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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix SV-001-OR001

Sound, noise and vibration

Off-route works: Preston Station

Baseline and construction sound, noise and vibration report

M256

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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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1 Introduction

1.1.1 This report is an appendix to the sound, noise and vibration assessment. It provides details of the sound, noise and vibration baseline data and construction sound, noise and vibration assessment relevant to the Proposed Scheme in relation to the off-route works in the Preston Station area.

1.1.2 This appendix should be read in conjunction with Volume 4, Off-route effects.

1.1.3 An introduction to policy relevant to sound, noise and vibration and the assessment methodology can be found in Volume 5, Appendix SV-001-00000.

2 Baseline and construction

2.1 Regional and local policy guidance

2.1.1 As part of the engagement with local authorities where the Proposed Scheme would operate, information regarding any specific local planning guidance in respect of noise and vibration was requested. The guidance within the following documents has been considered when applying the impact and significance criteria set out in the Environmental Impact Assessment Scope and Methodology Report (SMR), (see Appendix CT-001-00001):

- the Preston City Council (PCC) Local Plan 2012[1]; and
- the Preston, South Ribble and Chorley joint Core Strategy 2012[2].

2.2 Engagement

2.2.1 Details of engagement on a route-wide basis with the local and county authorities' Environmental Health Practitioners is set out in Volume 1.

2.2.2 A meeting[3] has been held with representatives of PCC regarding the approach taken to baseline monitoring within this area, the identification of noise and vibration sensitive receptors, the selection of assessment locations and the development of the mitigation to be included in the Proposed Scheme.

2.2.3 Changes suggested during these meetings have influenced the assessment locations used and the monitoring undertaken and are reported in this appendix. PCC officers were also invited to attend baseline sound measurements in this area and witness the measurement procedures used.

2.2.4 Local engagement provided opportunities for local stakeholders to suggest appropriate baseline sound monitoring locations, to confirm building uses and to review the draft list of non-residential properties to be considered in the assessment.

2.3 Methodology

2.3.1 The methodology used for the assessment of airborne sound, ground-borne sound and vibration impacts and the determination of significant effects is defined in the SMR. Further information is contained in Volume 5, Appendix SV-001-00000.

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[1] Preston City Council (2015), *Preston Local Plan 2012-2026, Site Allocations & Development Management Policies*.

[2] Preston City Council, South Ribble Borough Council and Chorley Council (2012), *Central Lancashire Adopted Core Strategy*, *Local Development Framework*.

[3] Meeting held on 10 August 2020.

2.4 Assumptions

2.4.1 Route-wide assumptions are outlined in Volume 1, Section 8, and are further detailed in Volume 5, Appendix SV-001-00000. Local assumptions that apply to the assessment of construction sound noise and vibration at the Preston Station area are set out in Volume 4, Off-route effects.

2.5 Limitations

2.5.1 The route-wide limitations and the approach adopted to ensure that they will not compromise the robust assessment of sound, noise and vibration are presented in Volume 5, Appendix SV-001-00000 and Volume 4.

3 Baseline

3.1 Existing baseline data collection methodology

3.1.1 The overall approach to baseline data collection for sound noise and vibration is described in Volume 5, Appendix SV-001-00000. In summary, the approach to defining baseline levels includes a combination of sound monitoring in proximity of Preston Station, and elsewhere baseline sound levels have been assumed to be sufficiently low such that the construction sound and noise assessment can use Category A of the BS5228-1[4] 'ABC Method' (described as all other locations in Table 1).

3.1.2 The area around Preston Station is characterised by a mix of residential, non-residential and industrial buildings within a predominantly urban setting. The sound environment is generally dominated by local and distant road and rail traffic, including the West Coast Main Line serving Preston Station. Local neighbourhood sources, with commercial and natural sounds also contribute to sound levels throughout the area. There are several main roads within the Preston Station area including the A59 Ring Way (between Bow Lane and the A6 London Road), the New Hall Lane and the A59 Preston New Road. Other main roads that contribute to the sound environment are the A5072 Strand Road, the A6 London Road, Corporation Street, Fishergate and Fishergate Hill. Existing sound levels are typically between 50dB – 60dB during the daytime, and typically between 45dB – 50dB during the night-time.

