

A12 Chelmsford to A120 widening scheme TR010060

6.5 First Iteration Environmental Management Plan Appendix K: Noise and Vibration Management Plan

APFP Regulation 5(2)(q)

Planning Act 2008

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

Volume 6

August 2022

Infrastructure Planning

Planning Act 2008

A12 Chelmsford to A120 widening scheme Development Consent Order 202[]

6.5 First Iteration Environmental Management Plan Appendix K: Noise and Vibration Management Plan

Regulation Reference	Regulation 5(2)(q)
Planning Inspectorate Scheme Reference	TR010060
Application Document Reference	TR010060/APP/6.5
Author	A12 Project Team & National Highways

Version	Date	Status of Version
Rev 1	August 2022	DCO Application

CONTENTS

Appendix K Noise and Vibration Management Plan	2
K.1 Background to the plan	2
K.2 Responsibilities	2
K.3 Legislation and consent requirements	2
K.4 Working hours	3
K.5 Noise insulation and temporary rehousing	5
K.6 Control measures	6
References	11

Appendix K Noise and Vibration Management Plan

K.1 Background to the plan

- K.1.1 The proposed scheme comprises improvements to the A12 between junction 19 (Boreham interchange) and junction 25 (Marks Tey interchange), a distance of approximately 24km, or 15 miles. The proposed scheme involves widening the A12 to three lanes throughout (where it is not already three lanes) with a bypass between junctions 22 and 23 and a second bypass between junctions 24 and 25. It also includes safety improvements, including closing off existing private and local direct accesses onto the main carriageway, and providing alternative provision for walkers, cyclists and horse riders (WCH) to existing routes along the A12, which would be removed. A detailed description of the proposed scheme can be found in Chapter 2 of the Environmental Statement [TR010060/APP/6.1].
- K.1.2 This Noise and Vibration Management Plan (NVMP), in outline, sets out the measures that will be used by the Principal Contractor (PC) to manage noise and vibration generated by the construction of the proposed scheme, which can affect residential occupants, users of non-residential noise and vibration sensitive buildings, settings of heritage sites and sensitive ecological sites and habitats.
- K.1.3 This management plan will be updated by the PC and included within the second iteration Environmental Management Plan (EMP), as appropriate and necessary, prior to commencement of works in accordance with the relevant Requirements in Schedule 2 of the draft Development Consent Order (DCO) [TR010060/APP/3.1] and the requirements of the first iteration EMP [TR010060/APP/6.5].

K.2 Responsibilities

- K.2.1 In relation to the control and management of noise and vibration, the PC would establish the appropriate roles and responsibilities for site staff in accordance with the roles and responsibilities set out in Chapter 2 of the EMP.

K.3 Legislation and consent requirements

- K.3.1 The Control of Pollution Act 1974 controls noise atmospheric pollution.
- K.3.2 Under the Control of Pollution Act, the local authority may serve notice imposing requirements as to how and when works to roads are carried out in order to limit construction noise arising from such works and having regard to the need to ensure the best practicable means are employed to minimise noise.
- K.3.3 The Control of Pollution Act sets out the procedure for applying to the Local Authority for consent prior to carrying out works with the intention of agreeing

noise and vibration limits in advance of works and avoiding the need for service of a notice for control of noise under the Control of Pollution Act.

- K.3.4 The Environmental Protection Act 1990 provides for the control of air pollution, land wastes, nuisance and radioactive substances in order to protect the environment. Part III of the Environmental Protection Act defines what may constitute a statutory nuisance (including noise prejudicial to health), what activities are specifically exempt, the procedures the local authority must follow for service of notices to deal with abatement of statutory nuisances and the penalties payable for conviction of causing a statutory nuisance. Local authorities have a duty under the Environmental Protection Act to inspect their area from time to time to detect statutory nuisances.
- K.3.5 Construction of the proposed scheme would be authorised by, and undertaken in accordance with, the DCO [TR010060/APP/3.1]. Except in the case of an emergency, before any works are undertaken outside of standard working hours and which comprise noise generating activities, the PC shall consider submission of an application to the relevant local authority for prior consent under section 61 of the Control of Pollution Act.
- K.3.6 In the event that works for which a section 61 consent has been applied for have to be rescheduled or modified, e.g. method or working hours change, for reasons not envisaged at the time of the section 61 consent submission, the contractor shall apply for a dispensation or variation from the relevant local authority, in advance of the start of those works.

