

A417 Missing Link TR010056

6.4 Environmental Statement Appendix 11.2 Baseline Noise Survey Results

Planning Act 2008

APFP Regulation 5(2)(a)
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Volume 6

May 2021

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A417 Missing Link

Development Consent Order 202[x]

6.4 Environmental Statement Appendix 11.2 Baseline Noise Survey Results

Regulation Number:	5(2)(a)
Planning Inspectorate	TR010056
Scheme Reference	
Application Document Reference	6.4
Author:	A417 Missing Link

Version	Date	Status of Version
C01	May 2021	Application Submission

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1 Baseline noise survey report

1.1 Survey locations

1.1.1 The baseline noise survey locations were chosen within the noise study area at a range of distances from both the existing and proposed A417 highways and are considered to be representative of local residential properties, and other noise sensitive locations (including PRoWs). The survey locations are shown on Figure 11.1 Study area, sensitive receptors and baseline assessment noise contour map (2024) (Document Reference 6.3).

1.2 Measurement methodology

- 1.2.1 At each measurement location, the following A-weighted broadband noise measurements were taken, using a 'Fast' (0.125s) weighted time constant:
 - L_{pAeq}, L_{pA10}, L_{pA90}, L_{pAmax}.

Note: For additional information on noise measurement metrics described in the above paragraph, please refer to Noise and Vibration Appendix 11.1 (Document Reference 6.4)

- 1.2.2 The sound level meters were mounted onto tripods, with the microphones set at approximately 1.5m above local ground level. All measurements were taken under acoustically free-field conditions, except where otherwise stated. An appropriate windshield (as supplied by the manufacturer) was fitted to the microphones throughout the measurement periods, to minimise wind-induced noise.
- 1.2.3 Attended measurements were undertaken at repeated intervals during the daytime hours between 10:00hrs and 17:00hrs. Each measurement period was between 5 and 15 minutes in duration, at each location, dependent upon conditions at the measurement location. In each case, the time period was appropriate to provide a good representation of the typical noise conditions at each measurement location.

1.3 Instrumentation

1.3.1 The sound level meters and microphones used for the survey are all Class 1, conforming to BS EN 61672-1:2013. All Arup instrumentation is calibrated annually by accredited calibration laboratories and has full traceable calibration to both to both national and international standards, together with traceable records. Calibration certificates can be provided upon request. On-site calibration checks were conducted before and after each series of measurements. No significant drift in calibration level was recorded throughout each of the survey periods. The monitoring equipment used is described in Table 1.1.

 Table 1-1
 Measurement instrumentation

Date	Description	Serial Number	Item Type
03/09/2019 - 05/09/2019	Rion NA-28 SLM Kit A (AAcG)	00301365	SLM
03/09/2019 - 05/09/2019	Rion UC-59	91399	Microphones
03/09/2019 - 05/09/2019	Rion NH-23	01963	Miscellaneous
03/09/2019 - 05/09/2019	Rion NC-74	34304657	Calibrator
06/11/2019 - 07/11/2019	Norsonic 140	1403429	Sound level meter
06/11/2019 - 07/11/2019	Norsonic 1209	12625	Preamplifier
06/11/2019 - 07/11/2019	Norsonic 1225	98521	Microphone
06/11/2019 - 07/11/2019	RION NC74	35173564	Calibrator

2 Measurement results

2.1 Attended measurements

2.1.1 Survey measurement locations are shown on Figure 11.1 Study area, sensitive receptors and baseline assessment noise contour map (2024) (Document Reference 6.3).

2.2 Baseline noise monitoring location S1

Location description:

The Golden Heart Inn (near to A417 Cowley Junction)

Measurement duration:

Tue 03/09/2019 10:09 to

Tue 03/09/2019 12:24

Weather conditions:

Wind direction: North Summary: Breeze with occasional gusts.

Personnel: Henry Cook

Environment and observations: A417 dominant. Continuous traffic.



