Greater Dublin Drainage Project Addendum

Environmental Impact Assessment Report Addendum: Volume 3A Part B of 6

Appendix A15.1 – Detailed Baseline Noise Monitoring Report

Uisce Éireann

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Appendix A15.1 Detailed Baseline Noise Monitoring Report

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1.0 Scope

This report presents the results of a baseline environmental noise survey carried out at a number of different noise monitoring locations in the vicinity of the proposed Wastewater Treatment Plant to be located in Clonshaugh, Co. Dublin and the associated Pumping Station at Abbotstown and along the Orbital Sewer and Outfall Pipeline corridor.

2.0 Regional Environmental Setting

The proposed Project is generally located along the southern fringe of Fingal in North County Dublin, between Blanchardstown and Baldoyle, and in the marine environment off North County Dublin between Baldoyle Bay and Ireland's Eye. The proposed Project is composed of a combination of the following interlinked elements:

- Regional Wastewater Treatment Plant (WwTP) to be located on a 29.8 hectare (ha) site in the townland of Clonshagh (Clonshaugh) in Fingal;
- Sludge Hub Centre (SHC) to be co-located on the same site as the Regional WwTP;
- Orbital Sewer from Blanchardstown to the WwTP at Clonshagh (Clonshaugh);
- Connecting sewer from the North Fringe Sewer (NFS) to the WwTP;
- Abbotstown Pumping Station to be located in the grounds of the National Sports Campus; and
- Outfall Pipeline from the WwTP to the outfall point approximately one kilometre north-east of Ireland's Eye.

The proposed WwTP location is situated on agricultural lands in Clonshaugh approximately 600m north of the R139 Road formerly known as the N32. The Clonshaugh Road runs in a north-south direction approximately 250m west of the proposed site and the M1 Motorway runs parallel to this road a further 600m west. The lands surrounding the site are generally used for tillage crops and vegetable production. The surrounding road network is very busy serving significant quantities of city traffic. There are no industrial units of note within a 900m radius of the sites boundary. There are a number of one-off houses located along the surrounding road network and the nearest housing estates are approximately 800m from the site boundary.

The proposed Abbotstown Pumping Station location is situated on agricultural lands in Blanchardstown approximately 500m north of the Navan Road roundabout on the M50 Motorway. Connolly Hospital is approximately 500m to the west and the M50 Motorway is less than 100m to the east. The agricultural lands contain small pockets of forestry. The nearest residential properties are between 300 and 500m to the east and south respectively and in both cases are across the Motorway and dual carriageway. Traffic on the surrounding road network is very busy.

3.0 Noise Sensitive Receptors

The noise monitoring locations were chosen in order to best represent the current noise climate at the nearest noise sensitive receptor (NSR) locations and other key NSR locations in the vicinity of the WwTP, Abbotstown Pumping Station and where key construction works are to be carried out along the Orbital Sewer and Outfall Pipeline.

Twenty noise monitoring locations (N1 to N20) were selected at various locations and these are presented graphically in Appendix 1 of this report and summarised in Table 1 below. Noise measurements were carried out at or near the boundaries of the NSRs and this noise survey is an accurate representation of the current day, evening and night-time noise levels in the vicinity of the proposed site locations.

Table 1: Noise Monitoring Locations

Monitoring Location ID	Description
N1	On Path outside of Saint Francis Hospice
N2	At rear entrance to Elmgreen Nursing Home
N3	On green outside Irish Sport Head Quarters
N4	Outside Private Residence (No 28) on Dubber Cottages Road
N5	Inside main entrance gates to St Michaels House
N6	Outside first house on RHS past Clayton Hotel roundabout
N7	Outside fourth house on RHS past Clayton Hotel roundabout
N8	Onside unoccupied farm house 300m north of WwTP site
N9	Outside private residence at end of cul-de-sac north of Balgriffin cemetery
N10	Outside West Wing of Connolly Hospital
N11	Outside Out-Patient Day Centre Building in Front of Connolly Hospital
N12	In field opposite private residence off the R106
N13	Adjacent house on junction of the R106 and Coast Road
N14	Opposite private residence at entrance to Portmarnock Golf Course
N15	On the grounds of Myra National School
N16	Outside house at junction of Old Airport road and Swords Road
N17	Adjacent to NCT centre and halting site
N18	Outside of house on R135
N19	Outside of house on Cappagh Road
N20	Path at Portmarnock Beach

4.0 Survey Protocol

4.1 Monitoring Locations

The monitoring locations were selected in accordance with the *ISO 1996 Acoustics - Description and Measurement of Environmental Noise* guidelines. Monitoring was carried out in accordance with the above- mentioned document and in all cases; the instrument was positioned in the location most sensitive to noise from the proposed site. Due care was taken to minimise potential interference from wind generated noises from trees etc during the course of the measurement programme.

4.2 Instrumentation and Methodology

Noise measurements were made according to the requirements of *ISO 1996: Acoustics - Description and Measurement of Environmental Noise* and in addition, with reference to the EPA publication; *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4), 2016.* The measurements were made using a Bruel & Kjaer (B&K) 2250 Light meter fitted with a 1:1 and 1:3 octave band filter. The instrument was calibrated *in situ* at 94 dB prior to use and the calibration was cross-checked after the measurements using a B&K acoustic calibrator. The sound level meter was orientated towards the noise source and mounted on a tripod at 1.5m above ground level. This instrument is a Type 1 instrument in accordance with IEC 651 regulations. The Time Weighting used was Fast and the Frequency Weighting was A-weighted as per IEC 651.

4.3 Glossary of Terms used

- L_{Aeq} : The equivalent steady sound level in dB containing the same acoustic energy as the actual fluctuating sound level over a given period.
- L_{A90}: the sound pressure level in dB(A) which is exceeded for 90% of the time.

- L_{A10}: the sound pressure level in dB(A) which is exceeded for 10% of the time.
- L_{ArT}: the sound pressure level in dB(A) with penalty adjustments added following the detection of tonal and/or impulsive noise.

4.4 Survey Implementation

TMS Environment Ltd personnel (Graham Adams and Nathaniel Blue) conducted the noise monitoring survey on the 7th, 8th, 21st, 22nd, 23rd, 28th, 29th and 30th of November 2022. All monitoring was carried out in accordance with the methodology set out above.

The measurement parameters included meteorological observations of prevailing conditions at the time of the survey. The main measurement parameter was the equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$. Monitoring periods for the noise survey were 15-minute intervals. A statistical analysis of the measurement results was also completed so that the percentile levels, $L_{AN,T}$, for N = 90% and 10% over 15-minute measurement intervals were also recorded. The percentile levels represent the noise level in dB(A) exceeded for N% of the measurement time.

5.0 Weather Conditions

The weather conditions were generally cloudy and cold, with a mild to light breeze blowing. There was intermittent rain during the night-time monitoring.

6.0 Survey Results

The results of the baseline environmental noise survey are presented in Tables 2 to 21 below.

Table 2 Results for Monitoring Location N1

Period	Date	Time	Measured Noise Levels / dB(A)				
			LAEq	LA90	LA10	LAMax	LArT
Daytime 07.00-19.00	07.11.2022	13:02-13:17	61	59	63	78	61
	07.11.2022	13:18-13:33	61	59	62	68	61
	07.11.2022	13:33-13:48	62	60	64	78	62
	Average		**61**	**59**	**63**	-	**61**
Evening time 19.00-23.00	22.11.2022	21:01-21:16	58	55	58	74	57
Night-time 23.00 - 07.00	30.11.2022	00:59-01:14	53	50	56	71	53
	30.11.2022	01:15-01.30	54	50	57	72	54
	Average		**54**	**50**	**57**	-	**54**

Daytime Comments: Main noise source is the continuous passing traffic on the Navan Road dual carriage-way and the M50 motorway. Some traffic passing into and out of the hospital and hospice grounds, aircraft passing overhead and birdsong also contributed to noise levels. Noise from nearby construction site was audible during runs. Maximum noise levels associated with vehicle movement through the hospital.

Evening time Comments: Main noise source is the continuous passing traffic on the Navan Road dual carriage-way and the M50 motorway. Some cars and bus passing into and out of the hospital and hospice grounds and aircraft passing overhead also contributed to noise levels. Maximum noise levels associated with vehicle movement through the hospital.

Night time Comments: Main noise source is the continuous passing traffic on the Navan Road dual carriage-way and traffic on the M50 Motorway also noticeable. Cars passing into and out of the hospital grounds also contributed to noise levels. Maximum noise levels associated with vehicle movement through the hospital.

Table 3 Results for Monitoring Location N2

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	07.11.2022	08:48-09:03	60	59	61	75	60
	08.11.2022	12:05-12:20	58	54	58	79	58
	08.11.2022	12:20-12:35	58	53	57	78	58
	Average		**59**	**55**	**59**		**59**
Evening time 19.00-23.00	22.11.2022	21:39-21:54	59	57	61	73	59
Night-time 23.00 - 07.00	29.11.2022	23.46-00.01	58	55	60	69	58
	30.11.2022	00.01-00.16	57	54	59	70	57
	Average		**58**	**55**	**60**		**58**

Daytime Comments: Main noise source is the continuous passing traffic on the M50 Motorway. Occasional car also passed by on Dunsink Lane and aircraft passing overhead also contributed to noise levels. Max noise levels associated with passing vehicles on the M50.

Evening time Comments: Main noise source is the continuous passing traffic on the M50 Motorway. Occasional car also passed by on Dunsink Lane and aircraft passing overhead also contributed to noise levels. Max noise levels associated with passing vehicles on the M50.

Night time Comments: Main noise source is the continuous passing traffic on the M50 Motorway. Occasional car also passed by on Dunsink Lane during both runs. Max noise levels associated with passing vehicles on the M50.