K.4 Working hours

- K.4.1 The proposed scheme would comply with the working hours as set out in this plan.
- K.4.2 The PC would adhere to standard working hours as far as is reasonably practicable, except in the case of emergency or in respect of exceptions as set out below.

Standard working hours

- 07:30–19:00 Monday to Friday
- 07:30–18:00 on Saturday

- K.4.3 During the summer months, the standard daytime working hours would extend to make use of the longer daylight hours:

- 07:00–21:00 Monday to Friday

- K.4.4 In addition, there would be a period of up to an hour before and after standard working hours for site set up and close down. This would include, but not be limited to, activities such as deliveries, movements to place of work, unloading, general preparation works, maintenance and safety checking of plant and

machinery, and site clean-up, but would not involve operation of plant or machinery for construction works. These periods would not be considered an extension of standard working hours.

K.4.5 Work undertaken outside standard working hours, as well as on Bank Holidays, is considered off-peak working. There are certain exceptions where night-time, weekend or Bank Holiday working would be required; these are described below.

Night working hours

- 19:00–07:30 Monday to Friday
- 18:00–07:00 on Saturday

Sunday and Bank Holiday working hours

- 07:00–21:00 Sunday and Bank Holidays
- 21:00–07:00 Sunday and Bank Holidays

K.4.6 Activities requiring traffic management in place on the carriageway can only be carried out during off-peak working times (for example, restricting the A12 to single lane running). Night-time, weekend or Bank Holiday working hours would be required for the following activities:

- Installation, maintenance, modification and removal of traffic management measures
- Temporary and permanent widening of verges
- Online pavement construction which would require a hardening of the central reserve or verges to enable traffic to run in a narrow lane/contraflow arrangement during the day
- Upgrading the existing carriageway
- Carriageway and junction slip road tie-ins
- Emergency and planned carriageway maintenance and repair works
- Demolition of existing structures
- Construction of new structures and roadside technology (e.g. gantries)
- Piling
- Utility diversions.
- Any oversize deliveries
- Drainage works
- Technology commissioning

- Any activity interfacing with the Great Eastern Main Line (GEML)

K.4.7 Additionally, night-time, weekend, or Bank Holiday working hours would be required for the following activities:

- Security
- Maintenance of plant and equipment requiring 24/7 operation such as pumps

K.4.8 The two main compounds (including the concrete and asphalt batching plants) and satellite compounds would be in 24/7 operation at certain stages of the construction programme to facilitate off-peak working.

K.4.9 Aggregate processing facilities, which would be included in borrow pit areas and may include crushing, grading and washing of aggregates, would only be operational during standard working hours.

K.4.10 An assessment of construction noise has been undertaken and is included in Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1]. A detailed list of the construction activities, the plant and equipment, and working hours assumed for the various construction activities is presented in Appendix 12.4 of the Environmental Statement [TR010060/APP/6.3].

K.5 Noise insulation and temporary rehousing

K.5.1 In the event that it is not practical to mitigate construction noise onsite or reduce construction noise exposure to tolerable levels the PC would offer noise insulation or temporary rehousing to qualifying parties when:

- Noise levels are predicted or measured to exceed the relevant trigger level (as defined in BS 5228-1 (British Standards Institution (BSI) 2014a)) for at least 10 days out of any period of 15 consecutive days or alternatively 40 days in any six-month period at affected properties
- The property complies with all other requirements of the Noise Insulation Regulations 1975 (as amended)
- The property is lawfully occupied as a permanent dwelling
- With regards to noise insulation only, noise insulation does not already exist that is of an equivalent standard to that which would be allowed for under the Noise Insulation Regulations 1975 (as amended)

K.5.2 The framework to determine if any dwellings are eligible for noise insulation or the residents eligible for temporary rehousing would be described within the NVMP included within the second iteration EMP. This would include the noise limits used for determining eligibility and the frequency of such assessments.