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Table 2-1 Measured sound pressure levels at S1

Date	Time [h	h:mm:ss]	Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀ L _{eq} L ₁₀ L _{max}				
03/09/2019	10:09	00:15:00	64.6	72.1	75.0	84.6	No comments
03/09/2019	11:09	00:15:00	63.3	70.6	73.5	82.1	No comments
03/09/2019	12:09	00:15:00	63.8	71.1	73.8	83.2	No comments

Baseline noise monitoring location S2 2.3

Location description:

Cowley Village

Measurement duration:

Wed 06/11/2019 12:49

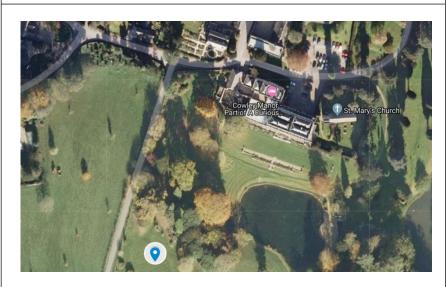
Wed 06/11/2019 15:31

Weather conditions:

Wind direction: East Summary: Light breeze, 1.5m/s average wind speed. Light rain.

Personnel: Laura McLeod and Holly Cowperthwaite

Environment and observations: A417 audible, generally dominant. Occasional noise from aircraft and activity from shooting ground.



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Table 2-2 Measured sound pressure levels at S2

Date	Time	[hh:mm:ss]	Sound	•	re level, α μΡα)	Comments	
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
06/11/2019	12:49	00:05:00	41.2	44.9	44.8	61.7	A417 dominant. Occasional
06/11/2019	12:54	00:05:00	44.1	56.8	56.5	74.5	activity from shooting ground. Occasional aircraft. Light
06/11/2019	12:59	00:05:00	41.3	44.7	46.7	61.8	breeze with 1.5m/s average wind speed.
06/11/2019	14:07	00:05:00	41.4	54.6	58.3	70.4	Light drizzle. Road traffic
06/11/2019	14:12	00:05:00	42.2	50.6	55.1	64.8	noise still dominant. Wind approximately 1m/s.
06/11/2019	14:17	00:05:00	42.8	49.8	53.7	64.4	Occasional aircraft and activity from shooting ground.
06/11/2019	15:16	00:05:00	41.5	43.5	48.2	60.5	Light easterly wind, gusts up to 1.5m/s. Road traffic noise still dominant. Distant siren.
06/11/2019	15:21	00:05:00	41.3	50.4	45.4	52.2	
06/11/2019	15:26	00:05:00	42.5	53.1	52.4	69.5	

2.4 Baseline noise monitoring location S3

Location description:

North Birdlip - gated access driveway, just off the B407, north of Birdlip

Measurement duration:

Tue 03/09/2019 10:40 to

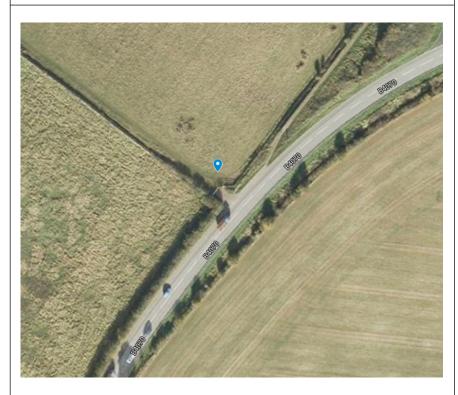
Tue 03/09/2019 12:55

Weather conditions:

Wind direction: North Summary: Very little wind, occasional breeze.

Personnel: Henry Cook

Environment and observations: Facing further section of A417 to NW. Occasional traffic on B4070.



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Table 2-3 Measured sound pressure levels at S3

Date	Time [hh:mm:ss]	Soun	d pres	sure leve	I, dB(A)	Comments
				(re	20 μPa)		
	Start	Duration	L ₉₀	L _{eq}	L ₁₀		
03/09/2019	10:40	00:15:00	42.9	53.6	58.1	71.0	No comments
03/09/2019	11:40	00:15:00	41.9	55.1	59.1	73.6	No comments
03/09/2019	12:40	00:15:00	42.3	54.5	59.2	69.6	No comments

2.5 Baseline noise monitoring location S4

Location description:Barrow Wake Car Park

Measurement duration:

Tue 03/09/2019 14:13 to

Tue 03/09/2019 14:28

Weather conditions:

Wind direction:

Summary: Fairly strong wind periodically.

Personnel: Henry Cook

Environment and observations: A417 very clearly audible, both nearby (SE) and from the further section of road to the W. Various cars entering and leaving the car park, driving over a cattle grid.