Table 4 Results for Monitoring Location N3

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	08.11.2022	12.55-13.10	56	52	57	68	56
	08.11.2022	13.11-13.26	55	52	56	72	55
	08.11.2022	13.26-13.41	58	53	59	78	58
	Average		**56**	**52**	**57**		**56**
Evening time 19.00-23.00	22.11.2022	20:23-20:38	63	53	67	71	63
Night-time 23.00 - 07.00	29.11.2022	23.00-23.15	47	45	48	70	47
	29.11.2022	23.15-23.30	48	47	50	68	48
	Average		**48**	**46**	**49**		**48**

Daytime Comments: Main noise source is the continuous hum of passing city traffic in the distance. Occasional traffic passing into and out of the Sports campus, passing aircraft overhead and birdsong also contributed to the noise levels. Max noise levels associated with car passing into the centre.

Evening time Comments: Main noise source is the continuous hum of passing city traffic on the M50 and N3. in the distance. Occasional traffic passing into and out of the Sports Campus. Max noise levels associated with car passing into the centre. Passing aircraft overhead was also heard.

Night time Comments: Main noise source is the continuous hum of passing city traffic in the distance.

Table 5 Results for Monitoring Location N4

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	21.11.2022	11:35-11:50	55	53	56	73	55
	21.11.2022	11:51-12:06	55	53	56	67	55
	21.11.2022	12:06-12:21	56	53	57	77	56
	Average		**55**	**53**	**56**		**55**
Evening time 19.00-23.00	22.11.2022	19:20-19:35	56	51	58	84	56
Night-time 23.00 - 07.00	29.11.2022	00.21-00.36	45	43	47	57	45
	29.11.2022	00.37-00.52	50	44	48	69	50
	Average		**48**	**44**	**48**		**48**

Daytime Comments: Main noise source is the continuous passing traffic on the M50 Motorway. Occasional passing of cars on local road, planes passing overhead and birdsong also contributed to noise levels. Max noise levels associated with passing vehicle on the local road.

Evening time Comments: Main noise source is the continuous passing traffic on the M50 Motorway. Occasional passing of cars on local road and planes passing overhead. Max noise levels associated with passing vehicle on the local road.

Night time Comments: Main noise source is the continuous passing traffic on the M50 Motorway.

Table 6 Results for Monitoring Location N5

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	07.11.2022	11:54-12:14	60	54	62	80	60
	07.11.2022	12:15-12:30	59	54	61	73	59
	07.11.2022	12:30-12:44	60	55	55	75	60
	Average		**60**	**54**	**59**		**60**
Evening time 19.00-23.00	23.11.2022	21:19-21.34	57	51	59	78	57
Night-time 23.00 - 07.00	23.11.2022	23:00-23:15	56	50	59	72	56
	23.11.2022	23:15-23:30	54	48	57	70	54
	Average		**55**	**49**	**58**		**55**

Daytime Comments: Main noise source is the continuous passing traffic on the N32. Also overhead planes passing every few minutes with the flight path situated approximately 1km to the north. Occasional car passing into and out of St Michaels House. Max noise levels associated with passing vehicle on the N32.

Evening time Comments: Main noise source is the continuous passing traffic on the N32. Also overhead planes passing occasionally with the flight path situated approximately 1km to the north. Max noise levels associated with passing vehicle on the N32.

Night time Comments: Main noise source is the passing traffic on the N32. Max noise levels associated with passing vehicle on the N32.

Table 7 Results for Monitoring Location N6

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	22.11.2022	09:54-10:09	69	60	73	84	69
	22.11.2022	10:12-10:27	69	58	73	85	69
	22.11.2022	10:28-10:43	68	58	73	87	68
	Average		**69**	**59**	**73**		**69**
Evening time 19.00-23.00	21.11.2022	21:12-21:27	66	58	69	80	66
Night-time 23.00 - 07.00	23.11.2022	23:35-23:50	61	55	65	76	61
	23.11.2022	23:50-00:05	60	55	62	76	60
	Average		**61**	**55**	**64**		**61**

Daytime Comments: Main noise source overhead planes passing every few minutes with the flight path situated approximately 600m to the north. The airplanes were on a low trajectory coming in to land or just after taking off from Dublin airport. Continuous passing traffic on the local road was also a major contributor to the noise levels. Distant traffic noise and birdsong were also audible. Max noise levels associated with passing aircraft overhead.

Evening time Comments: Main noise source is aircraft passing overhead, the passing traffic on the local road and vehicles entering and exiting the petrol station approximately 200m from monitoring location. Max noise levels associated with passing vehicle on the local road and aircraft passing overhead.

Night time Comments: Main noise source is the passing traffic on the local road and vehicles entering and exiting the petrol station approximately 200m for monitoring location. Constant background hum of traffic in the distance and occasional aircraft passing overhead is audible. Max noise levels associated with passing vehicle on the local road.

Table 8 Results for Monitoring Location N7

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	22.11.2022	10:47-11:02	71	59	76	85	71
	22.11.2022	11:03-11:18	71	58	76	86	71
	22.11.2022	11:18-11:33	71	59	75	85	71
	Average		**71**	**59**	**76**		**71**
Evening time 19.00-23.00	21.11.2022	21:31-21:46	68	55	72	83	68
Night-time 23.00 - 07.00	24.11.2022	00:09-00:24	65	54	64	83	65
	24.11.2022	00:24-00:39	63	55	63	83	63
	Average		**64**	**55**	**64**		**64**

Daytime Comments: Main noise source is the passing traffic on the local road and the overhead planes passing every few minutes. The flight path was almost directly overhead and the airplanes were on a low trajectory coming in to land or just after taking off from Dublin airport.

Evening time Comments: Main noise source is the passing traffic on the local road and overhead planes passing every few minutes. Elevated background hum associated with traffic in the distance also notable. Max noise levels associated with passing overhead airplane.

Night time Comments: Main noise source is the occasional overhead planes and passing traffic on the local road and the significant background hum of traffic audible in distance. A motor/fan running in the farm yard building was also audible.

Table 9 Results for Monitoring Location N8

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	22.11.2022	11:38-11:53	68	57	68	90	68
	22.11.2022	11:54-12:09	69	57	70	86	69
	22.11.2022	12:13-12:28	68	58	69	85	68
	Average		**68**	**57**	**69**		**68**
Evening time 19.00-23.00	22.11.2022	19:00-19:15	67	57	65	86	67
Night-time 23.00 - 07.00	24.11.2022	00:42-00:57	59	54	62	73	59
	24.11.2022	00:57-01:22	60	54	63	76	60
	Average		**60**	**54**	**63**		**60**

Daytime Comments: Main noise source is the continuous passing overhead airplanes. The flight path was directly overhead and the airplanes were on a low trajectory coming in to land or just after taking off from Dublin airport. Also, constant hum audible from traffic noise. Max noise levels associated with passing overhead airplane.

Evening time Comments: Main noise source is the passing overhead airplanes passing every few minutes. Also, constant hum audible from traffic noise. Max noise levels associated with passing overhead airplane.

Night time Comments: Main noise source is the occasional passing traffic on the local road and the significant background hum of traffic audible in distance

Table 10 Results for Monitoring Location N9

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	07.11.2022	09:28-09:43	53	49	56	66	53
	08.11.2022	11:09-11:24	59	46	57	81	59
	08.11.2022	11:24-11:39	64	48	64	82	64
	Average		**59**	**48**	**59**		**59**
Evening time 19.00-23.00	21.11.2022	20:42-20:57	64	44	63	81	64
Night-time 23.00 - 07.00	22.11.2022	23:38-23:53	61	37	61	78	61
	23.11.2022	23:53-00:08	61	41	60	77	61
	Average		**61**	**39**	**61**		**61**

Daytime Comments: Main noise source is the passing overhead airplanes. The flight path was approximately 300m to the north and the airplanes were on a low trajectory coming in to land or just after taking off from Dublin airport. Background hum of the city traffic and birdsong were also notable. Max noise levels are associated with passing overhead airplane.

Evening time Comments: Main noise source is the passing overhead airplanes. Background hum of the city traffic and birdsong were also notable. Max noise levels are associated with passing overhead airplane.

Night time Comments: Main noise source distant airplanes passing not directly overhead. Background hum of the city traffic was also notable. Max noise levels associated with passing overhead airplane.

Table 11 Results for Monitoring Location N10

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	07.11.2022	13:57-14:12	63	62	65	71	63
	07.11.2022	14:14-14:29	63	61	65	71	63
	07.11.2022	14:29-14:44	63	61	65	72	63
	Average		**63**	**61**	**65**		**63**
Evening time 19.00-23.00	22.11.2022	21:17-21:32	56	54	57	70	56
Night-time 23.00 - 07.00	30.11.2022	00:26-00:41	56	54	58	66	56
	30.11.2022	00:42-00:57	56	54	58	64	56
	Average		**56**	**54**	**58**		**56**

Daytime Comments: Main noise source is the continuous passing traffic on the Navan Road dual carriage-way and the M50 motorway. Traffic passing into and out of the hospital including some construction traffic, construction works in the distance, aircraft passing overhead and birdsong also contributed to noise levels. Maximum noise levels associated with vehicle movement through the hospital.

Evening time Comments: Main noise source is the continuous passing traffic on the Navan Road dual carriage-way and the M50 motorway. Some cars and bus passing into and out of the hospital and aircraft passing overhead also contributed to noise levels. Maximum noise levels associated with vehicle movement through the hospital.

Night time Comments: Main noise source is the continuous passing traffic on the Navan Road dual carriage-way and traffic on the M50 Motorway also noticeable. Cars passing into and out of the hospital grounds also contributed to noise levels. Maximum noise levels associated with vehicle movement through the hospital.