3.2 Future baseline methodology

Construction

3.2.1 The assessment of noise from construction activities assumes a future baseline year of 2026. As a conservative assumption it has been assumed that no change in baseline sound levels will occur between the existing baseline year of 2018 and the future baseline year of 2026.

3.3 Baseline sound levels

3.3.1 Baseline sound levels have been ascertained for each assessment location within this area. Baseline sound levels are presented in terms of the following key sound indicators:

- baseline levels used for the construction sound assessment:
  - daytime L_{pAeq} sound pressure level (Monday to Friday 07:00 – 19:00; Saturday 07:00 – 13:00);

[4] British Standards Institute (2009), *BS 5228-1:2009: Code of practice for noise and vibration control on construction and open sites – Part 1: Noise (+A1:2014)*. BSI, London, UK.

- evening/weekend L_{pAeq} sound pressure level (Monday to Friday 19:00 – 23:00, Saturday 13:00 – 23:00 and Sunday 07:00 – 23:00); and
- night-time L_{pAeq} sound pressure level (Monday to Sunday 23:00 – 07:00).

3.3.2 These values are presented in Table 1. All values are free-field. The data source coding included within this table details how the baseline sound levels allocated to each assessment location have been derived. This coding is summarised in Table 2 and explained in detail in Volume 5, Appendix SV-001-00000. Codes contained within brackets relate to the derivation of night-time baseline noise levels where they are different to the daytime derivation method.

Table 1: Baseline sound levels

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
			For construction sound assessment (2026)			For operational sound assessment (2038)				
Reference	Area represented		Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
618300	Christian Road, Preston	717550	62	51	52	62	52	78	77	2,A,ii,b
618326	Footpath off West Cliff, Preston	717551	50	48	46	50	46	65	57	2,A,ii,b
	All other assessment locations		<40	<35	<30	-	-	-	-	-,C,i,b

Table 2: Data source coding key

Code	Data source type
1	Long-term measurement location (typically seven days).
2	Short-term (typically unattended 24 hours or attended measurements of several hours).
3	Specific road traffic validated prediction.
4	Specific rail traffic validated prediction.
5	Specific combined road and rail traffic validated prediction.
6	Levels adopted from nearby assessment location.
7	Predictions from other sources (e.g. Defra noise maps).
Code	**Corrections applied**
A	Data from above source applied directly.
B	Correction applied based upon location of assessment location.
C	Minimum level cut-off applied.
Code	**Distance from measurement**
i	Data applied from a measurement / prediction at or very close to the assessment location.
ii	Data applied from a local measurement location at a greater distance but noted to have equivalent acoustic climate.
iii	Data applied from a distant measurement location where sound levels would be expected to be similar.
Code	**Uncertainty**
a	Data are considered highly representative of the prevailing sound climate.
b	Data are considered representative of the prevailing sound climate, but uncertainties and/or variations in measured levels indicate that there may be a higher degree of uncertainty than for (a).
c	Data are considered to be an estimate of the sound climate due to assumptions made.

4 Construction

4.1 Introduction

4.1.1 This section provides a quantitative assessment of construction noise and vibration impacts/effects and a qualitative assessment of likely significant effects, based on the impacts/effects identified and other local context information consistent with the scope and methodology defined for the Proposed Scheme.

4.2 Evaluation of impacts and effects

4.2.1 Indirect effects arising from temporary changes in traffic patterns on the existing road network as a consequence of constructing the Proposed Scheme are reported where they are likely to occur within the study area as defined in Volume 5, Appendix SV-001-00000.

