

The Great Grid Upgrade

Chesterfield to Willington

Preliminary Environmental Information Report

Volume 3: Appendix 14C Construction Traffic Noise Predictions

March 2026

nationalgrid

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14C. Construction Traffic Noise Predictions

14C.1 Introduction

- 14C.1.1 This appendix presents the methodology, source of data and results of noise predictions from construction traffic on the local road network.
- 14C.1.2 This appendix supports **Chapter 14 Noise and Vibration** in Volume 1 of the Preliminary Environmental Information Report and should be read in conjunction with this chapter.

14C.2 Methodology and Data

Prediction Method

- 14C.2.1 Road traffic noise has been predicted in accordance with Calculation of Road Traffic Noise (CRTN) (Ref 14C.1). CRTN uses Annual Average Weekday Traffic flows (AAWT) over the 18-hour period between 6 am and midnight, to predict road traffic noise in terms of the noise descriptor $LA_{10,18h}$.
- 14C.2.2 Basic Noise Levels (BNLs) have been predicted, which, as set out in CRTN are road traffic noise level predictions at 10 m from the road.
- 14C.2.3 As required by CRTN, a low flow correction has been applied to all road links with an AAWT flow of between 1,000 and 4,000 vehicles.
- 14C.2.4 Road traffic flows of less than 1,000 per day fall outside of the scope of CRTN. In these situations, noise levels have been calculated using guidance from the Noise Advisory Council (NAC) (Ref 14C.2).
- 14C.2.5 The predictions have been made using traffic flow data provided by the Project traffic and transport team, including average speeds and the percentage of Heavy Goods Vehicles (HGVs) for each road link.
- 14C.2.6 Noise predictions have been undertaken for the following scenarios:
- future baseline traffic flow without Project construction traffic; and
 - future baseline traffic flow plus Project construction traffic.
- 14C.2.7 The construction traffic flow values represent the construction period anticipated to experience the highest average daily traffic flows. Forecasts indicate this peak will occur in 2029/2030. Accordingly, traffic data for this period has been adopted.
- 14C.2.8 It is assumed that there is no change in average speed on each road link between the 'future baseline traffic flow without Project construction traffic' and 'future baseline traffic flow plus Project construction traffic' scenarios.
- 14C.2.9 The traffic data adopted for the assessment is presented in **Table 14C.1**.
- 14C.2.10 The table includes comments to state where the road links are part of a Noise Important Area (NIA) or where the road traffic flows are low.
- 14C.2.11 NIAs are noise 'hotspots' defined in Noise Action Plan: Roads (Ref 14C.3) as where the 1 per cent of the population that are affected by the highest noise levels from major roads are located according to the results of the strategic noise mapping.

Table 14C.1: Traffic data used for the construction road traffic assessment

ID	Road Name	Location	Future Baseline 2029/2030		Future Baseline Plus Construction Traffic 2029/2030		Average Speed (km/hr)	Comment
			AAWT	% HGV	AAWT	% HGV		
ATC_1	Chesterfield Road A632	Between Hardwick Drive and Sutton Lane	22,497	8%	23,112	9%	80	
ATC_2	Calow Lane	Between Back Lane and Dark Lane	2,811	11%	3,080	13%	80	
ATC_4	Hasland Road	Between Eastwood Park Drive and Hampton Street	11,738	7%	11,989	7%	50	
ATC_5	Hassocky Lane B6425	Between Sutton Spg Wood and A617	9,132	9%	9,431	10%	108	
ATC_6	Mansfield Road B6425	Between Postmans Lane and Church Lane	9,818	9%	10,120	8%	64	
ATC_7	Sutton Lane	Between Palterton Lane and Hall Drive	2,084	11%	2,586	16%	74	
ATC_8	Slack Lane	Between A6175 and Moorland Drive	2,376	12%	2,936	16%	69	

ID	Road Name	Location	Future Baseline 2029/2030		Future Baseline Plus Construction Traffic 2029/2030		Average Speed (km/hr)	Comment
			AAWT	% HGV	AAWT	% HGV		
ATC_9	Heath Road A6175	Between Springfield Road and Barnfield Close	13,384	14%	13,955	15%	65	NIA
ATC_10	Rupert Street	Between Locko Road and Dale View Close	4,737	6%	5,044	10%	56	
ATC_11	Station Road	Between Prospect Road and Queen Street	3,012	10%	3,386	15%	59	
ATC_12	High Street B6014	Between Brooke Street and Church Lane	8,418	10%	8,578	11%	54	
ATC_13	Doe Hill B6014	Between Peregrine Way and West View	5,317	7%	5,339	7%	75	
ATC_14	Alfreton Road B6025	Between Gloves Lane and Newton Road B6026	2,487	10%	2,675	13%	88	
DCountyC_2	Main Road B6016	Between Asher Lane and Riley Lane	2,174	0%	2,603	6%	48	Baseline HGV data is not available and as such has been assumed from a nearby similar road published by the