Table 12 Results for Monitoring Location N11

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	07.11.2022	14:48-15:03	58	57	60	66	58
	07.11.2022	15:03-15:18	59	57	61	75	59
	07.11.2022	15:18-15:33	60	58	61	76	60
	Average		**59**	**57**	**61**		**59**
Evening time 19.00-23.00	22.11.2022	20:45-21:00	56	55	57	65	56
Night-time 23.00 - 07.00	30.11.2022	01:30-01:45	54	50	56	62	54
	30.11.2022	01:45-02:00	54	50	56	63	54
	Average		**54**	**50**	**56**		**54**

Daytime Comments: Main noise source is the continuous passing traffic on the Navan Road dual carriage-way and the M50 motorway. Traffic passing into and out of the hospital including some construction traffic, construction works in the distance, aircraft passing overhead and birdsong also contributed to noise levels. Maximum noise levels associated with vehicle movement through the hospital.

Evening time Comments: Main noise source is the continuous passing traffic on the Navan Road dual carriage-way and the M50 motorway. Some cars and bus passing into and out of the hospital and aircraft passing overhead also contributed to noise levels. Maximum noise levels associated with vehicle movement through the hospital.

Night time Comments: Main noise source is the continuous passing traffic on the Navan Road dual carriage-way and traffic on the M50 Motorway also noticeable. Cars passing into and out of the hospital grounds also contributed to noise levels. Maximum noise levels associated with vehicle movement through the hospital.

Table 13 Results for Monitoring Location N12

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	07.11.2022	09:52-10:07	68	49	62	95	68
	08.11.2022	07:46-08:01	66	51	71	78	66
	08.11.2022	08:02-08:17	67	50	72	86	67
	Average		**67**	**50**	**68**		**67**
Evening time 19.00-23.00	21.11.2022	19:00-19:15	62	50	66	80	62
Night-time 23.00 - 07.00	22.11.2022	23:00-23:15	60	46	65	72	60
	22.11.2022	23:15-23:30	58	43	63	72	58
	Average		**59**	**45**	**64**		**59**

Daytime Comments: Main noise source is the constant passing traffic on the local road. Passing overhead airplanes also contribute significantly as the flight path was almost directly overhead and the airplanes were on a relatively low trajectory coming in to land or just after taking off from Dublin airport. Noise from passing train and birdsong during all three monitoring periods is notable. Max noise levels associated with passing motorcycle on local road during the first run and vehicle traffic on the other two runs.

Evening time Comments: Main noise source is the passing traffic on the local road. Passing overhead airplanes also contribute significantly. Noise from passing train and birdsong are also notable. Max noise levels associated with passing vehicle on local road.

Night time Comments: Main noise source is the occasional passing traffic on the local road. The noise from a passing train during the first monitoring period and a group of motorbikes during the second monitoring period is notable. Passing plane overhead contributed to max reading in first monitoring period and motorbikes in the second monitoring period. Main background noise is the city traffic hum in the distance.

Table 14 Results for Monitoring Location N13

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	11.07.2022	10:28-10:43	67	53	71	85	67
	11.08.2022	08:22-08:37	67	60	70	77	67
	11.08.2022	08:37-08:52	68	60	72	85	68
	Average		**67**	**58**	**71**		**67**
Evening time 19.00-23.00	21.11.2022	19:17-19:32	66	53	70	79	66
Night-time 23.00 - 07.00	23.11.2022	02:06-02:21	52	47	51	71	52
	23.11.2022	02:21-02:36	55	47	53	78	55
	Average		**54**	**47**	**52**		**54**

Daytime Comments: Main noise source is the constant passing traffic on the local road particularly at T-junction. Passing overhead airplanes also contribute as the flight path was almost directly overhead and the airplanes were on a relatively low trajectory coming in to land or just after taking off from Dublin airport. Max noise levels associated with passing vehicle on local road.

Evening time Comments: Main noise source is the constant passing traffic on the local road. Passing overhead airplanes also contribute. Max noise levels associated with passing vehicle on local road.

Night time Comments: Main noise source is the passing traffic on the local road. Main background noise is the city traffic hum in the distance overhead airplanes also contribute.

Table 15 Results for Monitoring Location N14

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	07.11.2022	10:52-11:07	48	43	48	70	48
	08.11.2022	09:33-09:48	58	43	62	78	58
	08.11.2022	09:49-10:04	52	42	52	71	52
	Average		**53**	**43**	**54**		**53**
Evening time 19.00-23.00	21.11.2022	19:52-20:07	57	43	54	78	57
Night-time 23.00 - 07.00	23.11.2022	01:30-01:45	40	34	39	71	40
	23.11.2022	01:45-02:00	39	36	40	58	39
	Average		**40**	**35**	**40**		**40**

Daytime Comments: Main noise source is the passing traffic into and out of Portmarnock Beach car park and Portmarnock Golf Club and also the passing overhead airplanes (the flight path was almost directly overhead and the airplanes were on a relatively low trajectory coming in to land or just after taking off from Dublin airport). Birdsong was also audible. Max noise levels associated with overhead passing airplane.

Evening time Comments: Main noise source is the passing overhead airplanes. Birdsong was also audible. Max noise levels associated with overhead passing airplane.

Night time Comments: Main background noise is the city traffic hum, train and dart noise in the distance. Max noise levels associated with overhead passing airplane.

Table 16 Results for Monitoring Location N15

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	08.11.2022	10:15-10:30	71	55	75	85	71
	08.11.2022	10:31-10:46	71	55	75	84	71
	08.11.2022	10:46-11:01	71	54	75	83	71
	Average		**71**	**55**	**75**		**71**
Evening time 19.00-23.00	21.11.2022	20:21-20:36	70	54	75	89	70
Night-time 23.00 - 07.00	23.11.2022	00:17-00:32	60	36	64	74	60
	23.11.2022	00:32-00:47	63	38	67	75	63
	Average		**62**	**37**	**66**		**62**

Daytime Comments: Main noise source is the constant passing traffic on Malahide Road and also the passing overhead airplanes (the flight path was almost directly overhead and the airplanes were on a relatively low trajectory coming in to land or just after taking off from Dublin airport). Birdsong and kids playing in school yard in were other sources of noise. Max noise levels associated with passing vehicle on the local road and aircraft passing overhead.

Evening time Comments: Main noise source is the constant passing traffic on Malahide Road and also the passing overhead airplanes. Max noise levels associated with passing vehicle on the local road and aircraft passing overhead.

Night time Comments: Main noise source is the passing traffic on Malahide Road. Max noise levels associated with passing traffic and aircraft passing overhead.

Table 17 Results for Monitoring Location N16

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	21.11.2022	13:28-13:43	65	62	68	76	65
	21.11.2022	13:43-13:58	66	62	68	82	66
	21.11.2022	13:59-14:14	67	62	70	81	67
	Average		**66**	**62**	**69**		**66**
Evening time 19.00-23.00	21.11.2022	21:56-22:11	64	53	60	98	64
Night-time 23.00 - 07.00	28.11.2022	23.40-23.55	64	55	66	78	64
	29.11.2022	23.56-00.11	64	52	63	79	64
	Average		**64**	**54**	**65**		**64**

Daytime Comments: Main noise source is the passing traffic at the busy junction of Old Airport Road and Swords Road and also airplanes landing and taking off at the adjacent Dublin Airport. There are a number of vehicles entering and exiting adjacent business premises. Max noise levels associated with airplanes landing.

Evening time Comments: Main noise source is the passing traffic at the busy junction of Old Airport Road and Swords Road and also airplanes landing and taking off at the adjacent Dublin Airport. There are a number of vehicles entering and exiting adjacent business premises. Max noise levels associated with airplanes landing.

Night time Comments: Main noise source is the passing traffic at the busy junction of Old Airport Road and Swords Road.

Table 18 Results for Monitoring Location N17

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	21.11.2022	12:33-12:48	67	64	68	94	67
	21.11.2022	12:48-13:03	66	65	67	70	66
	21.11.2022	13:04-13:19	66	64	67	78	66
	Average		**66**	**64**	**67**		**66**
Evening time 19.00-23.00	21.11.2022	22:19-22:34	54	52	55	66	54
Night-time 23.00 - 07.00	28.11.2022	23:00-23:15	57	55	59	67	57
	28.11.2022	23:15-23:30	57	54	59	65	57
	Average		**57**	**55**	**59**		**57**

Daytime Comments: Traffic noise from motorway dominates, also noise from vehicles entering and exiting NCT centre. Passing aircraft overhead also contributes to the noise levels.

Evening time Comments: Traffic noise from motorway dominates. Passing aircraft overhead also contributes to the noise levels.

Night time Comments: Traffic noise from motorway dominates. Passing aircraft overhead contributes to the noise levels.

Table 19 Results for Monitoring Location N18

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	08.11.2022	14:51-15:06	59	56	60	73	59
	08.11.2022	15:06-15:21	59	57	61	69	59
	08.11.2022	15:22-15:37	59	57	60	70	59
	Average		**59**	**57**	**60**		**59**
Evening time 19.00-23.00	22.11.2022	19:36-19:51	59	56	61	73	59
Night-time 23.00 - 07.00	29.11.2022	01.01-01.16	56	44	55	63	56
	29.11.2022	01.16-01.31	53	44	56	72	53
	Average		**55**	**44**	**56**		**55**

Daytime Comments: Main noise source is the passing traffic on M50 Motorway and N2 National road also the passing overhead airplanes (the flight path was almost directly overhead and the airplanes were on a relatively low trajectory coming in to land or just after taking off from Dublin airport). Noise associated the nearby Roadstone site and the nearby construction with also audible at this location. Max noise levels associated with passing traffic.

Evening time Comments: Main noise source is the passing traffic on M50 motorway and the N2 National road. Max noise levels associated with passing traffic.

Night time Comments: Main noise source is the passing traffic on M50 motorway and N2 National road. Max noise levels associated with passing traffic.

