

Appendix 15.1 Baseline Noise Monitoring Details

INTRODUCTION

This section outlines the survey data that has been collected and used within the PEIR noise impact assessments for the Proposed Development. The following noise monitoring results are detailed:

- Kent Project Site noise survey data;
- HS1 Single Event Level (SEL) survey data;
- Department of Road Traffic Statistics traffic counts;
- Department for Environment, Food and Rural Affairs traffic noise data; and
- SEL Ride noise data from a noise survey of attractions at Europa Park, Germany.

Figure 15.1.1 Buro Happold noise survey monitoring locations around the London Resort site.

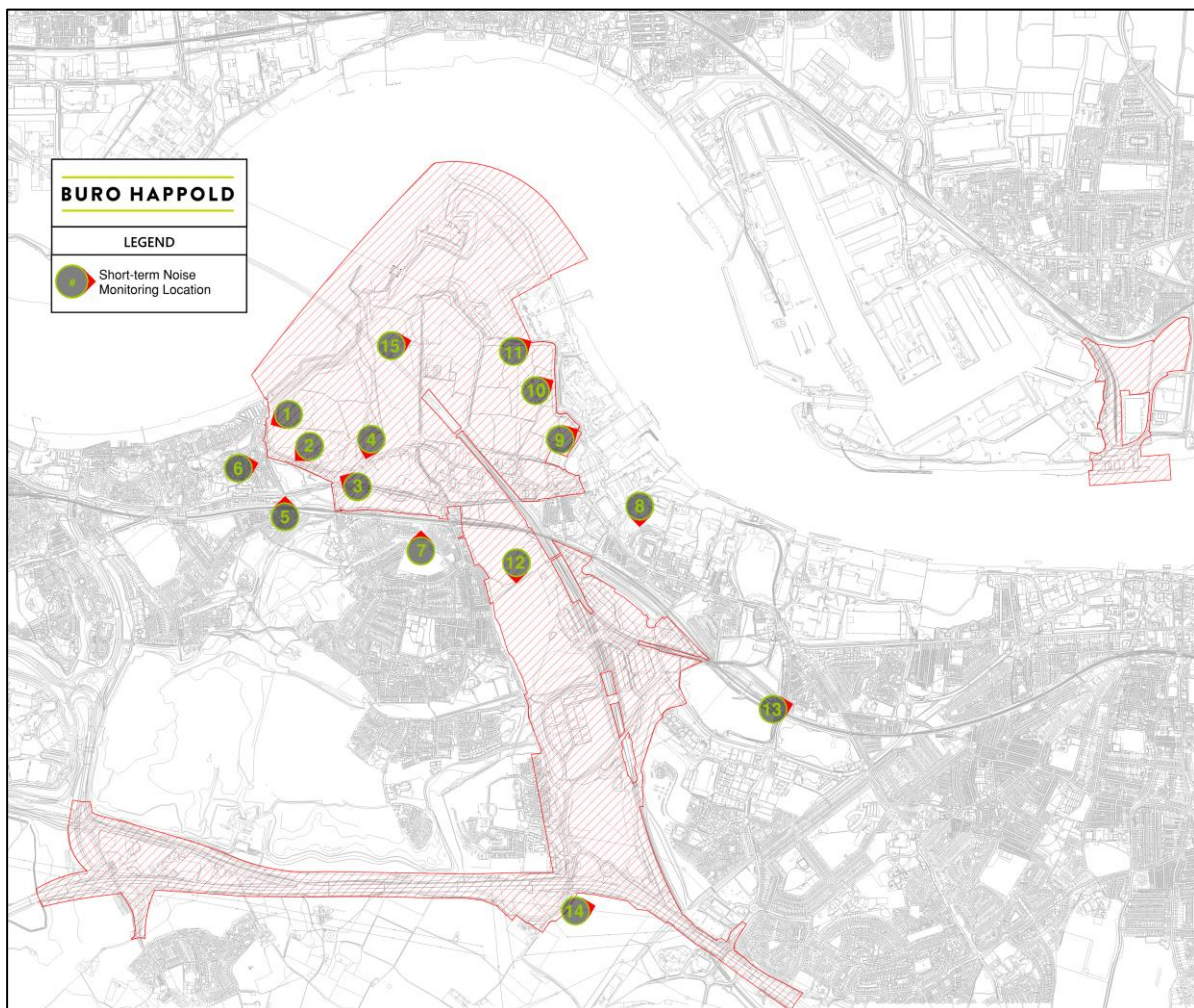


Table 15.1.1. Summary of the short-term noise level data for use within the London Resort ES.

ID	Monitoring Location	Daytime $L_{Aeq,15mins}$ dB (0700-2300 hrs)	Daytime $L_{A90,15mins}$ dB (2300-0700 hrs)
1	Stonely Crescent, Greenhithe	53	48
2	Tiltman Avenue, Greenhithe	62	49
3	Manor Way (Roundabout), Swanscombe	61	56
4	Manor Way (Whitecliff Park), Swanscombe	69	51
5	London Road (Lover's Lane), Greenhithe	78	59
6	24 Duncannon Place, Greenhithe	50	47
7	71 Pentstemon Drive, Swanscombe	53	50
8	79 Wallis Park Northfleet, Gravesend	54	51
9	Manor Way Northfleet, Gravesend	50	45
10	Manor Way Northfleet, Gravesend	50	43
11	Manor Way Northfleet, Gravesend	53	42
12	Located off the footpath adjacent to 98 Stanhope Road, Swanscombe	51	43
13	54 York Road, Gravesend	63	51
14	Farmland adjacent to the A2 motorway. Access along unpaved road off Foxhounds Lane Southfleet, Gravesend	61	59
15	London Resort Long-term noise survey	-	-

Buro Happold Noise Surveys – December 2014 to February 2020**Method**

Noise monitoring surveys were undertaken to determine the existing background noise levels surrounding the London Resort development, and to identify noise sensitive receptors (NSRs).