4.2.2 In undertaking the assessment of sound, noise and vibration, consistent with the Environmental Impact Assessment Directive[5] and planning practice and guidance on noise[6] a differentiation between impacts and effects, adverse effects and significant effects is made. Further information is provided in Volume 5, Appendix SV-001-00000.

4.2.3 The assessment of impacts and effects has been undertaken at assessment locations that are representative of a number of dwellings or other sensitive receptors. The construction assessment locations employed in this assessment are presented on Map Series SV-03 in the Volume 5, Sound, noise and vibration Map Book.

4.2.4 Baseline sound level data has been collected at locations representative of the airborne sound-sensitive receptors and presented in Table 1.

4.3 Effects during construction

Introduction

4.3.1 The assessment is reported first for ground-borne sound and vibration and then for airborne sound. Under each of these headings, the results of the identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in Volume 4, Off-route effects, Section 3.

[5] *Directive 85/337/EEC, as amended by 97/11/EC, 2003/35/EC, 2011/92/EC and 2014/52/EU ('the EIA Directive') of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment.* Strasbourg, European Parliament and European Council.

[6] Ministry of Housing, Communities & Local Government (2019), *Planning Practice Guidance – Noise*. Available online at: https://www.gov.uk/guidance/noise--2.

Avoidance and mitigation measures

4.3.2 These are set out in Volume 4, Off-route effects, Section 3.

Identification of impacts and effects

4.3.3 Assessment locations defined for the quantitative assessment of impacts are shown on Volume 5 Sound, noise and vibration Map Book: Map Series SV-03.

4.3.4 For each assessment location, the assessment results are presented in Table 4 and Table 5. Explanation of the information in Table 4 and Table 5 is provided in Volume 5: Appendix SV-001-00000, with the following additional notes in Table 3.

Table 3: Explanatory notes for assessment results – direct construction effects

Symbol	Explanation
	Where the significant effect column is highlighted in pink, then a significant effect is identified at the referenced residential community area.
	For residential receptors yellow denotes a minor ground-borne vibration impact.
	For residential receptors orange denotes a moderate ground-borne vibration impact.
	For residential receptors red denotes a major ground-borne vibration impact.
*	For residential receptors this indicates a potentially significant effect where the quantitative impact methodology has identified an impact at this receptor which, based upon further qualitative receptor information, (see assessment text) does not give rise to a significant effect. For non-residential receptors this indicates the predicted noise levels are above screening criteria which, based upon further qualitative receptor information, (see assessment text) does not give rise to a significant effect.
~	When considered under the significance criteria set out in Volume 5: Appendix SV-001-00000, Annex A, Section 1.3, these adverse effects are not considered to be significant on a community basis.
A	For residential Assessment Locations (AL) - Construction sound or vibration levels from the Proposed Scheme exceed Lowest Observed Adverse Effect Level (LOAEL): the significance criteria set out in Volume 5: Appendix SV-001-00000, Annex A, Section 1.3 are considered when establishing significant effects. For non-residential AL and external amenity spaces - Construction sound or vibration levels from the Proposed Scheme exceed the screening criteria in the SMR Section 18.
S	Sound levels from the Proposed Scheme exceed Significant Observed Adverse Effect Level (SOAEL): noise insulation (or temporary rehousing at higher noise levels) therefore provided.
NA	Sound or vibration levels from the Proposed Scheme do not exceed LOAEL, therefore generally no adverse effect.
R	Type of receptor – residential.
A1 – A4	Type of receptor (airborne sound) - (A1) large and small auditoria; concert halls, sound recording and broadcast studios and theatres, (A2) places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (A3) schools; colleges; hospitals, hotels and libraries, (A4) offices and amenity spaces.
V1 – V4	Type of receptor (ground-borne vibration) – (V1) vibration sensitive research and manufacturing; hospitals with vibration sensitive equipment/operations; universities with vibration sensitive research equipment/operations, (V2) hotels, hospital wards and education dormitories, (V3) offices, schools and places of worship, (V4) workshops.

