Transpennine Route Upgrade

Flint Street Compound Hub

Noise Impact Assessment

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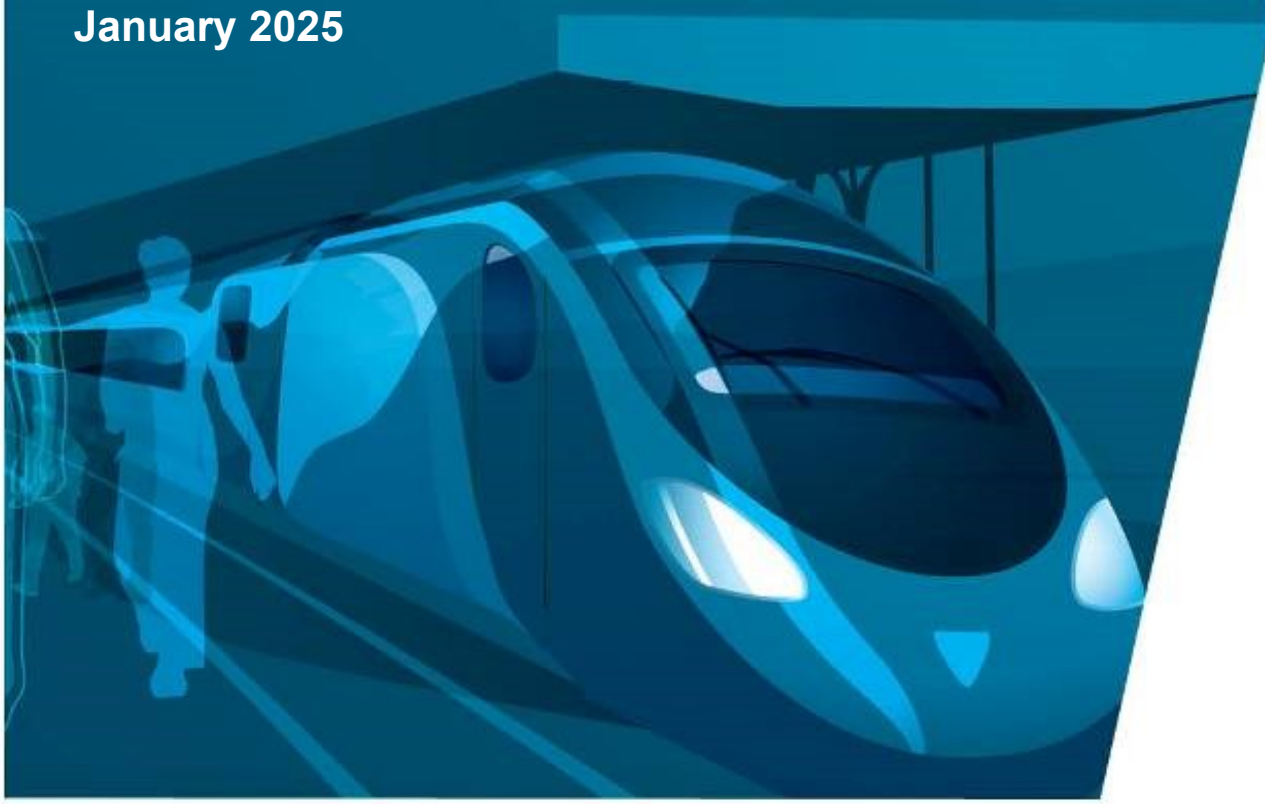
Network Rail

January 2025



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1.1.1. The TransPennine Route Upgrade (TRU) project is proposing to set-up a temporary compound located on Flint Street in Huddersfield UK, to facilitate parking and staff induction facilities. The compound will be used by the route section W3/4 project team to complete and commission TRU between Manchester and Leeds. The compound will be split into parking areas, office facility and a briefing/ induction room (see Figure 1).

