00–09:00.	147	1539	168	1528	86	1603
09:00–10:00.	109	1420	135	1414	63	1477
10:00–11:00.	106	1411	131	1405	62	1472
11:00–12:00.	112	1402	139	1396	62	1465
12:00–13:00.	108	1418	133	1412	62	1476
13:00–14:00.	117	1385	141	1379	60	1423
14:00–15:00.	122	1440	147	1434	63	1499
15:00–16:00.	147	1725	173	1722	79	1825
16:00–17:00.	122	1905	143	1888	73	1962
17:00–18:00.	97	1705	113	1698	47	1766
18:00–19:00.	73	1425	86	1425	31	1443
19:00–20:00.	49	709	59	706	31	725
20:00–21:00.	45	462	51	460	20	472
21:00–22:00.	25	379	28	377	17	393
22:00–23:00.	23	262	25	261	11	267
23:00–00:00.	18	123	19	122	5	126

Table 1.3: A12 Farnham Bend - Speed = 48 km/h.

A12 Farnham Bend	2028 Typical Peak Construction		2028 Busiest Day Peak Construction		2034 Operational Phase	
	Do something opening year		Do something opening year		Do something future year	
Time	HDVs per Hour.	Cars per Hour.	HDVs per Hour.	Cars per Hour.	HDVs per Hour.	Cars per Hour.
00:00–01:00.	0	1	0	1	0	1
01:00–02:00.	0	0	0	0	0	0
02:00–03:00.	0	0	0	0	0	0
03:00–04:00.	0	0	0	0	0	0
04:00–05:00.	0	1	0	1	0	1
05:00–06:00.	0	3	0	3	0	3
06:00–07:00.	0	8	0	8	1	9
07:00–08:00.	2	19	2	19	2	20
08:00–09:00.	2	23	2	23	2	24
09:00–10:00.	0	18	0	18	1	19
10:00–11:00.	0	18	0	18	1	19
11:00–12:00.	0	18	0	18	1	19
12:00–13:00.	0	18	0	18	1	19
13:00–14:00.	0	17	0	17	1	18
14:00–15:00.	0	18	0	18	1	19
15:00–16:00.	1	26	1	26	0	29
16:00–17:00.	3	19	3	19	4	19
17:00–18:00.	2	19	2	19	2	21
18:00–19:00.	2	15	2	15	2	15
19:00–20:00.	0	9	0	9	0	9
20:00–21:00.	0	6	0	6	0	6
21:00–22:00.	0	5	0	5	0	5
22:00–23:00.	0	3	0	3	0	3
23:00–00:00.	0	2	0	2	0	2

Table 1.4: A12 south of Two Village Bypass junction - Speed = 64 km/h. Reference Case Figures

A12 south of 2VB junction	No SZC Traffic			
	2028 Reference Case.		2034 Reference Case.	
Time	Do minimum opening year		Do minimum future year	
	HGVs per Hour.	Cars per Hour.	HGVs per Hour.	Cars per Hour.
00:00–01:00.	2	47	2	49
01:00–02:00.	1	30	1	32
02:00–03:00.	1	28	1	29
03:00–04:00.	2	34	2	36
04:00–05:00.	3	68	3	72
05:00–06:00.	10	211	10	224
06:00–07:00.	61	743	62	774
07:00–08:00.	80	1427	82	1497
08:00–09:00.	88	1507	86	1603
09:00–10:00.	63	1394	63	1477
10:00–11:00.	62	1389	62	1472
11:00–12:00.	62	1382	62	1465
12:00–13:00.	62	1393	62	1476
13:00–14:00.	60	1343	60	1423
14:00–15:00.	63	1414	63	1499
15:00–16:00.	77	1692	79	1825
16:00–17:00.	72	1869	73	1962
17:00–18:00.	47	1658	47	1766
18:00–19:00.	32	1372	31	1443
19:00–20:00.	31	685	31	725
20:00–21:00.	20	446	20	472
21:00–22:00.	17	371	17	393
22:00–23:00.	11	252	11	267
23:00–00:00.	5	119	5	126

