

# **The Lake Lothing (Lowestoft) Third Crossing Order 201[\*]**

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Lake Lothing  
**THIRD  
CROSSING**

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**Document 6.3: Environmental Statement  
Volume 3 Appendices**

## **Appendix 13A**

**Baseline noise monitoring results**

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## Appendix 13A – Baseline Noise Monitoring Results

### 13.1 Equipment

- 13.1.1 The survey measurements were undertaken using a series of integrating-averaging Sound Level Meters (SLM's) conforming to Class 1 Specifications (as defined within BS EN 61672-1:2003). Details including model and serial numbers are presented in Table 13A-1.
- 13.1.2 The following set-up parameters were used on the sound level meters during all noise measurements: Time weighting = Fast; Frequency Weighting = A; Interval Duration = 1 second.

Table 13A- 1 – Equipment certificates and serial numbers

Type	Make	Model	Serial number	Certificate number	Calibration expiry
<i>Solo 1</i>					
SLM	01dB	Solo	61332	02954/1	06/02/2019
Microphone	01dB	MCE 212	57685	02954/1	06/02/2019
Pre-amplifier	01dB	Pre 21 S	14425	02954/1	06/02/2019
Calibrator	Norsonic	1251	31460	02953/2	09/12/2017
<i>Solo 2</i>					
SLM	01dB	Solo	61331	02953/3	09/12/2018
Microphone	01dB	MCE 212	92344	02953/3	09/12/2018
Pre-amplifier	01dB	Pre 21 S	14575	02953/3	09/12/2018
Calibrator	Norsonic	1251	31462	02953/1	09/12/2017

### 13.2 Calibration

- 13.2.1 The sound level meters were calibrated before and after the survey with no calibration drift observed. The sound level meter, pre-amplifier and microphone were calibrated by University of Salford, which is a UKAS Accredited laboratory, within the 24 months prior to the survey.

### 13.3 Measurement Conditions

- 13.3.1 All measurements were taken in free-field conditions approximately 1.5m above local ground level and at least 3.5m (with the exception of measurement position C, which was only 1.5m away from a facade) from any reflective surfaces.
- 13.3.2 Windshields were attached to both noise measurement equipment for all monitored locations, to reduce the effects of wind and air movement across the microphone, and to protect the microphones from damage.

### 13.4 Weather conditions

- 13.4.1 Weather observations were recorded during the measurement periods when carrying out attended surveys and were in line with BS 4142. The observed weather conditions were as follow:

- 10:30, Tuesday 27<sup>th</sup> June 2017 – Dry, no precipitation, 63% humidity, light winds with about 95% cloud cover and temperature of approximately 12°C.
- 10:00, Wednesday 28<sup>th</sup> June 2017 – No precipitation, 90% humidity, no winds with light rains and temperature of about 14°C.
- 14:30, Sunday 2<sup>nd</sup> July 2017 - Dry, no precipitation, 50% humidity, north westerly winds and temperature of approximately 8°C.
- 14:31, Tuesday 7<sup>th</sup> November 2017 – Dry, no precipitation, 0.9 avg wind speed (1.7max), 60% humidity, 40% cloud cover and temperature of approximately 11°C.

### 13.5 Results

13.5.1 Results of the noise monitoring are shown for the seven monitoring locations in the Table 13A- 2 to Table 13A- 14.

*Table 13A- 2 – Measurement Position A, weekday measurements*

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	28/06/2017	10:00 – 13:00	3 x 15mins	68.3	76.5	57.1	71.7
Evening	27/06/2017	20:19 – 20:33	1 x 15 mins	61.8	73.2	44.1	66.7
Night	28/06/2017	01:08 – 01:22	1 x 15 mins	51.5	76.9	33.8	48.7

*Table 13A- 3 – Measurement Position A, weekend measurements*

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	02/07/2017	10:30 – 13:30	3 x 15mins	67.8	88.4	55.4	70.7
Evening	02/07/2017	22:18 – 22:32	1 x 15 mins	58.4	78.5	41.2	59.9
Night	03/07/2017	01:49 – 02:03	1 x 15 mins	44.4	73.6	40.7	44.8

*Table 13A- 4 – Measurement Position B, weekday measurements*

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	27/06/2017	10:30 – 13:30	3 x 15mins	68.3	92.9	53.3	71.2
Evening	27/06/2017	20:41 – 20:55	1 x 15 mins	63.2	77.9	42.6	68.6
Night	28/06/2017	01:27 – 01:41	1 x 15 mins	44.1	74.2	34.9	44.8

*Table 13A- 5 – Measurement Position B, weekend measurements*

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	01/07/2017	11:40 – 14:40	3 x 15mins	65.6	81.8	52.8	69.5
Evening	01/07/2017	21:59 – 22:13	1 x 15 mins	59.4	80.2	43.1	62.7
Night	02/07/2017	01:32 – 01:46	1 x 15 mins	51.3	73.6	39.7	45.1