The short-term surveys were conducted with the microphone positioned on a tripod and located approximately 1.5m above ground level.

The measurements were conducted between 0900- and 1700-hours using Class A sound level meter, which was calibrated before and after the measurements. No significant drift was observed.

SEL measurements were taken 25m from the Ebbsfleet Station trainlines during a Buro Happold noise survey on the 5th March, 2015.

The weather conditions for both noise surveys were within the limits of the environmental noise survey standard BS 7445-1:2003 Description and measurement of environmental noise. Guide to quantities and procedures.

Detailed Survey Results

Short-Term Attended Measurements

Table 15.1.2. Summary of the short-term noise level data for use within the London Resort ES.

Position	Date and Start Time	Duration (min)	L _{Amax} (dB)	L _{Aeq} (dB)	L _{A90} (dB)	Notes
1	10/03/20 12:10:52	10	65.2	52.0	47.9	- Local road traffic and occasional bus passes from Tiltman Avenue. - London Road audible as low level background noise.
	10/03/20 14:00:29	10	73.9	52.8	48.3	
	10/03/20 15:44:43	10	69.2	54.6	47.6	
2	10/03/20 12:41:26	10	87.5	64.0	50.4	- London Road audible as background noise in this location. - Light audible construction work, data still considered representative of the residual environment with Tiltman avenue and London road traffic dominating noise measurement
	10/03/20 14:15:57	10	84.5	60.9	48.8	
	10/03/20 16:01:05	10	78.1	60.0	49.1	
3	10/03/20 13:00:34	10	76.6	61.8	55.4	- Lorry travelling along Manor Road consider to be the dominant L_{Amax} noise source. - London Road provided the background noise at this location. - Audible construction noise considered to be representative of the environment and not the dominant noise source.
	10/03/20 14:56:27	10	71.9	59.3	55.6	
	10/03/20 16:13:36	10	74.4	61.8	56.2	
4	10/03/20	10	90.2	69.5	49.8	Irregular, short and high decibel traffic noise.