ID	Road Name	Location	Future Baseline 2029/2030		Future Baseline Plus Construction Traffic 2029/2030		Average Speed (km/hr)	Comment
			AAWT	% HGV	AAWT	% HGV		
								Department for Transport (Ref 14C.4) (the B6013, site number: 806266)*.
ATC_16	Main Road	Between Bride Lane and Cromford Canal	180	7%	555	16%	61	Very low flow road
ATC_17	Lady Lea Road	Between Church Street and A609	2,716	8%	2,931	12%	64	
ATC_18	Cloves Hill	Between Smalley Mill Road and Woodside	6,788	9%	6,920	8%	61	
ATC_19	Main Road A608	Between Bell Lane and St Johns Road	10,293	9%	10,651	13%	69	
ATC_20	Main Road A608	Between Brickkiln Lane and Church Lane	13,924	8%	14,534	11%	76	
ATC_21	Hill Top A608	Between Lime Lane and Alport Heights Drive	9,938	8%	10,625	13%	90	
ATC_22	Moor Street	Between Courtyard Place and Chapel Street	11,839	9%	12,049	10%	53	

ID	Road Name	Location	Future Baseline 2029/2030		Future Baseline Plus Construction Traffic 2029/2030		Average Speed (km/hr)	Comment
			AAWT	% HGV	AAWT	% HGV		
ATC_23	A6005	Between Princess Drive and Cumberland Crescent	8,276	8%	8,863	13%	65	
ATC_24	A6005	Between Brook Road and Nottingham Road	10,928	8%	11,521	10%	64	
ATC_25	Chellaston Lane	Between Woodsford Drive and Colwell Drive	10,601	6%	10,813	7%	74	
ATC_26	B5010	Between Elvaston Lane and Ambaston Lane	5,511	7%	5,951	11%	68	
ATC_27	B5010	Between the B5010 and Derby Road	8,914	9%	9,339	10%	95	
ATC_28	Wragley Way	Between Beaufort Road and Arleston Lane	5,104	7%	5,264	9%	79	
DCountyC_1	Chesterfield Road A61	Between B6025 and B6019	15,077	5%	15,535	6%	90	NIA
DfT_1	A617	Between St Leonards Drive and B6425	39,376	5%	39,787	5%	97	NIA

ID	Road Name	Location	Future Baseline 2029/2030		Future Baseline Plus Construction Traffic 2029/2030		Average Speed (km/hr)	Comment
			AAWT	% HGV	AAWT	% HGV		
DfT_2	A61	Between Park Lane and Hallfieldgate Lane	14,142	3%	14,612	3%	64	NIA
DfT_3	A615	Between Gooker Lane and B6013	11,548	2%	12,370	5%	64	NIA
DfT_4	B6013	Between Riley Lane and B6016	4,035	1%	4,198	5%	80	
DfT_5	Heage Road B6374	Between Street Lane and Norman Road	7,352	1%	7,826	3%	64	
DfT_6	New Road B6013	Between Old Road and Jackson's Lane	5,843	1%	6,019	3%	48	
DfT_7	Chesterfield Road B6013	Between Church View and Swinney Lane	9,076	1%	9,251	2%	48	
DfT_8	Spencer Street A609	Between Windmill Lane and Spencer Avenue	5,766	1%	5,909	4%	48	
DfT_9	Main Street A609	Between Golden Valley and The Crescent	9,126	1%	9,582	5%	48	