Table 1.5: A12 Farnham Bend - Speed = 48 km/h. Reference Case Figures

A12 Farnham Bend	No SZC Traffic			
	2028 Reference Case.		2034 Reference Case.	
Time	Do minimum opening year		Do minimum future year	
	HGVs per Hour.	Cars per Hour.	HGVs per Hour.	Cars per Hour.
00:00–01:00.	2	46	2	49
01:00–02:00.	1	30	1	32
02:00–03:00.	1	28	1	30
03:00–04:00.	2	34	2	36
04:00–05:00.	3	69	3	73
05:00–06:00.	10	212	10	225
06:00–07:00.	55	711	56	745
07:00–08:00.	83	1447	85	1518
08:00–09:00.	93	1491	92	1582
09:00–10:00.	63	1395	64	1477
10:00–11:00.	62	1389	63	1472
11:00–12:00.	61	1381	62	1463
12:00–13:00.	61	1391	62	1473
13:00–14:00.	60	1346	61	1425
14:00–15:00.	63	1415	64	1499
15:00–16:00.	82	1695	84	1824
16:00–17:00.	73	1851	74	1942
17:00–18:00.	41	1657	43	1762
18:00–19:00.	29	1428	29	1501
19:00–20:00.	30	684	31	724
20:00–21:00.	20	446	20	472
21:00–22:00.	16	369	17	390
22:00–23:00.	11	251	11	266
23:00–00:00.	5	121	5	128

VOLUME 5, CHAPTER 4, APPENDIX 4B: CONSTRUCTION ASSUMPTIONS AND CALCULATIONS

Contents

Tables

Plates

None provided.

Figures

None provided.

1 Construction Assumptions and Calculations

1.1 Construction assumptions

Table 1.1: Assumed activities and noise sources for each phase

Activity	Key noise sources	Sound power level, dB, L_{WA}	On time, %
Site set up and Clearance	Lorry loader crane HIAB	104	25
	Diesel / petrol generators	97	100
	360 Wheeled / tracked excavators	107	70
	180 Backhoe loaders	107	50
	Dump trucks	106	70
	Telehandlers	107	50
	Chainsaws and Brush-cutters	115	17
	Wood chippers	121	17
	Road sweeper / gully sucker	107	50
	Vibratory tamping rollers	111	50
Earthworks	Tracked dozers	108	50
	Wheeled loading shovels	107	50
	360 Tracked excavators	110	70
	Motor graders / scrapers	108	50
	Articulated haulers/dump trucks	108	50
	Vibratory tamping rollers	111	50
	Road tipper waggons	107	50
Drainage	Lorry loader crane HIAB	104	25
	360 Tracked excavators	110	70
	180 Backhoe loaders	107	50
	Dump trucks	106	70
	Wheeled loading shovels	107	50
	Concrete mixer trucks	107	50
	Trench rammers	91	25
Pavements	Cold planer/milling machines	104	70
	Motor graders / dozers	108	50
	Wheeled loading shovels	107	50
	Dump trucks	108	50

Activity	Key noise sources	Sound power level, dB, L_{WA}	On time, %
	360 Tracked excavators	110	70
	180 Backhoe loaders	107	50
	Asphalt pavers (and tipper lorries)	109	70
	Concrete mixer trucks	107	70
	Compressors and pneumatic hand tools	118	17
	Deadweight / vibrating rollers	111	50
	Vibrating plate compactors	110	25
	Road sweeper	107	70
Kerbs, footways and paved Areas	Lorry loader crane HIAB	104	25
	Telehandlers	107	50
	Cold planer/milling machines	104	70
	Concrete mixer trucks	107	70
	Compressors and pneumatic hand tools	118	17
	Mini asphalt pavers (and tipper lorries)	109	70
	Deadweight / vibrating rollers	111	50
	Vibrating plate compactors	110	25
Bridges and Civil Structures	Lorry loader crane HIAB	104	25
	Telehandlers	107	50
	360 Tracked excavators	110	70
	Concrete mixer trucks	107	70
	Concrete pumps	108	50
	Concrete compaction plant	96	25
	Dump trucks	108	50
	Deadweight / vibrating rollers	111	50
	Compressors and pneumatic hand tools	118	17
	Mobile all terrain cranes	101	50
	Mobile elevated work platforms - vehicle mounted or self-propelled	104	25
	Pilling rigs (including equipment for closed end driven cast in-situ piling, and continuous flight augering / bored piles and driven sheet piles where required)	124	50
Road Restraints	Lorry loader crane HIAB	104	25
	Telehandler	107	50
	Concrete mixer trucks	107	70