Position	Date and Start Time	Duration (min)	L _{Amax} (dB)	L _{Aeq} (dB)	L _{A90} (dB)	Notes
	13:16:51					Lorries traveling at high speeds along rough Manor Way road surface.
	10/03/20 15:14:08	10	88.0	68.5	49.6	
	10/03/20 16:26:42	10	91.4	69.0	52.8	
5	10/03/20 13:35:45	10	107.7	81.9	58.9	- London road traffic noise dominating measurement - Train noise only slightly audible
	10/03/20 15:30:43	10	85.3	71.3	60.6	
	10/03/20 16:40:53	10	81.7	69.5	59.0	
6	09/12/14 14:02:15	15	71.7	48.9	46.8	- Local road traffic noise from Duncannon Place. - Lightly audible building works noise.
	09/12/14 16:35:24	15	66.3	50.6	48.4	
	09/12/14 18:23:44	15	72.0	50.1	47.4	
7	09/12/14 14:27:26	15	70.2	53.1	50.9	- Local road traffic noise from Swanscombe High Street and A226. - Audible noise from Galley Hill Industrial Estate - Railway movement noise.
	09/12/14 16:59:23	15	68.4	52.5	49.6	
	09/12/14 18:48:51	15	69.9	52.9	48.5	
8	09/12/14 14:44:11	15	68.3	54.9	52.7	

Position	Date and Start Time	Duration (min)	L _{Amax} (dB)	L _{Aeq} (dB)	L _{A90} (dB)	Notes
	09/12/14 17:23:19	15	77.3	54.6	51.4	- Local road traffic noise from Wallis Park estate and A226 and Stonebridge Road. - Noise from residents.
	09/12/14 19:19:35	15	76.1	53.6	49.4	
9	23/07/15 13:59:30	15	73.0	51.6	47.1	- Activity from Britannia Metals site audible in the distance. - Noise from idling trucks nearby. - No noticeable noise from loading or unloading vehicles.
	23/07/15 15:10:02	15	66.1	50.2	43.3	
	23/07/15 15:27:05	15	61.9	47.9	43.4	
10	23/07/15 14:19:02	15	80.6	55.3	43.4	- Noise from passing vehicles is most obvious feature in the noise climate. - HS1 train noise audible.
	23/07/15 14:47:25	15	73.8	50.9	42.5	
	23/07/15 15:46:14	15	71.2	49.4	41.6	
11	23/07/15 16:07:13	15	80.8	52.5	44.0	- Noise of loading / unloading from the nearby builders merchants is the most noticeable feature of the noise climate. - HS1 train noise audible.
	23/07/15 16:22:33	15	70.5	48.5	43.3	
	23/07/15 16:37:55	15	68.8	50.9	43.9	
12	05/03/2015 14:17:51	15	69.3	52.4	41.7	- Rail noise from Ebbsfleet station trains. - Pedestrian noise on footpath.

Position	Date and Start Time	Duration (min)	L _{Amax} (dB)	L _{Aeq} (dB)	L _{A90} (dB)	Notes
	06/03/2015 17:06:45	15	69.1	48.3	46.0	Low level road traffic noise from Stanhope Road.
13	09/12/14 14:59:48	15	94.1	66.4	54.2	- Local road traffic noise from York Road and Springhead Road. - Noise from idle cars and children playing in street.
	09/12/14 17:44:33	15	76.1	57.4	52.2	
	09/12/14 19:39:47	15	79.6	57.9	50.5	
14	05/03/2015 14:56	15	71.7	61.1	59.3	Noise dominated exclusively by A2 motorway.
	05/03/2015 15:11	15	62.9	61.7	61.1	

HS1 SEL Measurements

Figure 15.1.2 Rail SEL noise survey location, 25 meters from nearside Ebbsfleet Station Trainline.