ID	Road Name	Location	Future Baseline 2029/2030		Future Baseline Plus Construction Traffic 2029/2030		Average Speed (km/hr)	Comment
			AAWT	% HGV	AAWT	% HGV		
DfT_10	A38 off slip	Between A38 and Derby Road B6179	2,269	3%	2,379	4%	80	
DfT_11	A38 on slip	Between Derby Road B6179 and A38	5,215	2%	5,275	3%	97	
DfT_12	A38 off slip	Between A38 and Derby Road B6179	3,728	5%	3,787	6%	97	
DfT_13	A61	Between Abbey Hill A38 and Croft Lane	43,896	3%	44,551	4%	80	
DfT_14	Twyford Road A5132	Between Twyford Road and Brookfield	4,874	6%	5,426	9%	64	
DfT_15	Swarkestone Road A514	Between Swarkestone Road and A50	20,340	1%	21,535	4%	80	
DfT_16	Stenson Road	Between Masefield Avenue and Sunnyhill Avenue	14,677	1%	15,032	1%	48	

ID	Road Name	Location	Future Baseline 2029/2030		Future Baseline Plus Construction Traffic 2029/2030		Average Speed (km/hr)	Comment
			AAWT	% HGV	AAWT	% HGV		
DCityC_1	Manor Road A5111	Between Constable Lane and Eastwood Drive	30,884	3%	31,267	3%	68	NIA
DCityC_2	A61	Between Wheatcroft Way and Mansfield Road A608	26,897	7%	27,579	9%	72	

**In the 2024 estimated data, the total number of flows was below 4,000, with HGVs accounting for less than 1%. For the proposed scheme, the peak Annual Average Daily Traffic includes up to 160 daily HGV movements, which has been used to calculate the future baseline HGV percentage.*

14C.3 Construction Road Traffic Prediction

- 14C.3.1 The change in road traffic noise levels has been calculated by comparing the BNLs for the scenario '*future baseline traffic flow without Project construction traffic*' against the scenario '*future baseline traffic flow plus Project construction traffic*'. The results are presented in **Table 14C.2**.

Table 14C.2: Predicted change in construction traffic noise levels

ID	Road Name	Location	Future Baseline 2029/2030 dB LA_{10,18h}	Future Baseline Plus Construction Traffic 2029/2030 dB LA_{10,18h}	Change in Noise Level, dB
ATC_1	Chesterfield Road A632	Between Hardwick Drive and Sutton Lane	75.0	75.3	0.3
ATC_2	Calow Lane	Between Back Lane and Dark Lane	66.5	67.2	0.7
ATC_4	Hasland Road	Between Eastwood Park Drive and Hampton Street	69.4	69.4	0.0
ATC_5	Hassocky Lane B6425	Between Sutton Spring Wood and A617	73.5	73.7	0.2
ATC_6	Mansfield Road B6425	Between Postmans Lane and Church Lane	70.0	70.1	0.1
ATC_7	Sutton Lane	Between Palterton Lane and Hall Drive	65.0	66.5	1.5
ATC_8	Slack Lane	Between A6175 and Moorland Drive	65.2	66.6	1.4
ATC_9	Heath Road A6175	Between Springfield Road and Barnfield Close	72.4	72.8	0.4
ATC_10	Rupert Street	Between Locko Road and Dale View Close	65.6	66.7	1.1
ATC_11	Station Road	Between Prospect Road and Queen Street	64.9	66.1	1.2
ATC_12	High Street B6014	Between Brooke Street and Church Lane	68.9	69.2	0.3
ATC_13	Doe Hill B6014	Between Peregrine Way and West View	68.0	68.0	0.0
ATC_14	Alfreton Road B6025	Between Gloves Lane and Newton Road B6026	66.6	67.2	0.6
DCountyC_2	Main Road B6016	Between Asher Lane and Riley Lane	59.8	62.5	2.7
ATC_16	Main Road	Between Bridle Lane and Cromford Canal	Very low flow road – See paragraphs 14C.2.2 and 14C.3.1		