Table 2-4 Measured sound pressure levels at S4

Date	Time	[hh:mm:ss]	Soun	•	sure leve 20 μPa)	Comments	
	Start	Duration	L ₉₀	L _{eq}	L ₁₀		
03/09/2019	14:13	00:15:00	57.0	59.5	61.5	68.5	No comments

2.6 Baseline noise monitoring location S5

Location description: Near Crickly Hill Car Park

top of the hill

Measurement duration:

Tue 03/09/2019 14:43

Tue 03/09/2019 14:53

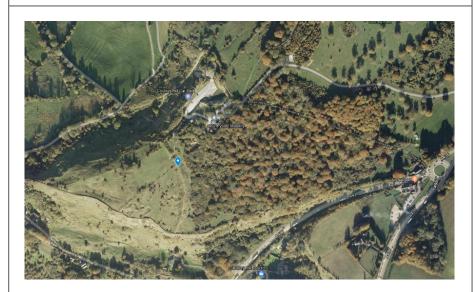
Weather conditions:

Wind direction: North Summary: Fairly strong

wind.

Personnel: Henry Cook

Environment and observations: Noise climate dominated by A417.



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Measurements were aborted at this location due to wind conditions.

Baseline noise monitoring location S6 2.7

Location description:

Crickley Hill Country Park

Measurement duration: Thurs 07/11/2019 10:27 to

Thurs 07/11/2019 13:30

Weather conditions:

Wind direction: East Very light wind at 1m/s with occasional gusts of up to 3.8m/s

Personnel: Laura McLeod and Holly Cowperthwaite

Environment and observations:

A417 dominant. Occasional aircraft and pedestrians passing.



Table 2-5 Measured noise levels at S6

Date	Time [hh:mm:ss]	Sound pressure level, dB(A) (re 20 μPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
07/11/2019	10:27	00:05:00	46.6	47.8	48.9	51.4	
07/11/2019	10:32	00:05:00	47.3	48.8	50.2	56.9	A 447 dominant naise
07/11/2019	10:37	00:05:00	47.4	49.2	50.6	54.3	A417 dominant noise source. Aircraft passbys.
07/11/2019	10:42	00:05:00	47.9	53.1	53.8	67.3	Helicopter noise at 11.01,
07/11/2019	10:47	00:05:00	47.8	49.1	50.2	52.0	activity from shooting
07/11/2019	10:52	00:05:00	46.4	47.8	49.0	51.7	ground at 11.30. Pedestrians passing at
07/11/2019	10:58	00:05:00	46.7	49.5	51.2	62.9	12.49, 12.51 and 13.27.
07/11/2019	11:03	00:05:00	44.7	49.0	51.8	61.1	
07/11/2019	11:08	00:05:00	45.3	46.8	47.9	52.6	
07/11/2019	11:13	00:05:00	46.5	48.0	49.3	53.7	
07/11/2019	11:18	00:05:00	45.9	47.3	48.5	52.9	
07/11/2019	11:23	00:05:00	45.7	47.7	49.1	52.9	
07/11/2019	11:28	00:05:00	45.7	47.5	48.8	56.3	
07/11/2019	11:33	00:05:00	45.9	47.6	48.9	54.6	
07/11/2019	11:38	00:05:00	45.4	46.9	48.2	50.8	
07/11/2019	11:43	00:05:00	46.2	48.0	49.5	51.9	
07/11/2019	11:48	00:05:00	45.7	47.4	48.8	53.8	
07/11/2019	11:53	00:05:00	46.2	48.6	50.3	63.0	
07/11/2019	11:58	00:05:00	45.5	46.7	47.8	50.5	
07/11/2019	12:03	00:05:00	44.5	46.7	48.2	53.6	

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
07/11/2019	12:08	00:05:00	46.2	48.0	49.4	56.0	
07/11/2019	12:14	00:05:00	46.0	47.9	49.4	57.6	
07/11/2019	12:19	00:05:00	45.7	47.0	48.2	50.8	
07/11/2019	12:24	00:05:00	45.5	47.9	49.4	58.9	
07/11/2019	12:29	00:05:00	46.2	47.8	49.1	54.1	
07/11/2019	12:34	00:05:00	46.7	48.2	49.5	56.2	
07/11/2019	12:39	00:05:00	46.4	47.8	49.1	51.7	
07/11/2019	12:44	00:05:00	46.2	47.9	49.2	53.0	
07/11/2019	12:49	00:05:00	46.2	48.6	49.7	72.4	
07/11/2019	12:54	00:05:00	46.5	48.5	50.1	55.0	
07/11/2019	12:59	00:05:00	46.7	48.5	50.0	54.1	
07/11/2019	13:04	00:05:00	46.3	48.5	50.0	60.7	
07/11/2019	13:09	00:05:00	46.5	49.3	51.5	61.8	
07/11/2019	13:14	00:05:00	45.7	47.3	48.7	52.2	
07/11/2019	13:19	00:05:00	46.3	48.2	49.5	51.6	
07/11/2019	13:25	00:05:00	46.4	48.2	49.6	52.7	

2.8 Baseline noise monitoring location S7

Location description: Entrance of Rushwood Kennels & Cattery

Measurement duration: Tue 04/09/2019 10:17 to

Tue 04/09/2019 12:47

Weather conditions: Wind direction: Variable Summary: Light breeze.