Activity	Key noise sources	Sound power level, dB, L_{WA}	On time, %
	Mini excavator	100	50
	180 Backhoe loaders	107	50
Fencing	Lorry loader crane HIAB	104	25
	Telehandler	107	50
	180 Backhoe loaders	107	50
	Concrete mixer trucks	107	70
Traffic signs	Lorry loader crane HIAB	104	25
	Telehandler	107	50
	180 Backhoe loaders	107	50
	Mini excavator	100	50
	Mobile elevating work platforms - vehicle mounted or self-propelled	104	25
Road Lighting	Lorry loader crane HIAB	104	25
	Mini excavator	100	50
	Small crane / backhoe	104	25
	Telehandler	107	50
	Mobile elevating work platforms - vehicle mounted or self-propelled	104	25

1.2 Construction noise calculations

1.2.1 The construction of the two village bypass has been divided into two phases comprising preparatory works and main phase construction work. Each phase would contain the following activities:

- Preparatory works: site set up and clearance, including trees and hedgerows, the erection of temporary fencing on land required for construction and the creation of alternative access arrangements and rights of way, setting up of the temporary contractor compounds including security, welfare facilities, and temporary utilities; and
- Construction Works: earthworks, road construction and surfacing, construction of bridges and civil structures (including piling), utility and drainage installation, construction of pavements, kerbs, footways and paved areas, installation of permanent fencing, road signs and marking, and road lighting, permanent connections to existing road networks, and landscaping.

1.2.2 **Tables 1.2** and **1.3** show details of the calculations carried out to predict noise levels during construction for the preparation and main construction phases, respectively.

1.2.3 The predictions in **Table 1.2** show sound levels forecast to arise during the use of chainsaws/chipper and chainsaw for and during vegetation clearance and during the formation of the Temporary Contractors compound using plant such as bulldozer and roller.

1.2.4 The assessment of preparatory works includes predictions of noise from cutting and clearing of vegetation (using chainsaws and/or wood chipper) at hedges and tree lines to be removed or crossed by the road route. Such works are not expected to last 10 or more days in any 15 consecutive days or a total number of days exceeding 40 in any 6 consecutive months. The hedge/tree clearing works would generate higher levels of sound when in close proximity of receptors but are not deemed significant because of their short duration.

1.2.5 During the site clearance and set-up period, the Temporary Contractors Compound (TCC) would be constructed. The plant associated with the formation of the TCC has been modelled as centred on the compound. The perimeter of the TCC and hence construction plant would approach Benhall Stocks Cottage and The Old Police House. This closer-proximity ‘edge’ working may lead to a higher level of sound for short periods although the complement of plant working at the close range would be less than for the TCC as a whole.

1.2.6 The Construction works have considered the upper level in the range of predicted sound levels as being the representative value to assess. Generally, the upper ‘representative’ value would result from Pavement or Earthworks within a distance of 150m of the receptor.