**Table 13A- 6 – Measurement Position C, weekday measurements**

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Evening	27/06/2017	19:00 – 23:00	4 hr	57.5	82.8	40.5	61.1
Night	27/06/2017	23:00 – 07:00	8 hr	55.2	78.8	39.7	52.8
Day	28/06/2017	07:00 – 19:00	12 hr	62.6	95.3	47.5	66.4
Evening	28/06/2017	19:00 – 23:00	4 hr	59.0	80.6	42.5	63.5
Night	28/06/2017	23:00 – 07:00	8 hr	53.8	82.7	36.3	51.7
Day	29/06/2017	07:00 – 19:00	12 hr	62.4	87.8	48.6	65.9
Evening	29/06/2017	19:00 – 23:00	4 hr	58.8	89.4	38.0	62.9
Night	29/06/2017	23:00 – 07:00	8 hr	53.1	78.8	31.6	51.6
Day	30/06/2017	07:00 – 19:00	12 hr	61.8	93.7	45.6	65.3
Evening	30/06/2017	19:00 – 23:00	4 hr	58.3	84.0	40.0	63.0
Night	30/06/2017	23:00 – 07:00	8 hr	53.9	80.2	35.5	54.4

**Table 13A- 7 – Measurement Position C, weekend measurements**

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	01/07/2017	07:00 – 19:00	12 hr	59.7	92.0	43.7	63.6
Evening	01/07/2017	19:00 – 23:00	4 hr	58.1	83.7	39.6	63.0
Night	01/07/2017	23:00 – 07:00	8 hr	53.3	80.0	34.6	53.4
Day	02/07/2017	07:00 – 19:00	12 hr	58.1	88.3	40.9	61.9
Evening	02/07/2017	19:00 – 23:00	4 hr	57.0	81.6	37.9	60.4
Night	02/07/2017	23:00 – 07:00	8 hr	52.1	78.7	35.5	50.2

**Table 13A- 8 – Measurement Position D, weekday measurements, Wednesday 27/06/17**

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	27/07/2017	13:00 – 16:00	3 x 15mins	65.8	89.2	51.7	70.0
Evening	27/07/2017	21:43 – 21:58	1 x 15 mins	59.7	79.1	44.9	63.6
Night	28/07/2017	02:27 – 02:42	1 x 15 mins	48.1	75.2	43.3	49.3

**Table 13A- 9 – Measurement Position D, weekend measurements**

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	02/07/2017	14:30 – 16:30	3 x 15mins	62.7	82.0	46.3	67.7
Evening	02/07/2017	21:13 – 21:28	1 x 15 mins	60.2	84.5	43.5	62.8
Night	03/07/2017	02:34 – 02:49	1 x 15 mins	49.5	73.4	35.1	49.3

*Table 13A- 10 – Measurement Position E, weekday measurements*

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	28/07/2017	10:00 – 13:00	3 x 15mins	70.4	84.7	53.6	74.7
Evening	27/07/2017	21:00 – 21:15	1 x 15 mins	65.0	90.0	47.0	69.3
Night	28/07/2017	01:46 – 02:01	1 x 15 mins	47.0	75.7	36.6	42.6

*Table 13A- 11 – Measurement Position E, weekend measurements*

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	02/07/2017	11:15 – 14:15	3 x 15mins	67.4	92.4	54.1	71.0
Evening	02/07/2017	21:37 – 21:51	1 x 15 mins	63.2	78.9	47.2	67.3
Night	03/07/2017	01:14 – 01:28	1 x 15 mins	51.7	74.0	41.6	49.5

*Table 13A- 12 – Measurement Position F, weekday measurements*

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	27/06/2017	13:30 – 16:30	3 x 15mins	70.1	91.8	60.2	73.2
Evening	27/06/2017	21:22 – 21:36	1 x 15 mins	68.9	86.6	52.0	72.4
Night	28/06/2017	02:08 – 02:22	1 x 15 mins	64.1	86.6	45.5	58.8

*Table 13A- 13 – Measurement Position F, weekend measurements*

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	02/07/2017	14:00 – 17:00	3 x 15mins	71.0	101.4	55.9	73.2
Evening	02/07/2017	20:54 – 21:08	1 x 15 mins	66.7	87.9	47.0	70.8
Night	03/07/2017	02:15 – 02:29	1 x 15 mins	58.3	79.3	38.1	54.7

*Table 13A- 14 – Measurement Position G, weekday measurements*

Period	Date	Time of measurements	Duration	Noise level (dB)			
				$L_{Aeq}$	$L_{Amax}$	$L_{A90}$	$L_{A10}$
Day	07/11/2017	14:00 – 1700	3 x 15mins	60.7	80.5	52.7	64.7