1.1.2. The Proposed Scheme would be active to January 2029.

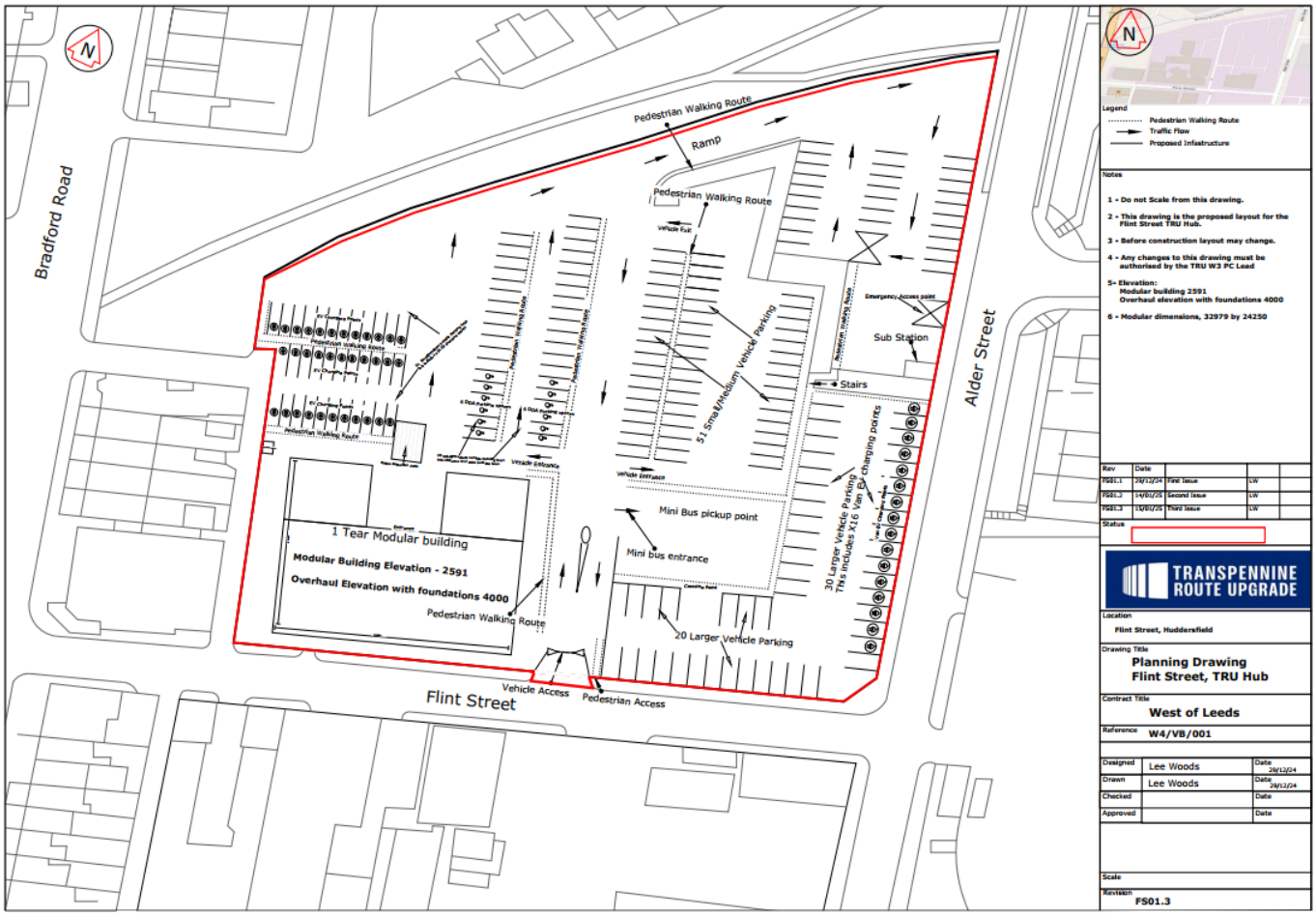

Figure 1 - Location of TRU Flint Street Compound

1.1.3. This report provides an initial high-level assessment of the potential noise risks associated with the compound use and identifies any outline noise control measures that may be considered appropriate.

2.1. POLICY

2.1.1. The Noise Policy Statement for England (NPSE) sets out the long-term vision of Government noise policy: to promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

2.1.2. The NPSE outlines three aims for the effective management and control of environmental, neighbour and neighbourhood noise:

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life; and
- Where possible, contribute to the improvement of health and quality of life.