Symbol	Explanation
T	Receptor design – typical.
SP	Receptor design – special.
+	The use and sensitivity of this non-residential receptor or land use is very sensitive to noise and has been included in the detailed assessment (presented in Volume 4) where there is a change less than 3dB. In each case specific information is presented in an associated footnote.
$	The impact methodology for non-residential receptors includes a screening criterion for A2 building use of 50dB$L_{pAeq,07:00 - 23:00,}$ A3 building use of 50dB$L_{pAeq,07:00 - 23:00}$, and 45dB$L_{pAeq,23:00 - 07:00}$ and for A4 building use 55dB$L_{pAeq,07:00 - 23:00}$ (except for A4 buildings containing lower sensitivity offices, in which case the relevant A and B categories from the BS5228 ABC method will be used to assess the noise impact). At the receptor denoted, the screening criteria is met but a change of 3dB or greater has not been identified and therefore no impact is identified. Further information is provided in Volume 5: Appendix SV-001-00000.
H	Existing environment – high existing airborne ambient noise levels, day >75dB, evening >65dB or night >55dBL_{pAeq} at the façade.
L	Existing environment – low existing airborne ambient noise levels, day and evening ≤45dB, or night ≤35dBL_{pAeq} at the façade.
D,E,N	Impact duration (months) – duration of impact during the day (D), evening (E) or night (N).
O, CT, V	Combined impact: If noise or vibration impacts from other construction activities occur at this location: onsite activities (O), off-site construction traffic activities (CT), or construction vibration (V).
NI	Mitigation effect - identified as likely to qualify for noise insulation under the draft Code of Construction Practice (CoCP) Volume 5: Appendix CT-002-00000.
TR	Mitigation effect - identified as likely to qualify for temporary rehousing under the draft CoCP.

Ground-borne sound and vibration

4.3.5 There are no activities associated with the construction phase of the Proposed Scheme which will generate ground-borne sound and vibration. Therefore significant direct effects are unlikely to occur on residential or non-residential receptors in this area.

Airborne sound: direct impacts and effects

4.3.6 Activities associated with the construction phases of the Proposed Scheme will generate airborne noise. The assessment of the likely impacts and significant effects as a result of the construction noise has considered the effects on:

- residential receptors, both as individual dwellings and communities; and
- non-residential receptors, including quiet areas.

4.3.7 For each type of receptor, the typical and highest monthly $L_{Aeq,T}$ noise levels from construction activities have been calculated at the façade of all assessment locations. This is subject to the screening distances identified and based upon supplied plant information from engineers.

4.3.8 The results, impact criteria and significance criteria for the assessment of the scheme at residential and non-residential receptors are presented in Table 4 and Table 5 respectively.

Explanation of the information within Table 4 and Table 5 is provided in Volume 5, Appendix SV-001-00000, with the additional notes presented in Table 3.

Table 4: Assessment of construction noise at residential receptors

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
618301	36 Christian Road, Preston	61/64[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	2	R	T	-	-	-	-	-	
618302	28 Christian Road, Preston	68/71[A]	-/-[A]	-/-[A]	Day: Footbridge construction	A	14	R	T	-	-	D6	-	-	PSTN-C-C1
618303	4 Fishergate Court, Preston	71/73[A]	-/-[A]	-/-[A]	Day: Platform refurbishment and extension	A	6[7]	R	T	-	-	D14	-	-	PSTN-C-C1
618304	65 Fishergate, Preston	62/65[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	17	R	T	-	-	-	-	-	
618305	27 Stanley Place, Preston	53/56[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	9	R	T	-	-	-	-	-	
618307	6 Stanley Place, Preston	49/52[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	22	R	T	-	-	-	-	-	
618308	Station Terrace, Waltons Parade, Preston	56/59[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	47	R	T	-	-	-	-	-	
618309	12 Waltons Parade, Preston	48/53[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	19	R	T	-	-	-	-	-	

[7] Approximately five of the properties classes as a significant effect.