Table 20 Results for Monitoring Location N19

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	08.11.2022	13:51-14:06	61	59	62	67	61
	08.11.2022	14:07-14:22	63	59	63	80	53
	08.11.2022	14:22-14:37	61	59	62	71	61
	Average		**62**	**59**	**62**		**62**
Evening time 19.00-23.00	22.11.2022	20:01-20:16	59	55	60	78	59
Night-time 23.00 - 07.00	29.11.2022	01.42-01.57	53	46	56	68	53
	29.11.2022	01.58-02.13	49	44	53	61	49
	Average		**51**	**45**	**55**		**51**

Daytime Comments: Main noise source is traffic noise from the M50 Motorway and traffic passing on adjacent Cappoge Cottage Road. Aircraft passing overhead and birdsong also contributes to the noise levels. Max noise levels associated with passing traffic.

Evening time Comments: Main noise source is traffic noise from M50 Motorway and traffic passing on adjacent Cappoge Cottage Road. Aircraft passing overhead also contributes to the noise levels Max noise levels associated with passing traffic.

Night time Comments: Main noise source is traffic noise from M50 Motorway and traffic passing on adjacent Cappoge Cottage Road. Max noise levels associated with passing traffic.

Table 21 Results for Monitoring Location N20

Period	Date	Time	Measured Noise Levels / dB(A)				
			L_{AEq}	L_{A90}	L_{A10}	L_{AMax}	L_{ArT}
Daytime 07.00 - 19.00	07.11.2022	11:10-11:25	56	43	48	81	56
	08.11.2022	08:59-09:14	68	44	59	104	68
	08.11.2022	09:15-09:30	57	45	60	75	57
	Average		**60**	**44**	**56**		**60**
Evening time 19.00-23.00	21.11.2022	19:36-19:51	59	42	58	77	59
Night-time 23.00 - 07.00	23.11.2022	00:57-01:12	53	34	48	71	53
	23.11.2022	01:13-01:28	36	34	38	55	36
	Average		**45**	**34**	**43**		**45**

Daytime Comments: Main noise source is the passing overhead airplanes. The flight path was almost directly overhead and the airplanes were on a relatively low trajectory coming in to land or just after taking off from Dublin airport). Kids playing on the beach and the noise of the waves breaking on the sand also contributes to the noise levels. Max noise levels associated with overhead passing airplane.

Evening time Comments: Main noise source is the passing overhead airplanes. The flight path was almost directly overhead and the airplanes were on a relatively low trajectory coming in to land or just after taking off from Dublin airport). Waves crashing in on the sand close by and a dog barking also contributes to the noise levels. Max noise levels associated with a dog barking.

Night time Comments: Main noise source is the waves crashing on the beach and people on the beach walking and talking.

7.0 Evaluation of Results

7.1 Daytime Noise Survey

This survey was completed in order to assess the existing baseline noise environment in the vicinity of the proposed WwTP, Abbotstown Pumping Station and at key locations along the proposed works route. The baseline data collected can be used to identify the potential for impact that activities associated with the proposed development could have on the local noise environment.

The daytime noise measurements were carried out between the hours of 07.00 and 19.00 and ranged in value from 48dB LAeq at monitoring location N14 to 71dB LAeq at monitoring location N7 and N15. The background noise characterised by the LA90 measurements ranged from 53dB at monitoring location N14 to 71dB at monitoring location N7 and N15.

It was generally observed that the main source of noise at all noise monitoring locations was anthropogenic in nature and included passing traffic on the adjacent roads and on the nearby motorways and passing aircraft overhead that were on approach to or departing from Dublin Airport. Non-anthropogenic noise sources such as dogs barking and the breeze blowing through trees etc had only a minor impact on the noise environment at the noise monitoring locations.

7.2 Evening Time Noise Survey

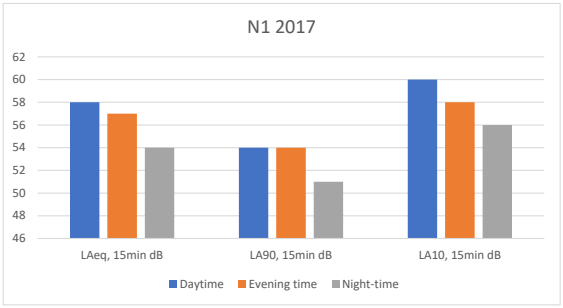
The evening time noise measurements were carried out between the hours of 19.00 and 23.00 and ranged in value from 54dB LAeq at monitoring location N17 to 70dB LAeq at monitoring location N15.

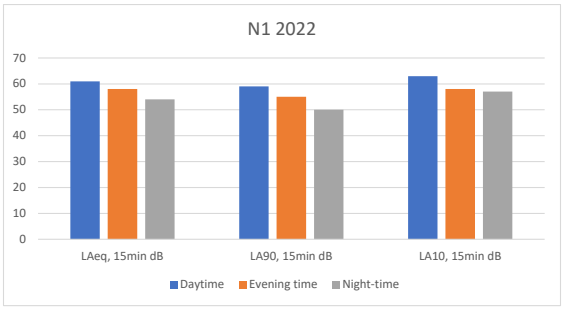
Again the main source of noise at all noise monitoring locations during the evening time period was anthropogenic in nature and included passing traffic on the adjacent roads and on the nearby motorways and passing aircraft overhead that were on approach to or departing from Dublin Airport. Non anthropogenic noise sources such as dogs barking etc had only a minor impact on the noise environment at the noise monitoring locations.

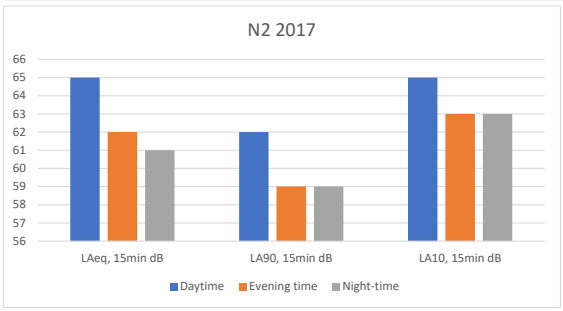
7.3 Night Time Noise Survey

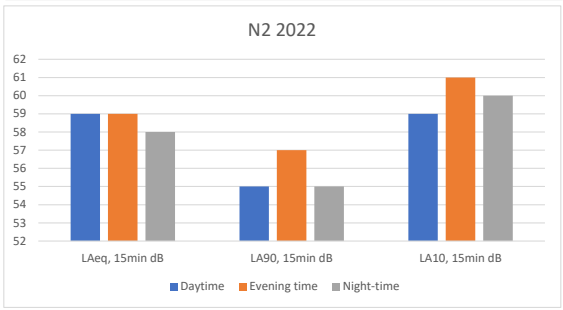
The night time noise measurements were carried out between the hours of 23.00 and 07.00 and ranged in value from 36dB LAeq at monitoring location N20 to 65dB LAeq at monitoring location N7. The background noise characterised by the LA90 measurements ranged from 40dB at monitoring location N14 to 64dB at monitoring locations N7 and N16.

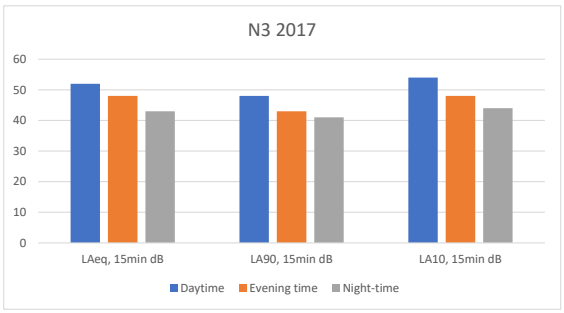
The main source of noise at all noise monitoring locations during the night time period was again anthropogenic in nature and included passing traffic on the adjacent roads and on the nearby motorways and to a lesser extent passing aircraft overhead. Non anthropogenic noise sources such as dogs barking and the breeze blowing through trees etc had only a minor impact on the noise environment at the noise monitoring locations.

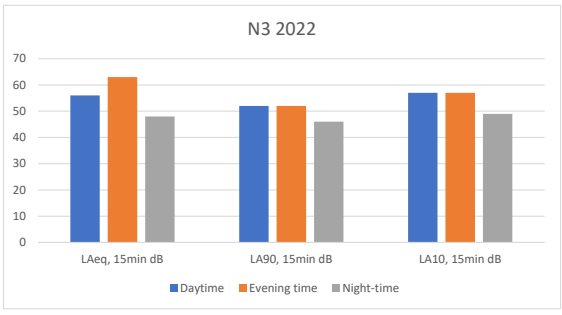

N1 2017
62
60
58
56
54
52
50
48
46
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time