1.2.7 The longer-term works associated directly with the construction of the road have been modelled as comprising simultaneous Earth-moving, Drainage, Pavement and Bridge building operations. These cannot all take place at the same location at the same time and the Bridge building cannot commence until earthworks have reached/passed the location for the Bridge. Accordingly, the site-attributable sound emissions have been modelled on the basis of the Earth-moving and Drainage works taking place in the final section of the road and at the west roundabout to be constructed . The Pavement works have been modelled as taking place simultaneously and at the beginning (east end) of the bypass, approximately 300m south of the Friday Street roundabout. The Bridge foundation piling works (percussive) have featured as a continuous sound source in conjunction with the other three elements. The results of sound level predictions for this simultaneous work have been reported as the values at the lower end of the range expected.

1.2.8 Over a shorter period than the 24 months expected for the entire construction programme, each receptor location would experience Pavement works sound emissions as that element passes at the closest perpendicular distance. The sound levels predicted for this closer work are reported as the upper value in the range of results and it is this upper value that has been assessed. For receptors along Friday Street and for Parkgate Farm to the west, excavations and land-forming associated with the 'basins' would potentially lead to a higher level of sound than that for Pavement works at the closest perpendicular distance from the bypass route. Where this is forecast to occur, the 'basin' works are reported as the upper level of the range, and are then assessed.

1.2.9 In **Table 1.2**, calculations are shown for each receptor during vegetation clearance and construction of the temporary constructors compound (TCC) for the preparatory works phase.

1.2.10 Calculations are shown for each receptor for three sets of activities plus the construction of two bridges during the main construction phase. These are labelled in **Table 1.3** as:

Activities	**Label**
During pavement / kerbs works	Pavement
During construction of drainage	Drain
Earthworks	Earth
During river bridge construction	River bridge

1.2.11 Predictions have been made of levels during the noisiest of these activities (pavements) both when construction works are at their closest to the boundary with the receptors and during more typical, longer term construction work. These are labelled as "closest" in **Table 1.3**.

1.2.12 The bridge referred to **Table 1.3** is that proposed to span the river.

1.2.13 Notations. 'r' is radial distance, source to receptor. A_r is attenuation for radial distance. A_g, A_a, A_{met}, A_b are attenuation for ground; air; meteorological effects and barrier, respectively.

1.2.14 The source values in **Tables 1.2** and **1.3** have been derived from activities, source levels and on times shown in **Table 1.1** above. For simplicity, these have been expressed as a single activity level at a reference distance of 40m.

Table 1.2: Construction noise calculations: Preparation phase

Calculation steps for each receptor	Activities locations		
Receptor 16 Benhallstock Cottages	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m, dB	70/74	74	70
r, typical, m	120m	140m	40m
A_r	10	11	0
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	0	0	0
Predicted $L_{Aeq,t}$	60/64	63	70
Mitigation, for example:			Short-term
· TCC perimeter hoarding			-5
$L_{Aeq,t}$			65
Receptor 32 The Old Police House	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	150m	160m	70m
A_r	11	12	5
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$			
$L_{Aeq,t}$	59/63	62	65
Receptor 15 Mollet's Farm	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	200m	250m	170m
A_r	14	16	13
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	2	3	2
$L_{Aeq,t}$	54/58	55	55
Receptor 17 Friday Street Farm	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	100m	400m	300m
A_r	8	20	18
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	1	3	3
$L_{Aeq,t}$	61/65	51	49
Receptor 33 Yew Tree Cottage	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m, dB	70/74	74	70
r, typical, m	50m	400m	300m
A_r	2	20	18
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$		3	3
$L_{Aeq,t}$	68/72	51	49
Mitigation, for example:	Short-term		
· Local shielding of chipper	-3		
Receptor 18 Friday Street, No. 51	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	150m	450m	380m
A_r	11	21	20