2.1.3. In its aims, the NPSE uses the key phrases 'significant adverse' and 'adverse'. The NPSE states in its explanatory note that there are two established concepts that are currently being applied to noise impacts, which are:

- NOEL – No Observed Effect Level. This is the level below which no effect can be detected; and
- LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected.

2.1.4. The NPSE then extends this concept to include:

- SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.

2.2. CONSTRUCTION NOISE GUIDANCE

2.2.1. Although there are no statutory construction noise limits, BS 5228:2009+A1:2014 'Code of practice for noise and vibration on construction and open sites. Part 1 – Noise' (BS 5228-1) provides example criteria for deriving appropriate construction noise significance criteria. The standard explains that the assessor needs to consider other Scheme-specific factors, such as the number of receptors affected and the duration and character of the impact, to determine if there is a significant effect.

2.2.2. The NPSE notes that it is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to vary for different noise sources, receptors and times. Relevant SOAELs have been identified for the Scheme taking account of the sources of exposure and receptors.

2.2.3. The construction noise SOAEL is considered to be exceeded where the threshold values stated in Table 1 are exceeded based on the example criteria provided in Table E.2 of BS 5228-1, or where the ambient sound level is exceeded by 5 dB, whichever is higher.

Table 1 - Examples of time periods, averaging times and noise levels associated with the determination of eligibility for noise insulation

Day	Time (hours)	Averaging period, T	Noise insulation trigger level, dB LAeq,T
Mondays to Fridays	0700 – 0800	1 hour	70
	0800 – 1800	10 hours	75
	1800 – 1900	1 hour	70
	1900 – 2200	1 hour	65
	2200 – 0700	1 hour	55
Saturdays	0700 – 0800	1 hour	70
	0800 – 1300	5 hours	75
	1300 – 1400	1 hour	70
	1400 – 2200	1 hour	65
	2200 – 0700	1 hour	55
Sundays and Public Holidays	0700 – 2100	1 hour	65
	2100 – 0700	1 hour	55

A) All noise levels are predicted or measured at a point 1m in front of the most exposed of any windows and doors in any façade of any eligible dwelling

2.2.5. The following are considered significant time periods for SOAEL thresholds to be exceeded based on the guidance provided in BS 5228-1:

- A period of 10 or more days of working in any 15 consecutive days during construction; or
- For a total of 40 days or more in any 6 consecutive months during construction.

2.2.6. Significant adverse effects are deemed to occur at NSRs where both the SOAEL, as detailed in Table 1, and temporal criteria stated above are exceeded.

2.2.7. Network Rail will offer noise insulation or temporary rehousing if construction noise at NSRs is expected to be significant, in accordance with the criteria detailed above, and all reasonable measures to reduce noise have been incorporated.

2.2.8. NSRs considered for noise insulation or temporary rehousing will be regarded as ‘eligible’ NSRs. Those NSRs which are then deemed to be entitled to noise insulation or temporary rehousing, will be regarded as ‘qualifying’ NSRs. Calculations have been conducted to predict construction noise levels at all NSRs in the study area due to the works. NSRs that may experience significant adverse effects and would therefore be qualified have been highlighted.

Operational Traffic Guidance

2.2.9. Noise due to operational traffic on public highways and temporary diversions has been calculated in accordance with technical memorandum ‘Calculation of Road Traffic Noise’ (CRTN) and assessed in accordance with the Design Manual for Roads and Bridges LA 111 (DMRB).

2.2.10. DMRB provides guidance on the impact magnitudes resulting from changes in the road traffic noise. The magnitude of noise impacts in terms of noise change in the short-term are provided in Table 2.

Table 2 - Classification of impact magnitudes in terms of changes in noise level in the short-term

Magnitude of impact (adverse or beneficial)	Opening year/short-term noise change, dB
No change	0
Negligible	0.1 – 0.9
Minor	1.0 – 2.9
Moderate	3.0 – 4.9
Major	≥5.0

2.2.11. Significant adverse effects are deemed likely to occur where the short-term noise increase from construction traffic and/or temporary diversions is moderate or greater (≥3 dB) depending on context.