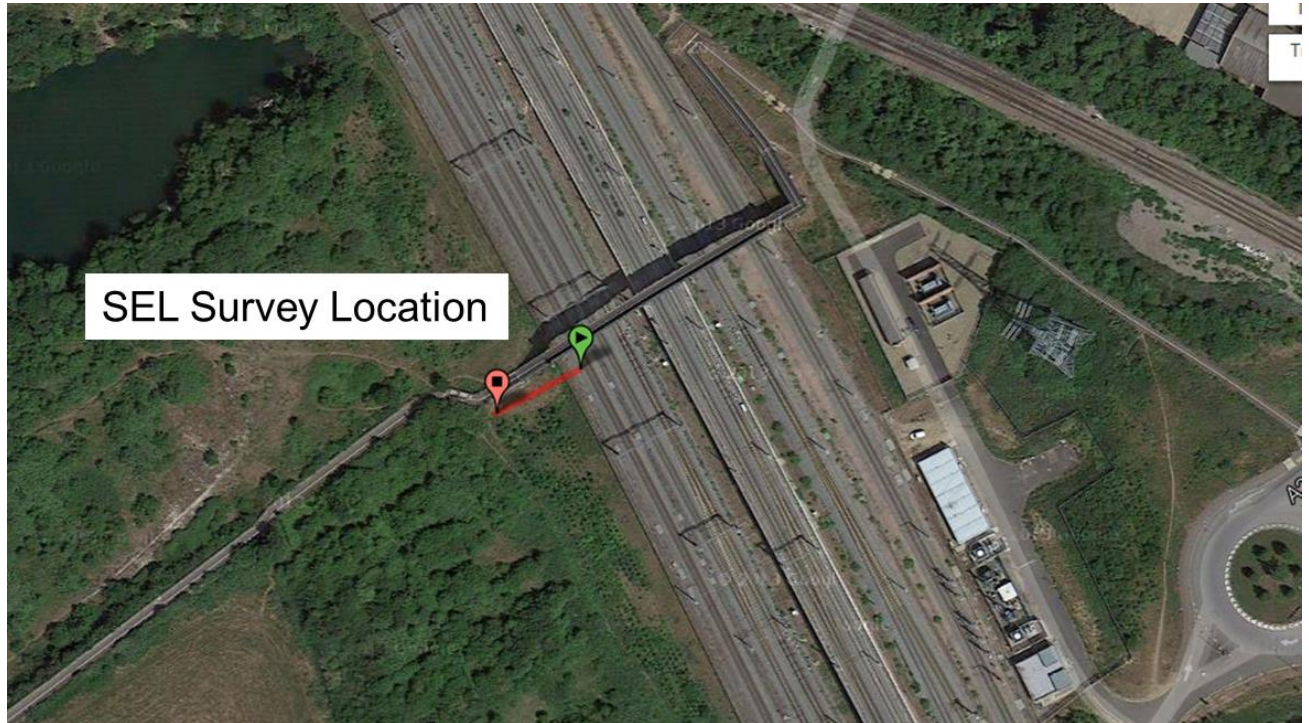


Table 15.1.3 Summary of SEL measurements taken at a monitoring location 25m from high speed international train services.

Monitoring Location	Measurement Distance from Trainline - m	SEL – dB(A)
HS1 trains stopping at Ebbsfleet International station.	25	70
		68
HS1 trains bypassing the Ebbsfleet International station stop.		79
		82