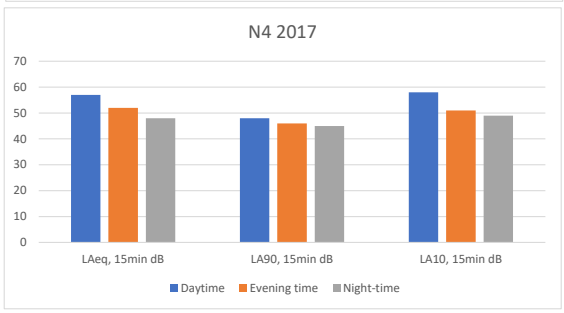

N1 2022
70
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time

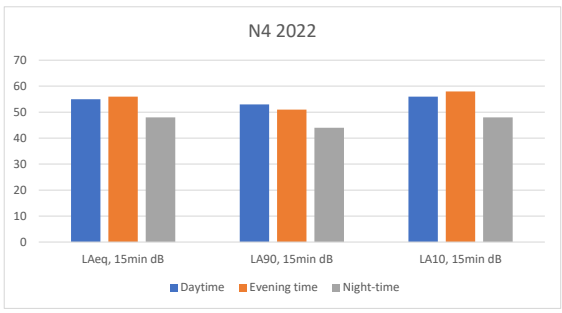

N2 2017
66
65
64
63
62
61
60
59
58
57
56
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N2 2022
62
61
60
59
58
57
56
55
54
53
52
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N3 2017
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N3 2022
70
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N4 2017
70
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N4 2022
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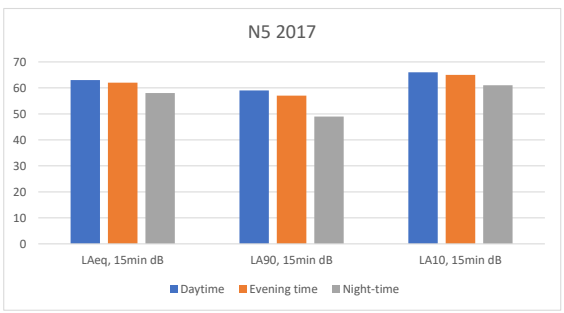
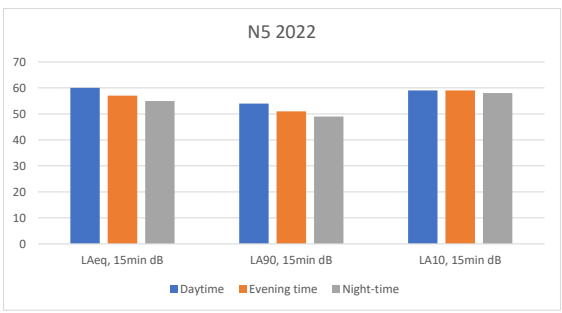
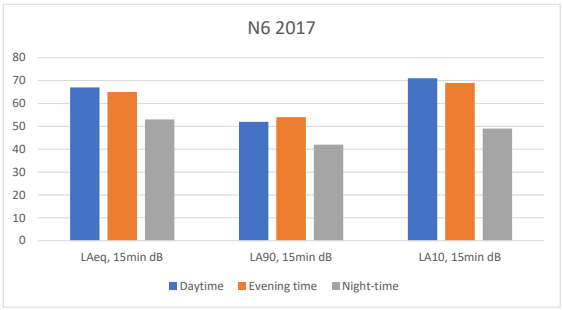
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N5 2017
70
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N5 2022
70
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time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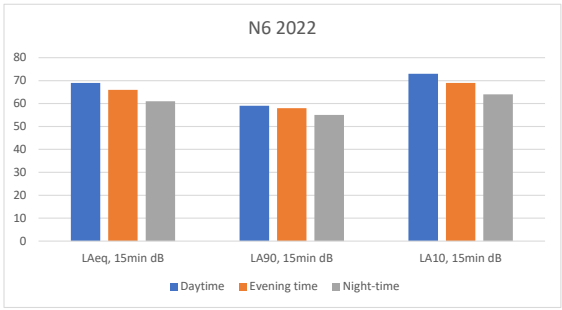
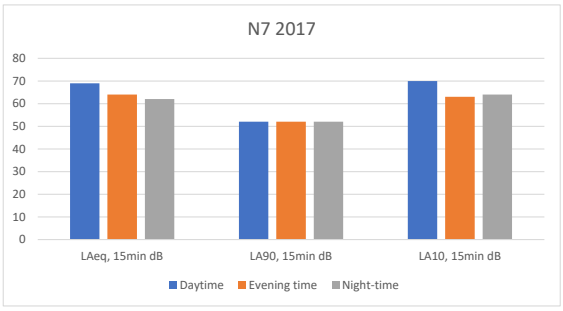
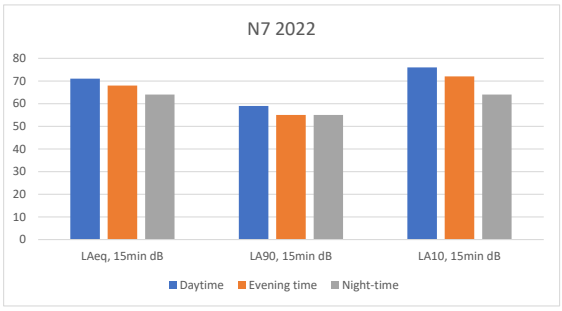
80
70
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N6 2022
80
70
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N7 2017
80
70
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N7 2022
80
70
60
50
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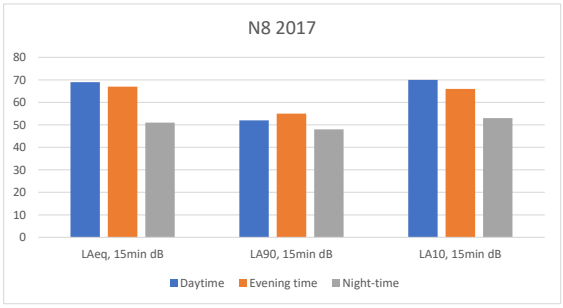
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N8 2017
80
70
60
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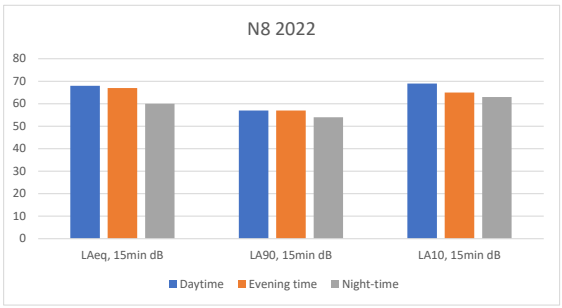
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N8 2022
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20
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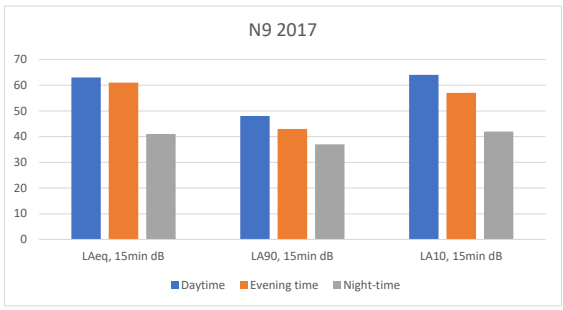
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N9 2017
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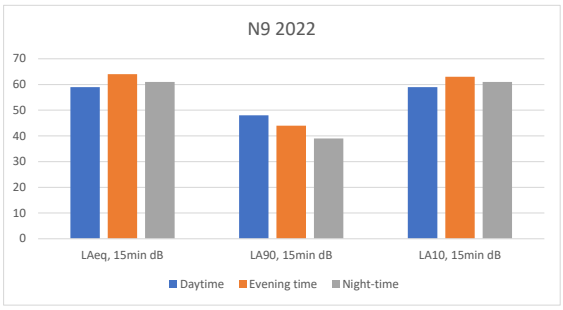
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N9 2022
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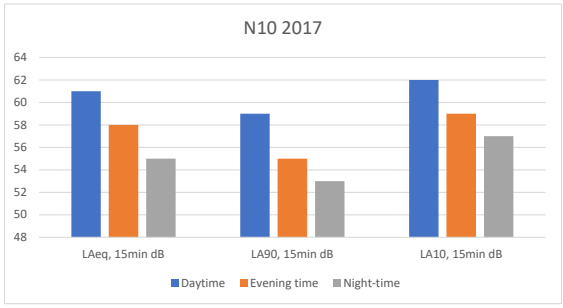
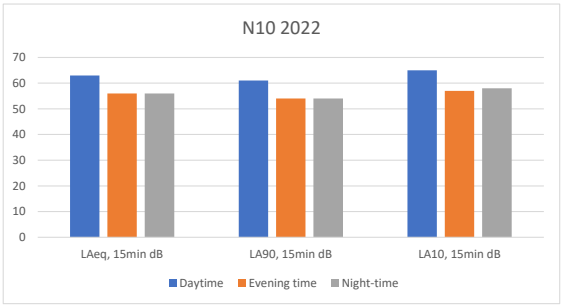
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N10 2017
64
62
60
58
56
54
52
50
48
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N10 2022
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40
30
20
10
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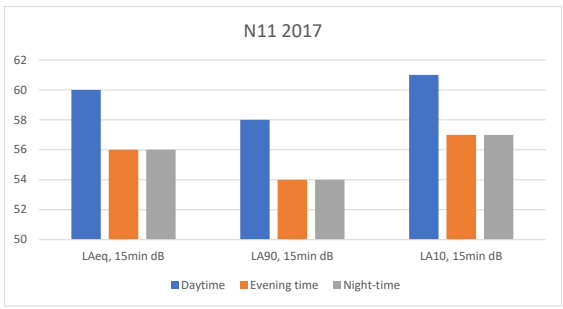
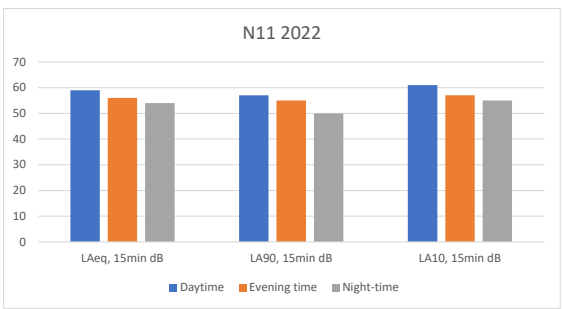
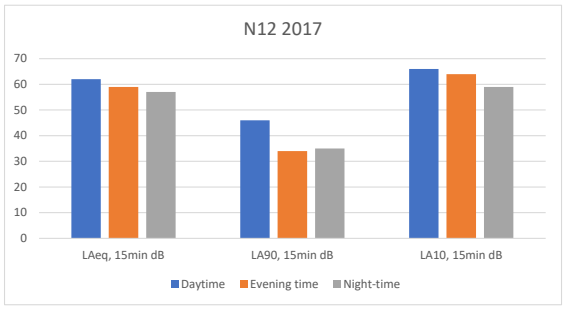
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N11 2017
62
60
58
56