3.1.1. Baseline noise measurements were undertaken at Hammond Street, Fartown (Easting/Northing 414823/418222) as part of the Environmental Statement – Volume 3, Appendix 8: Noise and vibration of the 'The Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order'. This Information is replicated below.

- 60 dB $L_{Aeq,16h}$ during daytime periods; and,
- 49 dB L_{night} during night-time periods.

3.1.2. The site is located Off the A641 Bradford Road. The nearest noise sensitive receptor to the site is 292 Bradford Road located approximately 20m to the west of the site. Additional noise sensitive receptors are located around the sight and shown below in Figure 2.

3.1.3. Due to the close proximity to A641 Bradford Road and the TransPennine rail route, baseline noise levels at NSRs 1 and 2 are expected to be dominated by road and rail noise. Strategic noise maps, produced by the Department for Environment, Food and Rural Affairs (DEFRA)[1], indicate road traffic noise levels would be in the order of 70 dB $L_{Aeq,16hr}$ during the daytime period and 60 dB L_{night} during the nighttime period.

3.1.4. The NSRs in Figure 2 are considered representative of areas around the proposed compound. Table 3 outlines each NSR's property name, distance to the closest proposed site activity and the understood baseline noise condition taken from either recorded noise measurements or DEFRA noise maps.

[1] Available to view online at: http://www.extrium.co.uk/noiseviewer.html

Figure 2 - NSR Locations

Table 3 - NSR Information and Closest Works

NSR ID	Property Name	Closest Works	NSR Type	Assumed Baseline noise level
NSR 1	292 Bradford Rd	20m	Residential	70 dB $L_{Aeq,16hr}$ (Day) 60 dB L_{night} (Night)
NSR 2	294A Bradford Rd	33m	Residential	70 dB $L_{Aeq,16hr}$ (Day) 60 dB L_{night} (Night)
NSR 3	31 Leonard St	21m	Residential	60 dB $L_{Aeq,16hr}$ (Day) 49 dB L_{night} (Night)
NSR 4	1 Abbey Rd	23m	Residential	60 dB $L_{Aeq,16hr}$ (Day) 49 dB L_{night} (Night)

4.1. CONSTRUCTION NOISE

4.1.1. A specific construction plant list is not currently available, however, the following assumed plant list is based on that required for a similar TRU compound.

4.1.2. Table 4 presents the amount of plant operating at any one time and its resultant noise level at 10m for the installation of the Long term cabins which is considered the main activity associated with the construction of the compound.

Table 4 - Construction plant data

Plant Item	Number of	BS 5228 Ref	Sound Level at 10m	% on-time	Resultant Plant sound level at 10m	Activity Sound level at 10m
13T Excavator	*1*	C.2.7	70	10	60	65
Concrete wagons	*1*	C.4.22	76	5	63	
Low loaders	*1*	C.4.14	67	5	54	
100T mobile crane	*1*	C.3.28	67	5	54	

4.1.3. Noise levels have been predicted at the nearest NSRs in accordance with BS 5228-1. The results are provided in Table 5 assuming all plant is operating simultaneously. The SOAEL threshold during daytime for all NSRs is 75 $L_{Aeq,T}$, it is understood that works would be undertaken during daytime core hours only.

Table 5 - Predicted Noise levels at each NSR - Construction

Activity description	Working period	NSR 1	NSR 2	NSR 3	NSR 4
	Daytime SOAEL:	75	75	75	75
Activity 1 – Long Term Cabin Install	Daytime	62	58	62	61

No Exceedance	Day Exceedance

4.2. Operational Noise Assessment

Operational Traffic

4.2.1. There is potential for increased traffic movements during the operational phase of the compound. An assessment of potential traffic noise impacts is presented in Table 6.