Calculation steps for each receptor	Activities locations		
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	1	3	3
$L_{Aeq,t}$	58/62	50	47
Receptor 19 Rosehill Cottages	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	280m	560m	500m
A_r	17	23	22
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	3	5	4
$L_{Aeq,t}$	50/54	46	44
Receptor 14 Farnham Hall Farm House	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m, dB	70/74	74	70
r, typical, m	50m	450m	400m
A_r	2	21	20
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$		3	3
$L_{Aeq,t}$	68/72	50	47
Mitigation, for example:	Short term		
· Local shielding of wood chipper	-3		
Receptor 13 Farnham Hall	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	200m	500m	>300m
A_r	14	22	
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	2	4	
$L_{Aeq,t}$	54/58	48	
Receptor 12 Pond Barn Cottages	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	80m	750m	>300m
A_r	6	25	
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	1	6	
$L_{Aeq,t}$	63/67	43	
Receptor 11 The Old Vicarage	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	150m	600m	>300m
A_r	11	24	
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	2	5	
$L_{Aeq,t}$	57/61	45	
Receptor 25 Church Cottages	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m, dB	70/74	74	70
r, typical, m	300m	600m	>300m
A_r	18	24	
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	3	5	

Calculation steps for each receptor	Activities locations		
$L_{Aeq,t}$	49/53	45	
Receptor 26 & 27 Rosemary & White House	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	400m	900m	>300m
A_r	20	27	
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	2	7	
$L_{Aeq,t}$	48/52	40	
Receptor 6 to 9, inc.g Long Row	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	120m	1000m	>300m
A_r	10	28	
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	1	7	
$L_{Aeq,t}$	59/63	39	
Receptor 5 Stratford Grange	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	120m	1200m	>300m
A_r	10	30	
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	2	9	
$L_{Aeq,t}$	58/62	35	
Receptor 3 & 4 The Stables & The Red House	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m, dB	70/74	74	70
r, typical, m	20m	1200m	
A_r	6	30	
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$		9	
$L_{Aeq,t}$	76/80	35	
Mitigation, for example:	Short term		
· Local shield to chipper	0/-3		
· Avoid use of chipper within 80m	0/-3		
Receptor 2 Parkgate Farm	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	200m	1400m	>300m
A_r	14	31	
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	2	10	
$L_{Aeq,t}$	54/58	33	
Receptor 1 Chapel Cottages	**Vegetation clearance**	**TCC**	**TCC**
Operations	Saw/chip	Centre	Edge
Source Value: $L_{Aeq,t}$ @ 40m	70/74	74	70
r, typical	250m	1400m	>300m
A_r	16	31	
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	3	10	

Calculation steps for each receptor	Activities locations		
$L_{Aeq,t}$	51/55	33	

Table 1.3: Construction noise calculations: Main construction phase

Calculation steps for each receptor	Activities locations				
Receptor 16 Benhallstock Cottages	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	450m	1200m	1200m	1100m	250m
A_r	21	30	30	29	16
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	4	9	9	8	3
$L_{Aeq,t}$	54	33	35	45	60
$L_{Aeq,t}$ Sum of 4 operations = 55dB					
Receptor 32 The Old Police House	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	450m	1200m	1200m	1100m	250m
A_r	21	30	30	29	16
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	4	9	9	8	3
$L_{Aeq,t}$	54	33	35	45	60
$L_{Aeq,t}$ Sum of 4 operations = 55dB					
Receptor 15 Mollett's Farm	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	250m	1000m	1000m	900m	200m
A_r	16	28	28	27	14
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	3	7	7	7	2
$L_{Aeq,t}$	60	37	39	48	63
$L_{Aeq,t}$ Sum of 4 operations = 60dB					
Receptor 17 & 18 Friday Street	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Basin
r, typical, m	500m	1400m	1400m	1300m	50m
A_r	22	31	31	30	2
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	4	10	10	9	