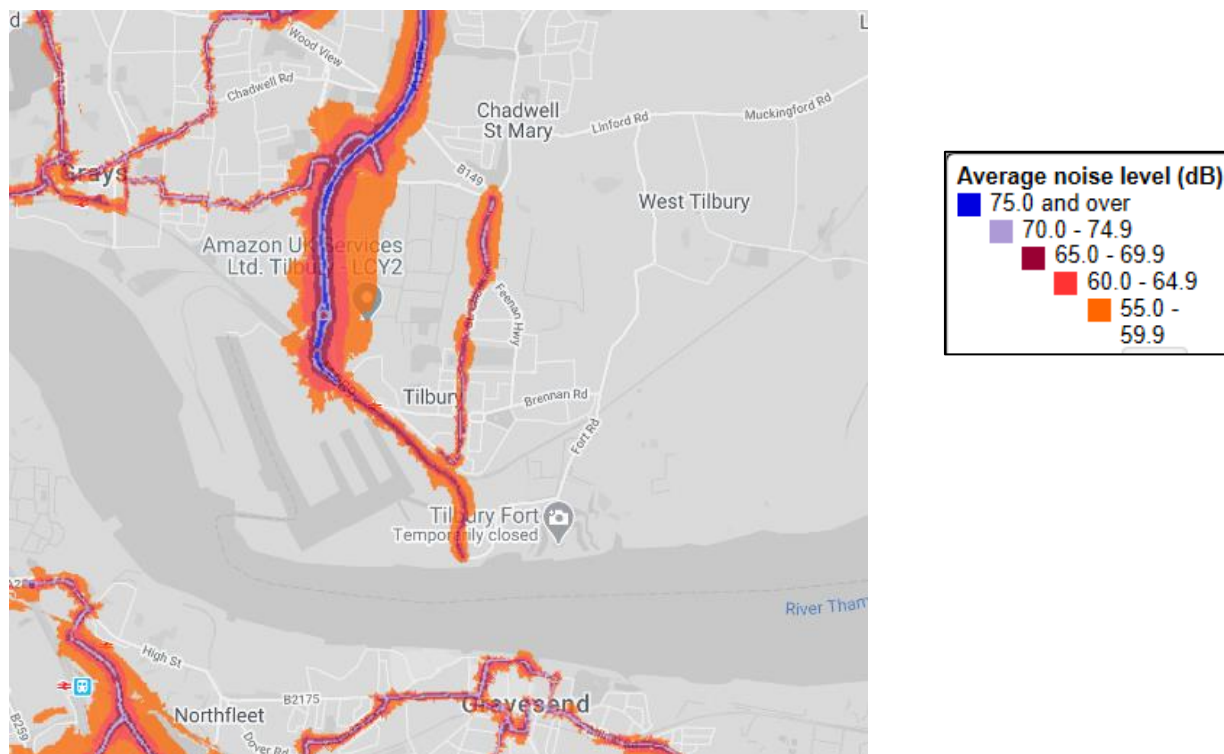
Department of Transport Road Traffic Statistics

Figure 15.1.3. 2018 average daily flow of motor vehicles (Source: Department of Transport, Road traffic statistics).



Department for Environment, Food and Rural Affairs, LAeq,16hrs Road Noise

Figure 15.1.4. 2017 $L_{Aeq,16hrs}$ Road Noise level maps (Data Source: Department for Environment, Food and Rural Affairs).



Theme Park Ride Noise Survey

As there is little published noise source data applicable to the London Paramount proposals, Buro Happold Engineering has undertaken a noise survey at an operational theme park. The purpose of the survey was to use noise data measured around key visitor attractions to construct an acoustic model for London Resort proposals.

The noise survey at Europa Park was undertaken by two Buro Happold staff on Saturday 18th and Sunday 19th October 2014.

Methodology

Noise levels were measured at the following locations:

- Location 1: Wodan – Timburcoaster (Iceland)
- Location 2: Blue Fire Megacoaster (Iceland)
- Location 3: Family Rollercoaster Pegasus (Greece)
- Location 4: Water Roller Coaster Poseidon (Greece)
- Location 5: Silver Star (France)
- Location 6: Euro-Mir (Russia)
- Location 7: Atlantica SuperSplash (Portugal)
- Location 8: Vindjammer
- Location 9: Western site boundary
- Location 10: Eastern site boundary

Figure 15.1.5. Noise Survey Locations (Source: Europa Park Website, 2014).



Results

Location 1 Ride Noise Measurements

Figure 15.1.6. Location 1 Noise monitoring positions and measurement results
(Source: Europa Park Website, 2014).