54
52
50
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N11 2022
70
60
50
40
30
20
10
0
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N12 2017
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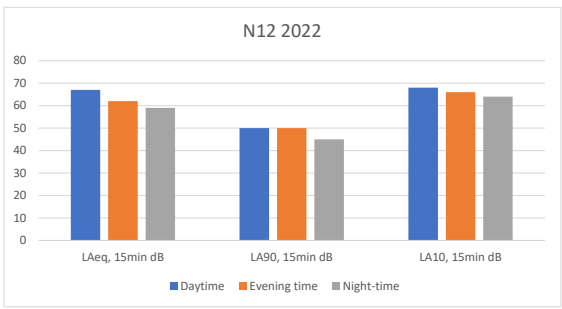
LAeq, 15min dB
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time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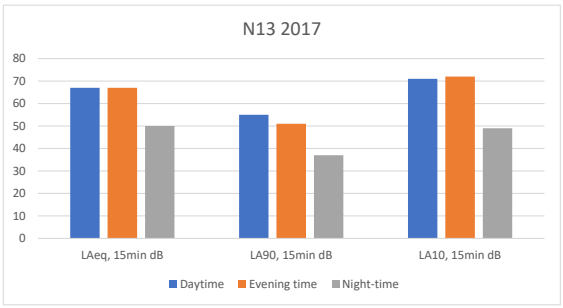
LA10, 15min dB
Daytime
Evening time
Night-time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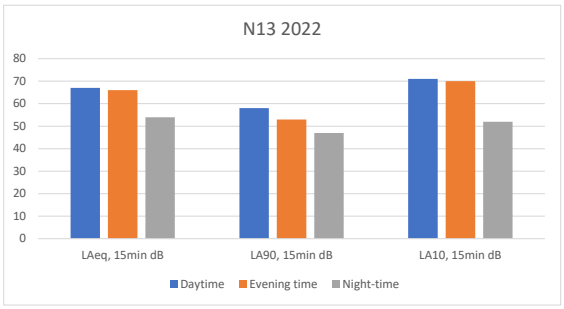
Daytime
Evening time
Night-time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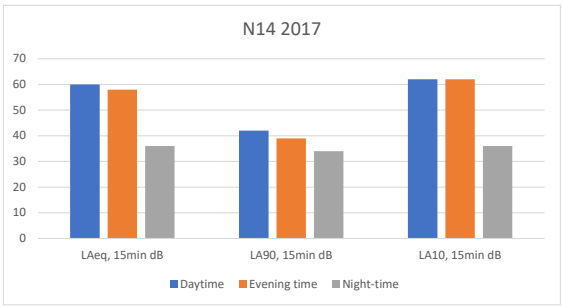
Evening time
Night-time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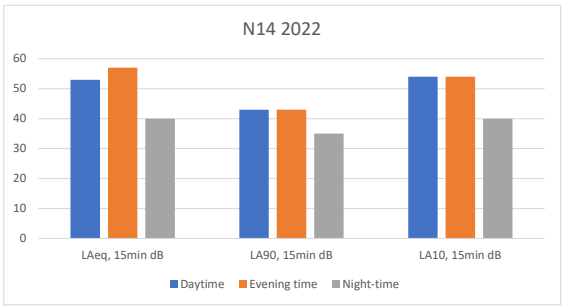
Evening time
Night-time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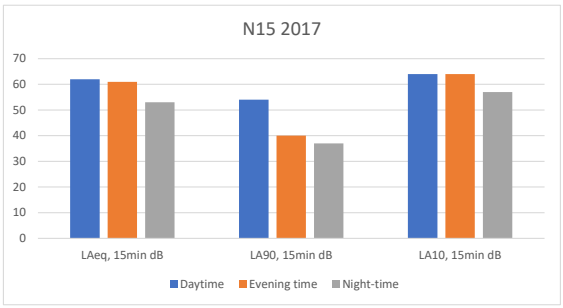
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time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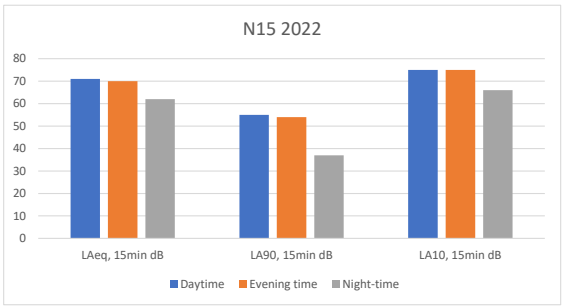
Daytime
Evening time
Night-time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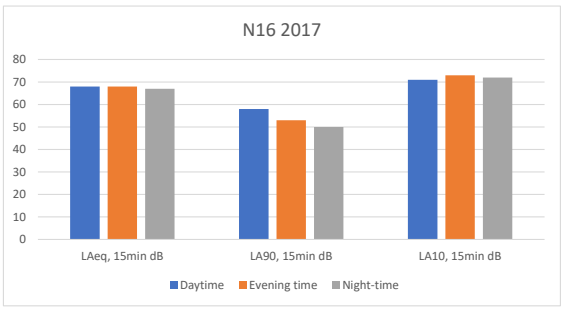
Daytime
Evening time
Night-time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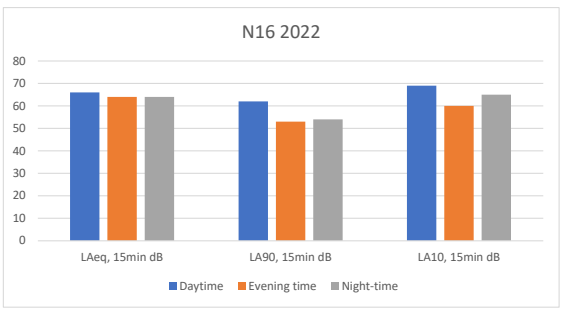
Daytime
Evening time
Night-time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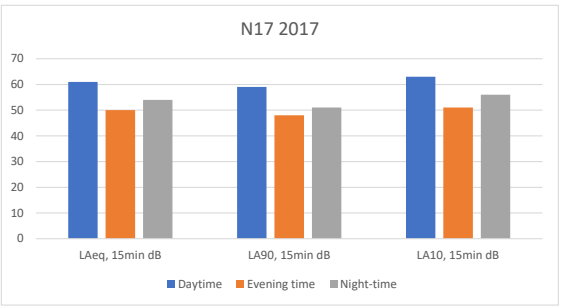
Daytime
Evening time
Night-time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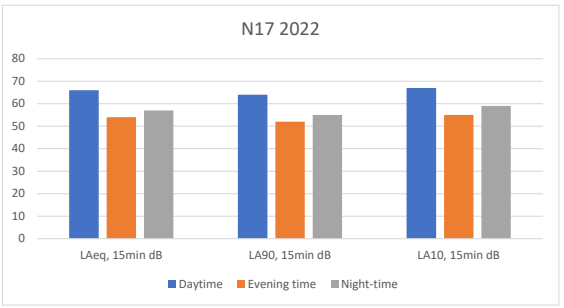
LA10, 15min dB
Daytime
Evening time
Night-time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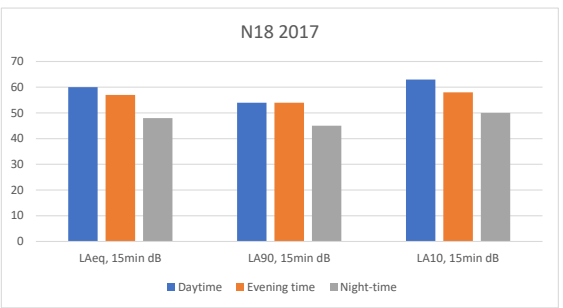
Daytime
Evening time
Night-time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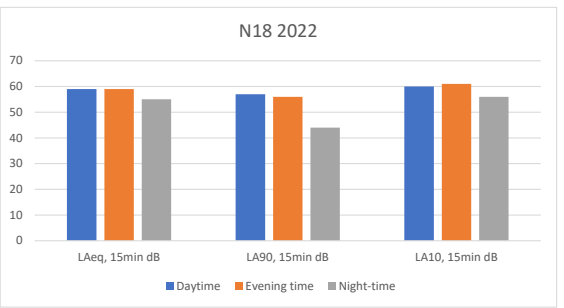
Daytime
Evening time
Night-time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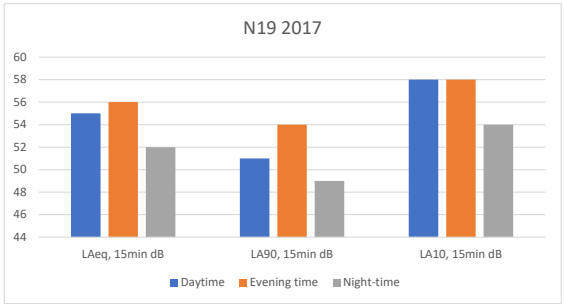
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time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60
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46
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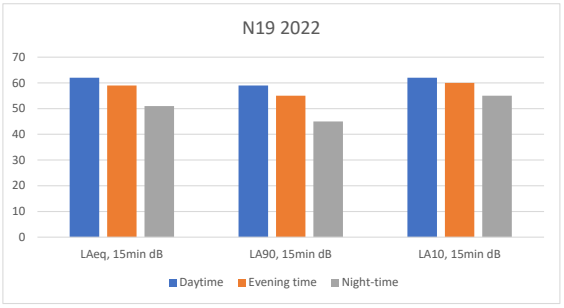
LA10, 15min dB
Daytime
Evening time
Night-time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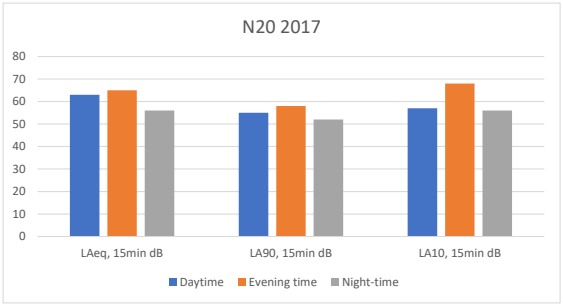
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time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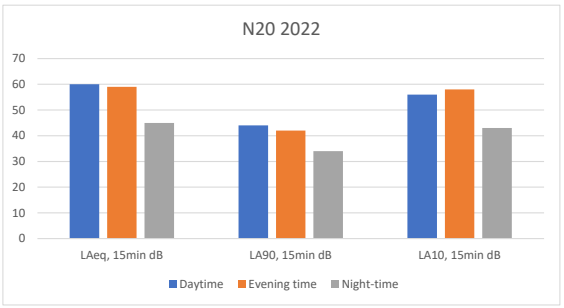
LA90, 15min dB
LA10, 15min dB
Daytime
Evening time
Night-time