Personnel: Henry Cook

Environment and observations: Leaves rustling, birds, A417 clearly audible in background. 30 vehicles passed by between 10:01 and end of measurement.



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Table 2-6 Measured sound pressure levels at S7

Date	Time	[hh:mm:ss]	Sour		sure leve 20 μPa)	I, dB(A)	Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
04/09/2019	10:17	00:15:00	48.9	51.5	53.2	69.5	No comments
04/09/2019	10:32	00:15:00	48.1	50.7	52.3	64.0	No comments
04/09/2019	10:47	00:15:00	47.5	50.9	52.6	68.3	No comments
04/09/2019	11:02	00:15:00	47.7	50.4	52.5	59.8	No comments
04/09/2019	11:17	00:15:00	47.8	50.2	51.7	61.9	No comments
04/09/2019	11:32	00:15:00	48.2	51.0	52.0	68.2	No comments
04/09/2019	11:47	00:15:00	47.1	50.9	51.6	68.5	No comments
04/09/2019	12:02	00:15:00	47.6	50.6	52.5	62.6	No comments
04/09/2019	12:17	00:15:00	48.0	50.7	52.5	62.3	No comments
04/09/2019	12:32	00:15:00	47.8	50.3	52.2	57.6	No comments

2.9 Baseline noise monitoring location S8

Location description:

Stockwell (approx. middle of village)

Measurement duration:

Tue 04/09/2019 14:00

Tue 04/09/2019 16:15

Weather conditions:

Wind direction: East Summary: light breeze, with gusts.

Personnel: Henry Cook

Environment and observations: Opposite farmyard. Farmer was collecting hay, so coming back and forth in tractor with trailer. Various other noise events related to farm, passing cars, but mostly calm.



Table 2-7 Measured sound pressure levels at S8

Date	Time	[hh:mm:ss]	Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
04/09/2019	14:00	00:15:00	46.7	49.0	51.1	63.7	No comments
04/09/2019	15:00	00:15:00	47.5	54.5	55.2	78.3	No comments
04/09/2019	16:00	00:15:00	47.7	53.8	55.9	68.4	No comments

2.10 Baseline noise monitoring location S9

Location description:

At corner of lane intersection with 'Muddy Path' PRoW

Measurement duration:

Tue 04/09/2019 14:25

Tue 04/09/2019 16:44

Weather conditions:

Wind direction:
Northeast/east

Summary: Light breeze with gusts.

Personnel: Henry Cook

Environment and observations: Birds, leaves rustling, A417 clearly audible.



Table 2-8 Measured sound pressure levels at S9

Date	Time [hh:mm:ss]	Sou	nd press (re 2	ure level 0 µPa)	Comments	
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
04/09/2019	14:25	00:15:00	42.9	45.5	47.1	62.4	No comments
04/09/2019	15:29	00:15:00	43.5	48.2	49.2	66.5	No comments
04/09/2019	16:29	00:15:00	44.1	50.0	51.6	70.5	Significantly more passing vehicles than first two 15m periods.

2.11 Baseline noise monitoring location S10

Location description:

Coberley Village

Measurement duration:

Wed 06/11/2019 13:34 to Wed 06/11/2019 13:51

Weather conditions:

Wind direction: East Summary: Very light breeze, maximum wind speeds of 1m/s. Light drizzle.

Personnel: Laura McLeod and Holly Cowperthwaite

Environment and observations:

Road traffic noise audible, A417 dominant. Occasional noise from aircraft, pedestrians and birds.