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
618311	11 Fishergate Hill, Preston	45/48[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	8	R	T	-	-	-	-	-	
618316	41 Westcliff, Preston	57/58[A]	-/-[A]	-/-[A]	Day: General site works	NA	26	R	T	-	-	-	-	-	
618317	35 Westcliff Terrace, Preston	57/61[A]	-/-[A]	-/-[A]	Day: Platform refurbishment and extension	NA	3	R	T	-	-	-	-	-	
618319	24 Westcliff Terrace, Preston	44/48[A]	-/-[A]	-/-[A]	Day: Platform refurbishment and extension	NA	23	R	T	-	-	-	-	-	
618320	76 Westcliff, Preston	53/57[A]	-/-[A]	-/-[A]	Day: Platform refurbishment and extension	NA	14	R	T	-	-	-	-	-	
618321	68 Westcliff, Preston	55/58[A]	-/-[A]	-/-[A]	Day: Platform refurbishment and extension	NA	29	R	T	-	-	-	-	-	
618322	46 Westcliff, Preston	45/46[A]	-/-[A]	-/-[A]	Day: General site works	NA	54	R	T	-	-	-	-	-	
618323	34 Westcliff, Preston	49/50[A]	-/-[A]	-/-[A]	Day: General site works	NA	7	R	T	-	-	-	-	-	
618324	1 Cliff Street, Preston	43/45[A]	-/-[A]	-/-[A]	Day: General site works	NA	14	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
618327	20 Meadow Court, Preston	36/38[A]	-/-[A]	-/-[A]	Day: General site works	NA	22	R	T	-	-	-	-	-	
618328	63A Grafton Street, Preston	35/36[A]	-/-[A]	-/-[A]	Day: General site works	NA	11	R	T	-	-	-	-	-	
618330	54 Grafton Street, Preston	38/40[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	11	R	T	-	-	-	-	-	
618332	33 Lauderdale Street, Preston	37/39[A]	-/-[A]	-/-[A]	Day: General site works	NA	9	R	T	-	-	-	-	-	
618335	99 Fishergate Hill, Preston	46/48[A]	-/-[A]	-/-[A]	Day: General site works	NA	19	R	T	-	-	-	-	-	
618341	2 Christ Church Street, Preston	42/45[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	7	R	T	-	-	-	-	-	
618348	4 East Cliff, Preston	52/55[A]	-/-[A]	-/-[A]	Day: General site works	NA	14	R	T	-	-	-	-	-	
618349	19 East Cliff Road, Preston	50/53[A]	-/-[A]	-/-[A]	Day: General site works	NA	5	R	T	-	-	-	-	-	
618350	3 East Cliff Road, Preston (Mapbook ref.: PSTN/017)	45/50[A]	-/-[A]	-/-[A]	Day: General site works	NA	9	R	T	-	-	-	-	-	
618352	86 Mount Street, Preston	40/47[A]	-/-[A]	-/-[A]	Day: General site works	NA	7	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
618353	79 Fishergate, Preston	58/64[A]	-/-[A]	-/-[A]	Day: Platform refurbishment and extension	NA	1	R	T	-	-	-	-	-	
618354	The Station Hotel, Butler Street, Preston	59/66[A]	-/-[A]	-/-[A]	Day: Platform refurbishment and extension	A	1	R	T	-	-	D1	-	-	~
618355	Kingswood Property Insurance, 8 Victoria Buildings, Fishergate, Preston	52/56[A]	-/-[A]	-/-[A]	Day: Platform refurbishment and extension	NA	6	R	T	-	-	-	-	-	
618357	Dwelling in Avenham Park	35/37[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	1	R	T	-	-	-	-	-	
618358	19 Ribblesdale Place, Preston	35/40[A]	-/-[A]	-/-[A]	Day: General site works	NA	15	R	T	-	-	-	-	-	
618360	4 Mount Street, Preston	40/46[A]	-/-[A]	-/-[A]	Day: General site works	NA	1	R	T	-	-	-	-	-	
618361	Moka Coffee Shop, Fishergate, Preston	39/42[A]	-/-[A]	-/-[A]	Day: Platform refurbishment and extension	NA	21	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
618362	Lloyd's Bank, Fishergate, Preston	33/36[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	23	R	T	-	-	-	-	-	
618363	Connaught House, Mount Street, Preston	35/37[A]	-/-[A]	-/-[A]	Day: Footbridge construction	NA	6	R	T	-	-	-	-	-	
618364	35 Winckley Square, Preston	40/46[A]	-/-[A]	-/-[A]	Day: General site works	NA	30	R	T	-	-	-	-	-	
618377	St Winifreds Presbytery, Winckley Square, Preston	35/36[A]	-/-[A]	-/-[A]	Day: General site works	NA	1	R	T	-	-	-	-	-	