N20 2022
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LAeq, 15min dB
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Daytime
Evening time
Night-time

Appendix I. Noise Monitoring Location Maps

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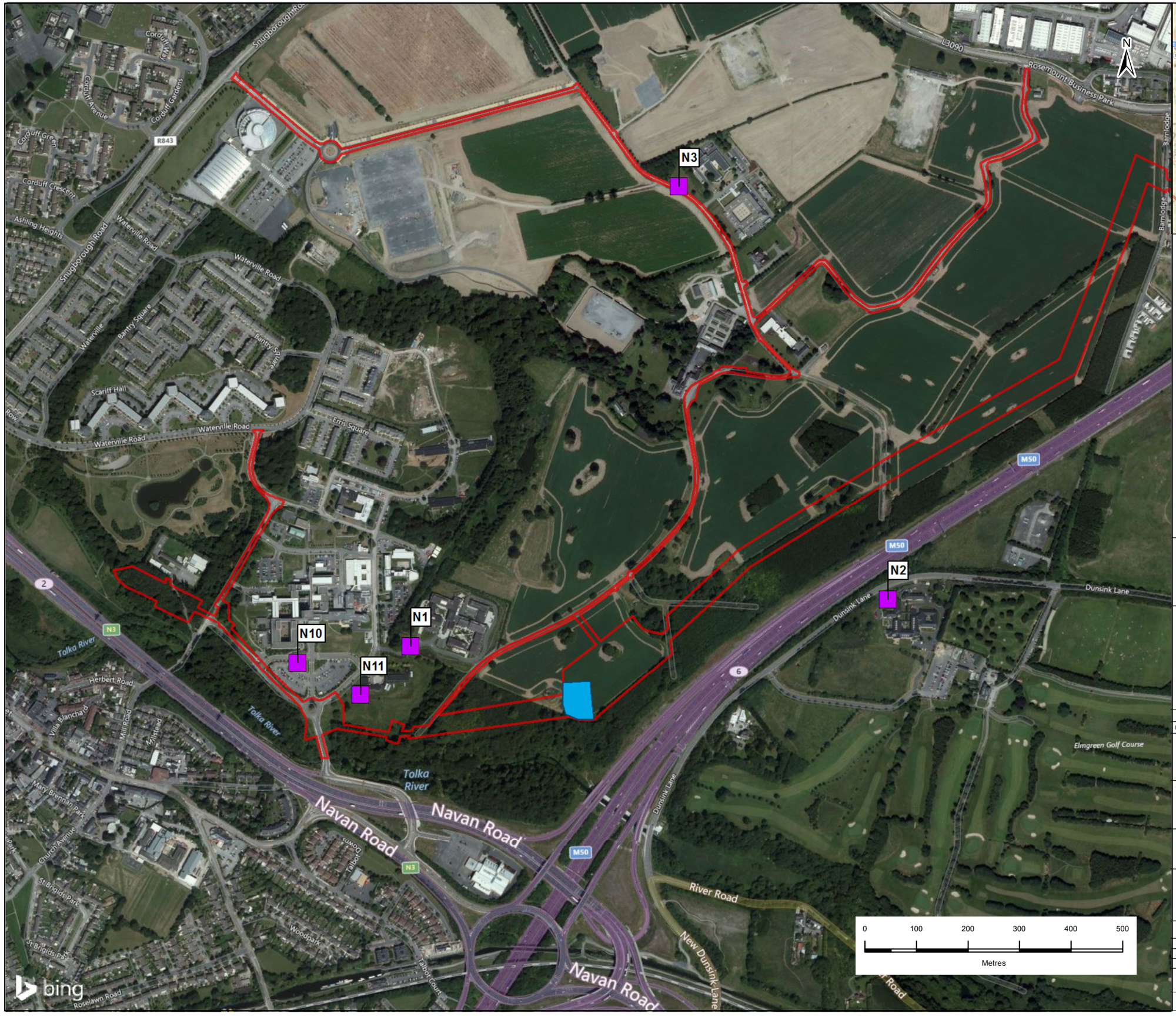

Legend

- Proposed Project Boundary
- Proposed Abbotstown Pumping Station
- Noise Monitoring Location

Service Layer- Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User

Greater Dublin Drainage

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	08/06/2018	FINAL	RG	SmG	PW	CoK

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Project

Greater Dublin Drainage Project

Drawing Title

Figure 15.1 - Noise Monitoring Locations (Sheet 1 of 5)

Drawing Status	**FINAL**
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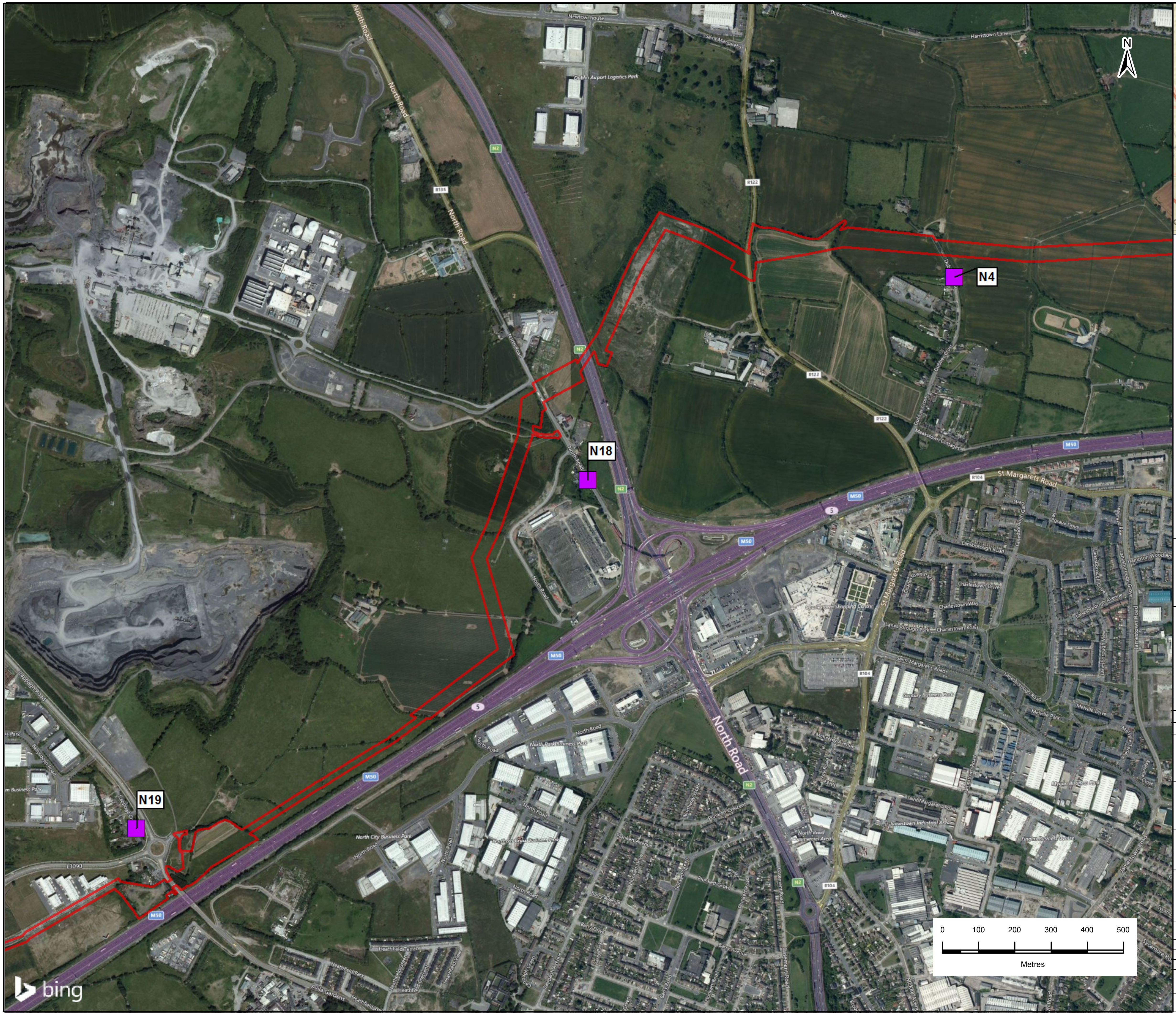
Drawing No.	32102902-EIAR-1501(1/5)



Legend

🟥 Proposed Project Boundary

🟪 Noise Monitoring Location

Service Layer- Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User

Greater Dublin Drainage

0	08/06/2018	FINAL	RG	SmG	PW	CoK
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd

JACOBS TOBIN Patrick J. Tobin & Co. Ltd.