K.5.3 A review of the noise assessment contained within Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1] would be undertaken during the construction phase once detailed information on construction programme, methodology, plant and equipment is available. This review would be used to validate that there are no materially new or materially different environmental effects compared to those as presented in the Environmental Statement.

K.6 Control measures

K.6.1 Appropriate controls would be applied to control or reduce impacts as far as reasonably practicable, based on the measures set out within this plan.

K.6.2 Noise and vibration from construction activities would be controlled by employing Best Practicable Means (BPM), as defined under section 72 of the Control of Pollution Act 1974 and section 79 of the Environmental Protection Act 1990.

K.6.3 BPM would consider the recommendations of BS 5228: Code of practice for noise and vibration control on construction and open sites (Parts 1 and 2) (BSI, 2014a and 2014b).

K.6.4 BPM would include the control of noise and vibration at source, where reasonably practicable, such as the provision of acoustic screens and the use of less intrusive alarms. Should the application of BPM at source not prove effective and noise exposure exceed the relevant trigger level (as defined in BS 5228-1), the PC may offer noise insulation and temporary rehousing as described above.

K.6.5 Local residents would continue to be informed of construction works programmes and emergency or unscheduled works which may affect them.

Control of noise

K.6.6 The following noise control measures would be implemented across all construction works where practicable:

- Site management teams would employ best practice and consider the timing, duration and phasing of construction activities to cause minimum nuisance to sensitive receptors where practicable and reasonable. For example, programming works so that potential nuisance causing works during off-peak working hours are minimised (taking into account the National Highways statutory duties under the Traffic Management Act 2004)
- To keep noisy activities away from sensitive receptors the following would be implemented at the two main compounds:

- Where concrete and asphalt batching plants are used within the junction 20b main compound, these would be placed as far from sensitive receptors as practicable
- Where practicable, concrete batching plant, offices and welfare facilities would be strategically placed towards the north of junction 22 main compound
- Seeded bunds would be used to provide noise and visual screening around the perimeter of the temporary works and construction areas, for example at junction 20b and junction 22 main compounds and borrow pits
- All ancillary plant such as generators, compressors and pumps would be positioned so as to cause minimum noise disturbance. If necessary, acoustic barriers or enclosures would be provided, where appropriate
- Where practicable, mains electricity, hybrid generators, hydrogen generators or battery powered equipment to facilitate run-on battery overnight would be investigated
- The use of diesel- or petrol-powered generators would be reduced where reasonably practicable. Where this is not possible consideration would be given to the site establishment to ensure that low noise generators are used where reasonably practical
- Working methods would be developed specific to the area and would consider use of equipment and methods of operations to minimise noise
- Alternative methods of piling to vibratory and hammer piling would be investigated during detailed design
- Where reasonably practical, fabrication of materials would be undertaken offsite
- All plant and machinery in intermittent use would be shut down in intervening periods between work or throttled down to a minimum
- Proper use of plant with respect to minimising noise emissions with regular maintenance would be undertaken
- Minimising the drop height of materials into hoppers, lorries or other plant
- Use of less intrusive alarms on vehicles, for example broadband vehicle reversing warnings
- Stakeholder liaison is an activity that has been ongoing and would continue leading up to and during construction

Control of vibration

- K.6.7 A review of the proposed construction activities identified three activities that were likely to generate levels of vibration with the potential to create vibration effects for receptors. These include but are not limited to the following:
- Structures piling
 - Retaining walls piling
 - Vibratory compaction
- K.6.8 The PC undertake an assessment to evaluate the potential for vibration (and thereby damage to nearby buildings and structures) prior to starting that phase of work onsite and where appropriate set specific trigger levels.
- K.6.9 Where considered necessary, the PC would undertake condition surveys of buildings and structures prior to works likely to create vibration.
- K.6.10 Where potential exists for vibration to arise as a consequence of construction activities, the PC would make efforts to minimise vibration effects during construction by implementing the following measures, where practicable:
- The appropriate selection of plant and method of works to minimise vibration as far as practicable, for example piling plant and rollers
 - Consideration of low vibration working methods, including non-vibratory compaction plant where practicable
 - To limit potential building damage or disturbance to residents, the use of compaction techniques other than vibratory compaction will be investigated for use within 10m of buildings
 - Where haul roads pass within 100m of a sensitive receptor they would be kept as smooth as practicable and a reduced speed limit would be considered if complaints are received about vibration
 - Stakeholder liaison is an activity that has been ongoing and would continue leading up to and during construction

Control of subcontractors

- K.6.11 Subcontractors whose works are likely to give rise to noise, vibration or other nuisance issues must develop and incorporate appropriate control measures within Risk Assessment and Method Statements for the works. These control measures would be communicated to the subcontractors' staff through the use of site inductions and toolbox talks.