Table 5: Assessment of construction noise at non-residential receptors

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
618355	Kingswood Property Insurance, 8 Victoria Buildings, Fishergate, Preston	52/56	-/-	1	-	Day: Platform refurbishment and extension	1	A4	T	-	-	-	-	-	
618362	Lloyd's Bank, Fishergate, Preston	33/36	-/-	-	-	Day: Footbridge construction	1	A4	T	-	-	-	-	-	
618363	Connaught House, Mount Street, Preston	35/37	-/-	-	-	Day: Footbridge construction	1	A4	T	-	-	-	-	-	
618368	4 Butler Street (Offices), Preston	58/65	-/-	6	-	Day: Platform refurbishment and extension	1	A4	T	-	-	D2	-	-	PSTN-C-N1
618370	Anderson Ashcroft, Fishergate House, 3 Fishergate Hill, Preston	47/51	-/-	1	-	Day: Footbridge construction	1	A4	T	-	-	-	-	-	
618371	EFL House (Offices), 10 - 12 West Cliff, Preston	46/48	-/-	-	-	Day: General site works	1	A4	T	-	-	-	-	-	

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
618372	Lancashire County Council (Offices), Fishergate Hill, Preston	66/69	-/-	10	-	Day: Platform refurbishment and extension	1	A4	T	-	-	D14	-	-	PSTN-C-N2
618373	Preston Central Premier Inn, Fox Street, Preston	35/39	-/-	-	-	Day: Footbridge construction	1	A3	T	-	-	-	-	-	
618375	Former Park Hotel Complex, East Cliff, Preston	59/61	-/-	4	-	Day: General site works	1	A3	T	-	-	D2	-	-	PSTN-C-N3
618376	East Cliff, Preston and committed development (Mapbook ref.: PSTN/012)	52/60	-/-	3	-	Day: Platform refurbishment and extension	1	A3	T	-	-	-	-	-	$
618377	St Winifreds Presbytery, Winckley Square, Preston	35/36	-/-	-	-	Day: General site works	1	A2	T	-	-	-	-	-	
618378	Cedar House Counselling Centre, Mount Street, Preston	33/35	-/-	-	-	Day: Footbridge construction	1	A3	T	-	-	-	-	-	
618379	G Hargreaves, South Cliff Street, Preston	54/55	-/-	1	-	Day: General site works	1	A4	T	-	-	-	-	-	

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
618380	5 Butler Street (Offices), Preston	58/65	-/-	6	-	Day: Platform refurbishment and extension	1	A4	T	-	-	D2	-	-	PSTN-C-N4
618381	Fishergate Court,(Offices and serviced apartments), Fishergate Hill, Preston	70/72	-/-	12	-	Day: Footbridge construction	1	A4	T	-	-	D14	-	-	PSTN-C-N5

Airborne sound: indirect effects

4.3.9 The assessment of construction noise and vibration indicates that significant indirect effects are unlikely to occur on residential or non-residential receptors in this area.

Airborne sound levels used in other assessments

4.3.10 There are no locations of interest to other disciplines in their assessments.

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