Calculation steps for each receptor	**Activities locations**				
$L_{Aeq,t}$	53	31	33	43	72
$L_{Aeq,t}$ Sum of 4 operations = 53dB					
Receptor 33 Yew tree Cottage	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	Works at Friday Street
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	600m	1400m	1400m	1300m	150m
A_r	24	31	31	30	11
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	5	10	10	9	1
$L_{Aeq,t}$	50	31	33	43	67
$L_{Aeq,t}$ Sum of 4 operations = 51dB					
Receptor 19 Rosehill Cottages	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	Works in cutting
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Basin
r, typical, m	700m	1500m	1500m	1400m	50m
A_r	25	31	31	31	2
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	6	10	10	10	
$L_{Aeq,t}$	48	31	33	41	72
$L_{Aeq,t}$ Sum of 4 operations = 49dB					
Receptor 14 Farnham Hall Farm House	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	final month	Works in cutting
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	300m	1000m	1000m	800m	100m
A_r	18	28	28	26	8
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	3	7	7	6	4
$L_{Aeq,t}$	58	37	39	50	67
$L_{Aeq,t}$ Sum of 4 operations = 59dB					
Receptor 13 Farnham Hall	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	Works in cutting
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	300m	900m	900m	700m	150m

Calculation steps for each receptor	Activities locations				
A_r	18	27	27	25	11
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	3	7	7	6	4
$L_{Aeq,t}$	58	38	40	51	64
$L_{Aeq,t}$ Sum of 4 operations = 59dB					
Receptor 12 Pond Barn Cottages	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	600m	900m	900m	600m	100m
A_r	24	27	27	24	8
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	5	7	7	5	2
$L_{Aeq,t}$	50	38	40	53	69
$L_{Aeq,t}$ Sum of 4 operations = 55dB					
Receptor 11 The Old Vicarage	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	500m	700m	700m	500m	250m
A_r	22	25	25	22	16
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	4	6	6	4	3
$L_{Aeq,t}$	53	41	43	56	60
$L_{Aeq,t}$ Sum of 4 operations = 58dB					
Receptor 25 Church Cottages	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	500m	600m	600m	450m	450m
A_r	22	24	24	21	21
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	4	5	5	4	4
$L_{Aeq,t}$	53	43	45	57	54
$L_{Aeq,t}$ Sum of 4 operations = 58dB					
Receptor 26 & 27 Rosemary & White House	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	

Calculation steps for each receptor	Activities locations				
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	800m	500m	500m	600m	500m
A_r	26	22	22	24	22
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	6	2	2	5	2
$L_{Aeq,t}$	47	48	50	53	55
$L_{Aeq,t}$ Sum of 4 operations = 56dB					
Receptor 6 to 9, inc.g Long Row	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	900m	350m	350m	500m	300m
A_r	27	19	19	22	18
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	7	1	1	4	1
$L_{Aeq,t}$	45	52	54	56	60
$L_{Aeq,t}$ Sum of 4 operations = 60dB					
Receptor 5 Stratford Grange	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	1100m	250m	250m	500m	200m
A_r	29	16	16	22	14
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	8	3	3	4	2
$L_{Aeq,t}$	42	53	55	56	63
$L_{Aeq,t}$ Sum of 4 operations = 60dB					
Receptor 3 & 4 The Stables & The Red House	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	1100m	100m	100m	450m	100m
A_r	29	8	8	21	8
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	8	1	1	4	
$L_{Aeq,t}$	42	63	65	57	71
$L_{Aeq,t}$ Sum of 4 operations = 68dB					
Mitigation					

Calculation steps for each receptor	Activities locations				
Receptor 2 Parkgate Farm	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	1300m	150m	100m	450m	150m
A_r	30	11	8	21	11
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	9	2	1	4	2
$L_{Aeq,t}$	40	59	65	57	66
$L_{Aeq,t}$ Sum of 4 operations = 66dB					
Receptor 1 Chapel Cottages	**Pavement**	**Drain**	**Earth**	**Bridge**	**Closest**
Operations modelled during:	2nd month	final month	final month	Piling	
Source Value: $L_{Aeq,t}$ @ 40m, dB	79	72	74	82	Pavement
r, typical, m	1300m	250m	250m	600m	200m
A_r	30	16	16	24	14
$A_g + A_a + A_{met}$ or $A_b + A_a + A_{met}$	9	3	3	5	2
$L_{Aeq,t}$	40	53	55	53	63
$L_{Aeq,t}$ Sum of 4 operations = 59dB					