Table 6 - Operational Traffic

Road Name	Total Current Traffic (AAWT,18h)	Current % HGV	Additional Operational Traffic	Additional Operational Traffic % HGV	Current Traffic Noise Level, dB	With Scheme Traffic Noise Level, dB	Noise Change, dB
Bradford Rd S	24548	2.1	36	0	69.4	69.4	0.0
Bradford Rd N	27716	2.1	272	0	70.0	70.0	0.0
Flint St W	5815	1.6	308	0	62.9	63.0	0.2
Flint St E	5815	1.6	92	0	62.9	62.9	0.1
Alder St N	8540	1.5	40	0	64.9	64.9	0.0
Alder St S	11883	1.6	52	0	66.2	66.2	0.0
Willow Lane East	8450	1.6	10	0	64.5	64.5	0.0
Alder St SS	3141	1.6	16	0	60.1	60.1	0.0
Hillhouse Lane	11250	1.8	26	0	66.0	66.0	0.0
A62 Leeds Rd S	12498	3.2	0	0	67.2	67.2	0.0
A62 Leeds Rd N	23613	2.8	22	0	69.6	69.6	0.0
Thistle Street	6755	2.9	4	0	64.8	64.9	0.0

4.2.2. Changes in road traffic noise due to the mobilisation and operation of the compound are expected to be negligible due to the relatively small number of vehicles using the site compared to the high volume of traffic on the surrounding road network.

Operational Noise

4.2.3. During operation there are likely to be several static items of plant on the compound site, commensurate with typical site compound use. These could include generators for welfare facilities and lighting towers. Given the distances to the nearest noise sensitive receptors and high baseline noise levels it is not expected that the use of construction plant on the site would result in potential significant effects from construction noise.

5.1.1. In developing the control measures, Best Practicable Means will be applied during all construction works to minimise noise at neighbouring residential properties and other sensitive receptors. In doing so, due consideration will be given to the recommendations contained within BS 5228:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites – Part 1: Noise', approved by the Secretary of State as the Code of Practice for noise and vibration control on construction and open sites.

5.1.2. The following outline control measures should be considered in carrying out the construction works:

- All plant and equipment will comply with the noise limit and noise marking requirements prescribed by the "Noise Emission in the Environment by Equipment for Use Outdoors. Regulations 2001" and the "Noise Emission in the Environment by Equipment for Use Outdoors (Amendment) Regulations 2005".
- All plant, equipment and noise control measures applied to plant and equipment shall be maintained in good and efficient working order and operated such that noise emissions are minimised as far as reasonably practicable. As far as reasonably practicable, any plant, equipment or items fitted with noise control equipment found to be defective will not be operated until repaired.
- All generators shall be super-silenced units. Where reasonably practicable, other fixed items of construction plant should be electrically powered in preference to diesel or petrol driven.
- Vehicles and mechanical plant employed for any activity associated with the construction works will, where reasonably practicable, be fitted with effective exhaust silencers and shall be maintained in good working order and operated in a manner such that noise emissions are controlled and limited as far as reasonably practicable.
- Machines in intermittent use will be shut down or throttled down to a minimum during periods between works.
- Whenever used, all percussion tools shall be fitted with appropriate mufflers or dampers of the type recommended by the manufacturers.
- Static noise emitting equipment operating continuously (generators, compressors etc) will be screened or housed within suitable acoustic enclosure, where appropriate.
- Noisy plant or equipment shall be sited as far away as possible from noise sensitive buildings. Wherever practicable, the use of noise barriers shall be employed.
- All personnel on site will undergo site specific inductions and briefings, to include any consent requirements and noise and vibration control measures. Where relevant, specific noise control measures will be incorporated into Works Package Plans.
- A programme of community liaison will be carried out, including notification of works and details of the complaints process.
- Noise from reversing alarms from delivery and construction vehicles will be controlled and limited as far as possible through the following means:
    - Designing the site layout to limit the need for reversing vehicles;
    - The use of banksmen for traffic management at site entrance gates and within site footprint;
    - Reversing alarms incorporating directional sounders, broadband signals self-adjusting output sounders or flashing warning lights; and
    - Setting reversing alarms to the minimum output noise level required for health and safety compliance.
- All works and operations on the site should be undertaken during weekday daytime periods where practicable to do so.

6.1.1. Changes in road traffic noise due to the mobilisation and operation of the compound are expected to be negligible due to the relatively small number of vehicles using the site compared to the high volume of traffic on the surrounding road network.

6.1.2. The noise predictions indicate that noise levels at the nearest NSRs would not exceed the SOAEL thresholds and the impacts would therefore not be significant during the construction and use of the compound.