

A417 Missing Link  
TR010056

6.4 Environmental Statement  
Appendix 11.3 Construction Plant  
Machinery

Planning Act 2008

APFP Regulation 5(2)(a)  
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Development Consent Order 202[x]

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# 1 Construction plant machinery

- 1.1.1 The type and number of construction plant and the intensity and duration of the construction processes in Table 1-1 and Table 1-2 has been based on the available construction planning information and data taken from similar highway construction works.
- 1.1.2 The assumptions are based on key noisy construction plant and activities that would be used across the proposed scheme. These are considered suitable to represent the types and scale of works and associated impacts for the A417 scheme assessment.
- 1.1.3 For activities 1 to 10 it is assumed that works will be undertaken by three gangs, each with the described plant in Table 1-1 working at 100m centres along the trace of the proposed scheme.

**Table 1-1 Construction stages and assumed plant required per gang for daytime processes**

Activity		Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time <sup>1,2</sup>
1	Site clearance & tree & vegetation removal	Grubbing of existing structures	Tracked excavator	106	BS5228 Table C 2-3	2	60
		Vegetation clearance	Chain saw	114	BS522 Table D 2-14	2	25
		Transportation of material	Wheeled loader	108	BS5228 Table C 2-27	1	75
2	Boundary fence	Fence post hole drilling	Petrol driven auger	100	Stihl – BT 130 Petrol Earth Auger Technical data	1	25
		Wheeled backhoe loader	Wheeled backhoe loader	96	BS5228 Table C 2-8	1	50
3	Topsoil strip	Topsoil strip	Bulldozer	111	BS5228 Table C 5-15	1	75
		Spoil transportation	Tracked excavator	106	BS5228 Table C 2-3	1	75

Activity		Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time <sup>1,2</sup>
		Transporting material	Wheeled loader	108	BS5228 Table C 2-27	1	75
4	Excavation of cuttings	Cutting	Tracked excavator	106	BS5228 Table C 2-3	1	75
		Cutting	Excavator mounted rock breaker	121	BS5228 Table C 9-11	1	75
		Removal of material	Tracked excavator (loading dump truck)	113	BS5228 Table C 1-10	2	50
5	Drainage	Trenches, ponds, lifting pipes, backfilling with stone	Tracked excavator	106	BS5228 Table C 2-3	2	75
		Earthworks	Dump truck (tipping fill)	107	BS5228 Table C 2-30	1	75
		Transporting material	Wheeled loader	108	BS5228 Table C 2-27	2	75
6	Subbase	Spreading fill	Tracked excavator	106	BS5228 Table C 2-3	1	75
		Transporting material	Wheeled loader	108	BS5228 Table C 2-27	2	75
		Ground compaction	Grader	112	BS5228 Table D 3-75	2	75
7	Surface water channel	Trenching	Wheeled backhoe loader	97	BS5228 Table C 4-66	2	80
		Transporting material	Wheeled loader	108	BS5228 Table C 2-27	1	75
8	Pavement / surfacing	Road surfacing	Asphalt paver (+ tipper lorry)	105	BSS522 Table C 5-31	3	50

Activity		Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time <sup>1,2</sup>
		Road surfacing	Road roller	108	BS5228 Table C 5-19	2	50
		Vibratory compactor	Vibratory roller	102	BS5228 Table C 2-39	2	25
9	Earthworks (minor)	Earthworks	Tracked excavator	106	BS5228 Table C 2-3	1	60
		Earthworks	Dump truck (tipping fill)	110	BS5228 Table D 3-60	1	75
		Transporting material	Wheeled loader	108	BS5228 Table C 2-27	1	50
		Vibratory compactor	Vibratory roller	102	BS5228 Table C 2-39	1	50
10	Earthworks (major)	Earthworks	Tracked excavator	106	BS5228 Table C 2-3	1	80
		Earthworks	Dump truck (tipping fill)	110	BS5228 Table D 3-60	2	75
		Earthworks	Bulldozer	111	BS5228 Table C 5-15	1	80
		Vibratory compactor	Vibratory roller	102	BS5228 Table C 2-39	2	50
11	Structures	Pumping concrete	Concrete pump and concrete mixer truck	110	BS522 Table C 4-25	1	50
		Pumping concrete / assembling / welding / assembling form work / transporting material / lifting beams	Tracked crane	109	BS522 Table D 6-18	1	80
		Grinding steel	Angle grinder	108	BS5228 Table C 4-93	2	25

Activity		Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time <sup>1,2</sup>
		Hand tools	Hand tools	107	Estimated	3	25
		Concrete mixing	Large lorry concrete mixer	105	BS5228 Table C 4-21	2	25
		Rock drilling – to represent soil nailing	Hand-held pneumatic rock drill	118	BS5228 Table D 7-68	1	25
		Augured piles	Crane mounted auger	107	BS5228 Table C 3-16	1	25
12	Stone crushing	Stone crushing	Tracked semi-mobile crusher	118	BS5228 Table C 9-14	1	80
		Stone crushing	Screen stockpiler	109	BS5228 Table C 10-14	1	80
13	Removal of current A417	Planer	Road planer	110	BS5228 Table C 5-7	1	80
14	Haul Road <sup>3</sup>	Haul Road Traffic	Articulated dump truck	117	BS5228 Table C 9-22	25 per hour	-

Note 1: The on-time is an estimate of the percentage per hour that plant would be expected to be operational for over the proposed ten hour working day. No further adjustment has been made to compare with the 12 hour assessment period thresholds assumed in BS5228 Table E.1 thus presenting a worst-case assessment.

Note 2: On-time has been corrected as per BS 5228 Annex F, Section 2.4 in the calculations to account for plant working in a localized area close to receptors.

Note 3: Haul road calculation using the method in BS 5228-1 Annex F, Section 2.5.2 with assumed 25km/h speed.

**Table 1-2 Construction stages and assumed plant required for night-time processes**

Stage	Construction Activity	Plant	Sound Power (dBA)	Reference	Number of plant items	% On-time <sup>2</sup>	
1	Bailey Bridge	Lifting in bridge beams	Tracked mobile crane	99	BS5228 Table C 4-50	1	100
		Additional bridge works	Wheeled mobile telescopic crane	106	BS5228 Table C 4-38	1	100
		Poker vibrator	Poker vibrator	97	BS5228 Table C 4-34	1	100
		Generator for lighting	Diesel generator	93	BS5228 Table C 4-87	2	100
		Generator for poker vibrator	Generator for welding	85	BS5228 Table C 3-33	1	100
		Compressor	Compressor for hand-held pneumatic breaker	93	BS5228 Table C 5-5	1	100
		Truck mounted concrete pump and boom arm	Truck mounted concrete pump and boom arm	108	BS5228 Table C 4-29	1	50
2	Traffic Management works	Road roller	Road roller	108	BS5228 Table C 5-19	1	100
		Wheeled excavator	Wheeled excavator	94	BS5228 Table C 4-10	1	100
		Dumper	Dumper	104	BS5228 Table C 4-3	1	100
		Lorry with lifting boom	Lorry with lifting boom	105	BS5228 Table C 4-53	1	100
		Generator for lighting	Diesel generator	93	BS5228 Table C 4-87	1	100

Note 2: On-time has been corrected as per BS 5228 Annex F, Section 2.4 in the calculations to account for plant working in a localized area close to receptors.