Measurement position	L _{Amax} dB(A)	SEL dB(A)
1.1	105.3	102.9
1.2	89.1	91.3
1.3	93.3	92.6
1.4	98.8	98.4
1.5	89.3	92.0
1.6	90.4	84.6

Location 2 Ride Noise Measurements

Figure 15.1.7. Location 2 Noise monitoring positions and measurement results
(Source: Europa Park Website, 2014).



Measurement position	L _{Amax} dB(A)	SEL dB(A)
2.1	83.7	88.1
2.2	84.7	86.6
2.3	88.7	90.0
2.4	99.5	96.0

Location 3 Ride Noise Measurements

Figure 15.1.8. Location 3 Noise monitoring positions and measurement results
(Source: Europa Park Website, 2014).



Measurement position	L _{Amax} dB(A)	SEL dB(A)
3.1	87.5	89.4
3.2	98.1	93.6

Location 4 Ride Noise Measurements

Figure 15.1.9. Location 4 Noise monitoring positions and measurement results
(Source: Europa Park Website, 2014).



Measurement position	L _{Amax} dB(A)	SEL dB(A)
4.1	92.0	89.6
4.2	95.4	92.5

Location 5 Ride Noise Measurements

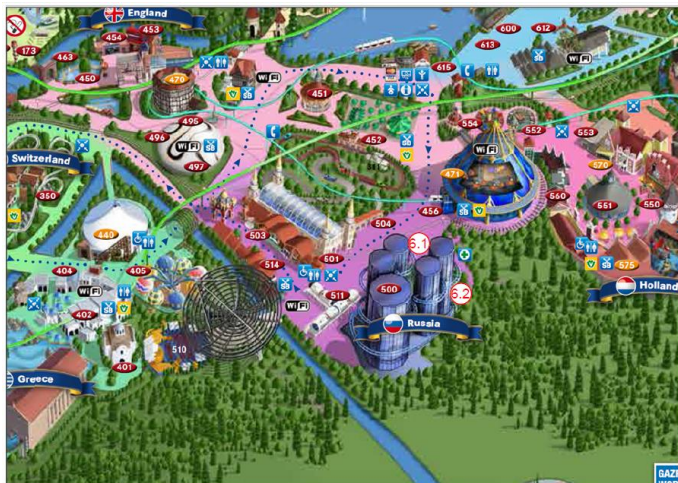
Figure 15.1.10. Location 5 Noise monitoring positions and measurement results
(Source: Europa Park Website, 2014).



Measurement position	L _{Amax} dB(A)	SEL dB(A)
5.1	92.8	92.9
5.2	79.4	85.3
5.3	79.3	81.5
5.4	91.3	92.0

Location 6 Ride Noise Measurements

Figure 15.1.11. Location 6 Noise monitoring positions and measurement results
(Source: Europa Park Website, 2014).



Measurement position	L _{Amax} dB(A)	SEL dB(A)
6.1	85.1	87.7
6.2	90.3	95.1

Location 7 Ride Noise Measurements

Figure 15.1.12. Location 7 Noise monitoring positions and measurement results
(Source: Europa Park Website, 2014).



Measurement position	L _{Amax} dB(A)	SEL dB(A)
7.1	86.7	87.2
7.2	90.5	89.7
7.3	94.5	94.3

Location 8 Ride Noise Measurements

Figure 15.1.13. Location 8 Noise measurement
(Source: Europa Park Website, 2014).

Measurement position	L _{Amax} dB(A)	SEL dB(A)
8	95.6	104.8

Location 9 Ride Noise Measurements

Figure 15.1.14. Location 9 Noise monitoring positions and measurement results
(Source: Europa Park Website, 2014).



Measurement position	L _{Amax} dB(A)	SEL dB(A)
9.1	81.9	N/A
9.2	80.8	N/A
9.3	78.1	N/A

Location 10 Ride Noise Measurements

Figure 15.1.14. Location 9 Noise measurement
(Source: Europa Park Website, 2014)

Measurement position	L _{Amax} dB(A)	SEL dB(A)
10	78.1	N/A