Monitoring

Baseline monitoring

- K.6.12 The existing noise climate near the proposed scheme is dominated by road traffic noise, predominantly from the A12. The GEML is close to the alignment of the A12 in places. Rail noise would therefore contribute to the local noise climate in some locations. Other noise sources include road traffic noise from local roads and noise associated with urban and rural activities.
- K.6.13 A series of baseline noise surveys were undertaken in May 2021. These surveys were undertaken at 17 locations that are representative of individual or groups of sensitive receptors. The full details of the noise measurement survey, including the rationale for the selection of each location, are provided in Appendix 12.3: Noise Baseline Survey Results, of the Environmental Statement [TR010060/APP/6.3]. The noise survey locations are indicated in Figure 12.1 of the Environmental Statement [TR010060/APP/6.2].
- K.6.14 Noise surveys undertaken in May 2021 are considered sufficient to establish the baseline for construction, as the survey locations were selected with this requirement in mind. Should an amendment to the baseline be required (for example, due to a change in local noise environment) this would be discussed with the relevant Local Authority.

Construction monitoring

- K.6.15 Noise and/or vibration monitoring during construction would be carried out by the PC to ensure ongoing compliance with all controls and, where relevant, consent for the works.
- K.6.16 Monitoring would include physical measurements and observational checks, such as:
- Review of BPM and implementation of noise and/or vibration control measures; for example, location and condition of local noise screening
 - Verification that the identified noise and vibration mitigation measures are in place for activities where there is potential for likely significant effects to occur
 - Compliance with agreed hours of working
 - Measurement of noise and/or vibration levels; for example, attended noise and/or vibration measurements at the start of the high-risk activities to check levels against agreed thresholds
 - Monitoring noise and vibration procedures and practices to check adverse effects are no worse than those predicted
 - Where applicable, review of compliance with specific consent conditions and noise assessment

- K.6.17 In instances where a member of the public has made a noise and/or vibration complaint, the complaint would be registered in accordance with the site complaints procedure. An investigation would be undertaken by the PC to review the noise and/or vibration control measures and noise and/or vibration levels.
- K.6.18 Given the scope of the works and the number of potentially affected receptors it is not proposed to permanently measure noise and/or vibration levels at any single location throughout the duration of the works.
- K.6.19 The location and duration of noise and/or vibration measurements to be taken during construction of the proposed scheme would be identified prior to starting that phase of work onsite and included within the NVMP included within the second iteration EMP.
- K.6.20 The reporting requirements would be included within the NVMP included within the second iteration EMP.
- K.6.21 It is anticipated that noise measurements would be undertaken for works likely to cause significant effects as identified within Section 12.11 of Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1].
- K.6.22 Suitably trained staff would be tasked with undertaking the noise and/or vibration measurements onsite where required.
- K.6.23 Where appropriate the results of noise level measurements would be compared with the noise assessment and results of vibration level measurement would be compared with specific trigger thresholds.
- K.6.24 If noise and/or vibration levels exceed agreed thresholds the PC would:
- Determine as far as is reasonably practicable the activities/plant responsible for the exceedances and if this is due to the construction of the proposed scheme
 - Review BPM and implementation of noise and/or vibration control measures
 - Ascertain if there are any reasonably practicable means of reducing the measured construction noise and/or vibration levels

References

British Standards Institution (2014a). BS 5228-1:2009 + A1:2014 Code of practice for Noise and Vibration Control on Construction and Open Sites Part 1 – Noise.

British Standards Institution (2014b). BS 5228-2:2009 + A1:2014 Code of practice for Noise and Vibration Control on Construction and Open Sites Part 2 – Vibration.