ID	Road Name	Location	Future Baseline 2029/2030 dB LA_{10,18h}	Future Baseline Plus Construction Traffic 2029/2030 dB LA_{10,18h}	Change in Noise Level, dB
ATC_17	Lady Lea Road	Between Church Street and A609	64.4	65.6	1.2
ATC_18	Cloves Hill	Between Smalley Mill Road and Woodside	68.2	68.3	0.1
ATC_19	Main Road A608	Between Bell Lane and St Johns Road	70.8	71.6	0.8
ATC_20	Main Road A608	Between Brickkiln Lane and Church Lane	72.5	73.2	0.7
ATC_21	Hill Top A608	Between Lime Lane and Alport Heights Drive	72.3	73.3	1.0
ATC_22	Moor Street	Between Courtyard Place and Chapel Street	70.0	70.3	0.3
ATC_23	A6005	Between Princess Drive and Cumberland Crescent	69.2	70.6	1.4
ATC_24	A6005	Between Brook Road and Nottingham Road	70.3	70.9	0.6
ATC_25	Chellaston Lane	Between Woodsford Drive and Colwell Drive	70.7	70.9	0.2
ATC_26	B5010	Between Elvaston Lane and Ambaston Lane	67.6	68.7	1.1
ATC_27	B5010	Between the B5010 and Derby Road	72.3	72.7	0.4
ATC_28	Wragley Way	Between Beaufort Road and Arleston Lane	68.2	68.7	0.5
DCountyC_1	Chesterfield Road A61	Between B6025 and B6019	73.6	73.9	0.3
DfT_1	A617	Between St Leonards Drive and B6425	78.2	78.3	0.1
DfT_2	A61	Between Park Lane and Hallfieldgate Lane	70.2	70.5	0.3
DfT_3	A615	Between Gooker Lane and B6013	69.2	70.3	1.1
DfT_4	B6013	Between Riley Lane and B6016	65.9	67.0	1.1
DfT_5	Heage Road B6374	Between Street Lane and Norman Road	66.9	67.7	0.8
DfT_6	New Road B6013	Between Old Road and Jackson's Lane	64.0	65.1	1.1

ID	Road Name	Location	Future Baseline 2029/2030 dB LA_{10,18h}	Future Baseline Plus Construction Traffic 2029/2030 dB LA_{10,18h}	Change in Noise Level, dB
DfT_7	Chesterfield Road B6013	Between Church View and Swinney Lane	65.9	66.6	0.7
DfT_8	Spencer Street A609	Between Windmill Lane and Spencer Avenue	64.2	65.2	1.0
DfT_9	Main Street A609	Between Golden Valley and The Crescent	66.3	67.8	1.5
DfT_10	A38 off slip	Between A38 and Derby Road B6179	64.2	64.7	0.5
DfT_11	A38 on slip	Between Derby Road B6179 and A38	69.0	69.2	0.2
DfT_12	A38 off slip	Between A38 and Derby Road B6179	68.0	68.2	0.2
DfT_13	A61	Between Abbey Hill A38 and Croft Lane	76.8	77.2	0.4
DfT_14	Twyford Road A5132	Between Twyford Road and Brookfield	66.4	67.5	1.1
DfT_15	Swarkestone Road A514	Between Swarkestone Road and A50	73.1	73.9	0.8
DfT_16	Stenson Road	Between Masefield Avenue and Sunnyhill Avenue	68.0	68.4	0.4
DCityC_1	Manor Road A5111	Between Constable Lane and Eastwood Drive	74.0	74.2	0.2
DCityC_2	A61	Between Wheatcroft Way and Mansfield Road A608	74.8	75.3	0.5
DCityC_3	Mansfield Road A608	Between Old Mansfield Road and Lime Avenue	73.0	73.7	0.7

14C.3.2 For Main Road (ID ATC_16), the AAWT flow is less than 1,000 vehicles. As such, the NAC method described in paragraph 14C.2.4 has been used. The results are presented in **Table 14C.3**.

Table 14C.3: Construction traffic noise prediction for very low flow road

ID	Road Name	Location	Future Baseline 2029/2030 dB LA_{eq,18h}	Future Baseline Plus Construction Traffic 2029/2030 dB LA_{eq,18h}	Change In Noise Level, dB
ATC_16	Main Road	Between Bridle Lane and Cromford Canal (Amber Valley Borough Council)	48.9	54.8	5.9

References

- Ref 14C.1 Department of Transport Welsh Office (1988). Calculation of Road Traffic Noise.
- Ref 14C.2 The Noise Advisory Council (NAC) (1978). A Guide to Measurement and Prediction of the Equivalent Continuous Sound Level Leq – Report by a Working Party for the Technical Sub-Committee of the Council. United Kingdom.
- Ref 14C.3 Department for Environment, Food and Rural Affairs (2019). Noise Action Plan: Roads. Environmental Noise (England) Regulations 2006.
- Ref 14C.4 Department for Transport, <https://roadtraffic.dft.gov.uk/count-points/806266> [Online] [Accessed October 2025].
- Ref 14C.5 Department for Environment, Food and Rural Affairs (2019). Round 4 Noise Mapping [Online]. Available at: <http://www.extrium.co.uk/noiseviewer.html> [Accessed October 2025].

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