Table 2-9 Measured noise levels at S10

Date	Time [hh:mm:ss]		Sound		ure level, 0 μPa)	Comments	
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
06/11/2019	13:34	00:05:00	38.9	43.1	45.7	61.1	A417 traffic noise dominant.
06/11/2019	13:39	00:05:00	37.5	40.5	42.3	50.4	Aircraft overhead. Birdsong.
06/11/2019	13:46	00:05:00	38.3	41.0	41.6	59.1	
06/11/2019	14:44	00:05:00	39.6	42.9	44.0	64.7	Road traffic noise dominant.
06/11/2019	14:49	00:05:00	39.6	41.9	43.3	54.1	Distant aircraft overhead.
06/11/2019	14:54	00:05:00	40.4	42.5	44.0	52.3	
06/11/2019	15:44	00:05:00	39.9	41.3	42.5	50.0	Road traffic noise dominant Birdsong very noticeable. Pedestrian noise.
06/11/2019	15:49	00:05:00	38.8	41.9	43.7	51.8	
06/11/2019	15:54	00:05:00	40.2	44.6	47.9	60.6	reuestian noise.

2.12 Baseline noise monitoring location S11

Location description:

Gloucestershire Way, Cowley Footpath No.1 – PRoW

Measurement duration:

Thu 05/09/19 10:43 to

Thu 05/09/19 12:43

Weather conditions:

Wind direction: Southeast Summary: Light breeze.

Personnel: Henry Cook

Environment and observations: Tree/hedge rustling, A417 clearly audible, mostly dominant.



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Table 2-10 Measured sound pressure levels at S11

Date	Time [hh:mm:ss]	Sour	•	ure level, (0 µPa)	Comments	
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
05/09/2019	10:43	00:15:00	48.6	51.3	53.3	64.1	No comments
05/09/2019	10:58	00:15:00	48.8	51.2	52.9	62.0	No comments
05/09/2019	11:13	00:15:00	49.0	51.9	53.7	67.2	No comments
05/09/2019	11:28	00:15:00	49.9	52.7	54.7	65.2	No comments
05/09/2019	11:43	00:15:00	46.7	52.4	53.5	72.1	No comments
05/09/2019	11:58	00:15:00	46.8	50.7	53.6	59.6	No comments
05/09/2019	12:13	00:15:00	49.6	52.3	54.3	60.7	No comments
05/09/2019	12:28	00:15:00	49.3	51.9	53.8	60.8	No comments

Baseline noise monitoring location S12 2.13

Location description:

Measurement duration: Wed 06/11/2019 16:37 to Wed 06/11/2019 15:59

Weather Conditions:

Wind direction: East Summary: Calm conditions with occasional gusts up to 0.8m/s.

Personnel: Laura McLeod and Holly Cowperthwaite

Environment and observations:

A417 dominant. Paused for traffic passbys on the Barn Junction.



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Table 2-11 Measured noise levels at S12

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
06/11/2019	16:37	00:05:00	46.1	47.3	48.3	52.9	A417 road traffic noise dominant. Dogs barking from kennels in the distance.
06/11/2019	16:42	00:05:00	45.9	52.0	48.7	73.4	
06/11/2019	16:49	00:05:00	46.4	47.8	49.0	53.0	

2.14 Baseline noise monitoring location S13

Location description:Cowley Footpath No.22 ProW

Measurement duration:

Thu 05/09/19 14:01 to

Thu 05/09/19 17:01

Weather Conditions:

Wind direction: East Summary: Fairly still. Occasional breeze.

Personnel: Henry Cook

Environment and observations: A417 dominant.



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Table 2-12 Measured sound pressure levels at S13

Date	Time	[hh:mm:ss]	Sou		sure leve 20 µPa)	Comments	
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
05/09/2019	14:01	00:15:00	46.2	48.2	50.0	55.1	No comments
05/09/2019	14:16	00:15:00	46.1	48.0	49.6	54.2	No comments
05/09/2019	14:31	00:15:00	46.0	48.4	50.3	56.6	No comments
05/09/2019	14:46	00:15:00	43.7	47.9	50.1	63.5	No comments
05/09/2019	15:01	00:15:00	44.8	47.5	49.4	56.2	No comments
05/09/2019	15:16	00:15:00	45.4	48.4	50.6	60.1	No comments
05/09/2019	15:31	00:15:00	44.1	48.2	50.1	60.6	No comments
05/09/2019	15:46	00:15:00	46.0	48.3	50.2	58.3	No comments
05/09/2019	16:01	00:15:00	45.1	47.4	49.4	60.3	No comments
05/09/2019	16:16	00:15:00	45.5	48.1	49.8	58.2	No comments
05/09/2019	16:31	00:15:00	46.4	48.4	49.9	55.7	No comments
05/09/2019	16:46	00:15:00	46.3	52.6	50.7	70.9	No comments