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Greater Dublin Drainage Project

Drawing Title

Figure 15.1 - Noise Monitoring Locations (Sheet 2 of 5)

Drawing Status FINAL

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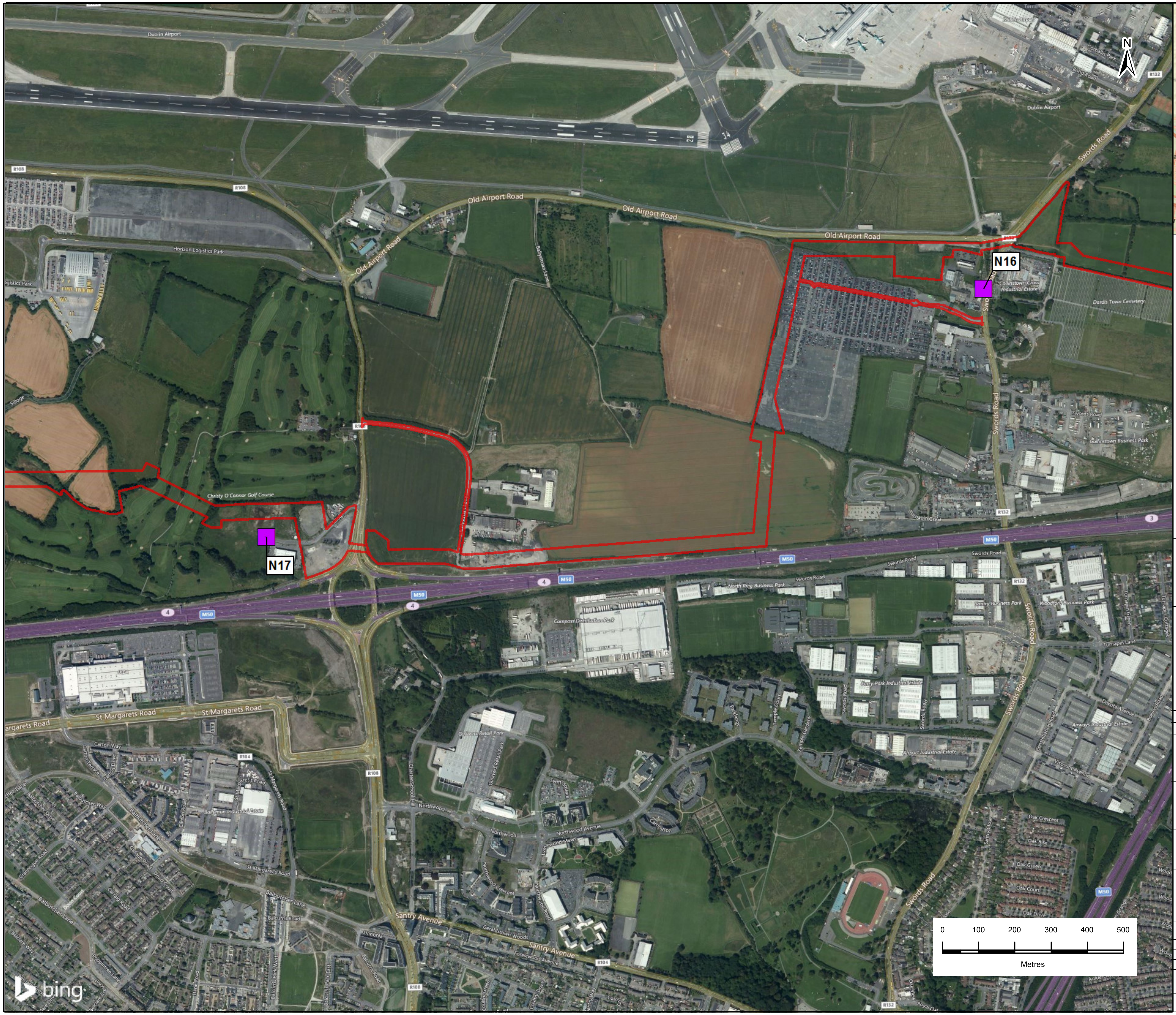
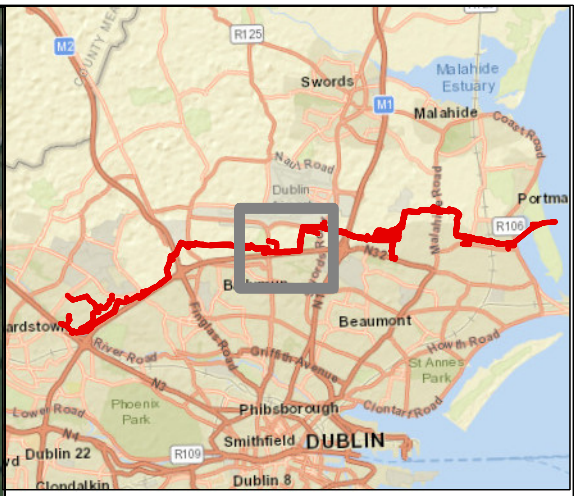
Drawing No. 32102902-EIAR-1501(2/5)





Legend

▭ Proposed Project Boundary

🟪 Noise Monitoring Location

Service Layer- Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User

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0	08/06/2018	FINAL	RG	SmG	PW	CoK
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd

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Greater Dublin Drainage Project

Drawing Title
Figure 15.1 - Noise Monitoring Locations (Sheet 3 of 5)

Drawing Status
FINAL

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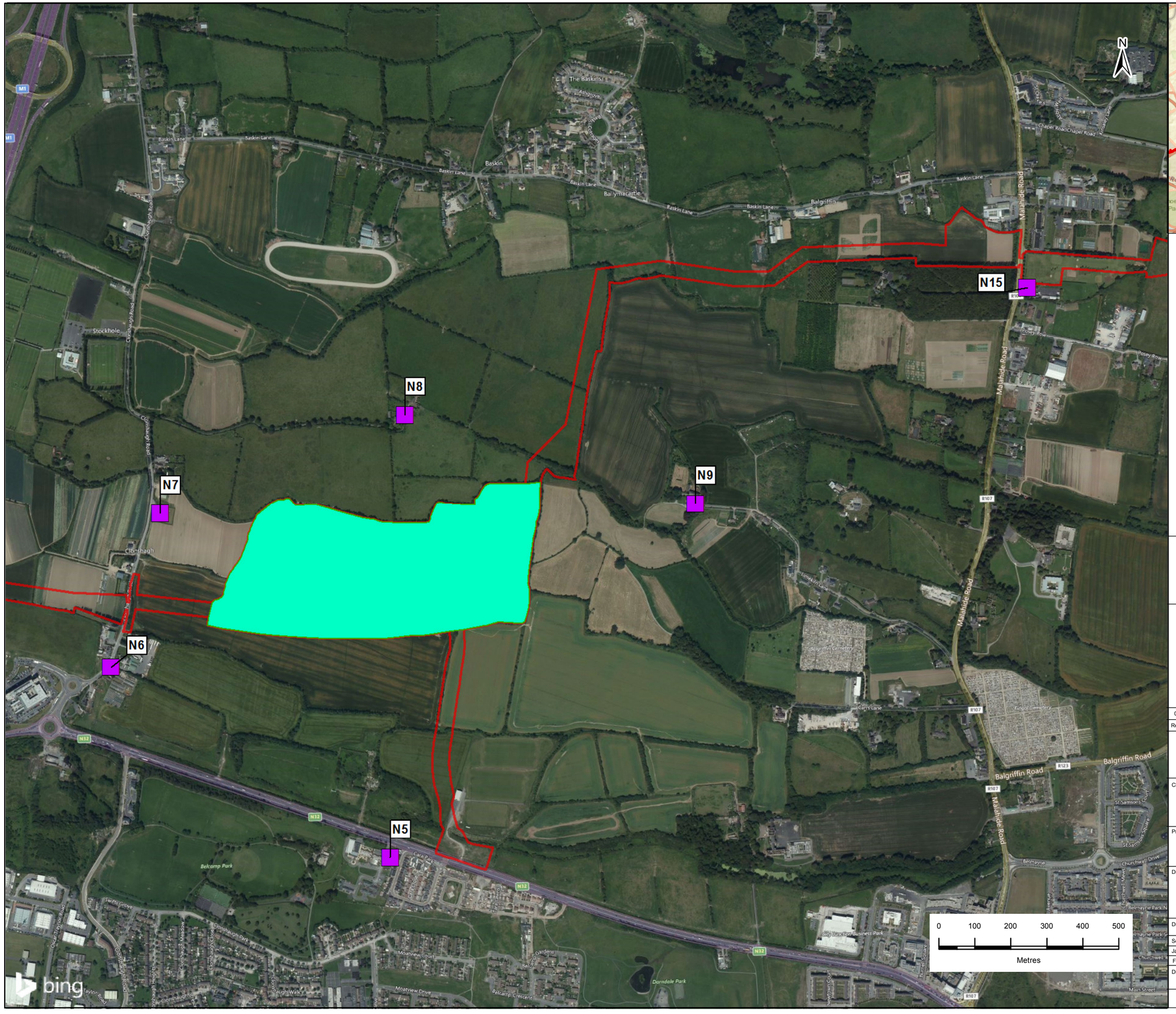
Drawing No. 32102902-EIAR-1501(3/5)



Legend

- Proposed Project Boundary
- Proposed Wastewater Treatment Plant
- Noise Monitoring Location

Service Layer- Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User

Greater Dublin Drainage

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	08/06/2018	FINAL	RG	SmG	PW	CoK

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Client: UISCE ÉIREANN / IRISH WATER

Project: Greater Dublin Drainage Project

Drawing Title: Figure 15.1 - Noise Monitoring Locations (Sheet 4 of 5)

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