

EWR Alliance

Title: Code of Construction Practice

Document Number: 133735-EWR-EMP-EEN-000004

Date: February 2020



East West Rail Phase 2

Code of Construction Practice

Date: February 2020

Notice

This Code of Construction Practice was produced by the Alliance for the specific purpose of the Alliance

This Code of Construction Practice may not be used by any person other than the Alliance without the Alliance's express permission. In any event, Alliance accepts no liability for any costs, liabilities or losses arising as a result of the use of or reliance upon the contents of this report by any person other than the Alliance.

Document History

QR Code

Level 2 and 3 IMS Document Authorisation		Name
Prepared By	Author	P Collins
Technical Review	Subject matter expert	S Ricks
Checked By	Quality Manager	J Lowe
Approved By	Functional AMT approval	R Voigt
Approved By	Cross-functional AMT approval	I Johnson
Endorsed By	Alliance Director	M Cuzner

eB Ref	133735-EWR-EMP-EEN-000004
Revision*	B01
Changes*	Updated to address comments received from TWAO consultation

*The history of this document can be found on eB.

Contents

Section	Page
1 Introduction	1
1.1 Code of Construction Practice Requirement	1
1.2 Purpose of the document	1
1.3 Compliance with legislation, standards and guidance	1
1.4 Construction environmental management plan	1
1.5 Roles and responsibilities	2
2 General Requirements	3
2.1 Community consultation and engagement	3
3 General site operations	4
3.1 Working hours	4
3.2 Site layout and housekeeping	4
3.3 Site lighting	5
3.4 Emergency planning, response and access	5
3.5 Fire prevention and control	5
4 Land use and agriculture	6
4.1 Land use	6
4.2 Agriculture	6
5 Air quality	7
5.1 General requirements	7
6 Cultural heritage	9
6.1 General requirements	9
6.2 Buried archaeological remains and archaeological earthworks	9
6.3 Unexpected discoveries of heritage assets	9
6.4 Built heritage	9
7 Ecology and nature conservation	10
7.1 General requirements	10
7.2 Measures to reduce potential impacts on ecological resources	10
7.3 Protected sites, species and important habitats	11
7.4 Invasive and non-native species	11
8 Noise and vibration	12
8.1 General requirements	12
8.2 Section 61 control of pollution act	12
8.3 Construction vibration	13
9 Geology, soils and contamination	14
10 Landscape and visual impacts	15
10.1 General requirements	15
10.2 Compounds	15
11 Water quality and flood risk	16

11.1	General requirements	16
11.2	Biosecurity	17
11.3	Specific Requirements	17
12	Traffic and transport	21
12.1	General requirements	21
13	Resource use and waste management	22
13.1	General requirements	22
13.2	Waste hierarchy	22
13.3	CL:AIRE Definition of Waste: Code of Practice	22
13.4	Site Waste Management Plan	22
13.5	Duty of care	23

Abbreviations

Abbreviation	Definition
WSI	Written Scheme of Investigation
AQMA	Air Quality Management Area
BPM	Best Practicable Means
CDM	Construction (Design and Management) Regulations 2007
CEMP	Construction Environmental Management Plan
CIRIA	Construction Industry Research and Information Association
CL:AIRE	Contaminated Land: Applications in Real Environments
CLR11	Contaminated Land Report 11
CoCP	Code of Construction Practice
COPA	Control of Pollution Act
EA	Environment Agency
EcMP	Ecological Management Plan
EMS	Environmental Management System
EPA	Environmental Protection Act, 1990
EPSL	European Protected Species Licence
ES	Environmental Statement
FERP	Flood Emergency Response Plan
FOC	Freight Operating Company
HWG	Highways Working Group
HGV	Heavy Goods Vehicle
LA	Local Authority
MoU	Memorandum of Understanding
PMW	Precautionary Method of Working
PPE	Personal Protective Equipment
PPG	Pollution Prevention Guidelines
IRP	Incident Response Plan
SBI	Site of Biological Interest
SWMP	Site Waste Management Plan
TB	Task Brief
TOC	Train Operating Company
TWAO	Order (planning permission) obtained under Part 1 of the Transport and Works Act 1992
WPP	Work Package Plan

1 Introduction

1.1 Code of Construction Practice Requirement

This Code of Construction Practice (CoCP) is an update to that provided with the Environmental Statement (ES) accompanying the Network Rail (East West Rail Bicester to Bedford Improvements) Transport and Works Act Order (TWAO) Application. It has been updated to incorporate comments made by stakeholders during the Public Inquiry process and to discharge TWAO Planning Condition 10 for all local authorities and all development stages: *No stage of the development is to commence within the area of a Local Planning Authority until a Code of Construction Practice (“CoCP”), which incorporates the means to mitigate the construction impacts identified in the Environmental Statement (including the tree protection measures and ecological management measures contained within Volume 3, Appendix 2.1), has been submitted to and approved in writing by the relevant local planning authority. The development must be implemented in accordance with the approved CoCP and the relevant plans or programmes.*

1.2 Purpose of the document

The CoCP acts as an environmental management system (EMS) framework, under which the construction of the Project will be undertaken in relation to the environment.

The CoCP sets out:

- The context and underlying principles of environment management for the EWR Alliance
- The principal obligations on the EWR Alliance when undertaking the construction of the Project
- The details of, or references to, the construction phase mitigation measure, plans and processes that will be used to ensure compliance on site

1.3 Compliance with legislation, standards and guidance

The Alliance will comply as a minimum with applicable environmental legislation at the time of construction, together with any additional environmental requirements imposed by the TWAO. For this reason, the applicable statutory requirements may be referenced but are not repeated within this CoCP. Further guidance on specific areas will be considered from industry best practice guidance documents as set out in each discipline section of this CoCP. The references to guidance documents within this document are not intended to be exhaustive.

This CoCP has been produced in conjunction with the ES and Further Environmental Information, submitted November 2018, with the intention of ensuring that likely significant construction effects that are reported in the ES will either be avoided or mitigated. Site-specific controls, which will be included with the Construction Environmental Management Plan (CEMP) in accordance with this CoCP, will be developed during the detailed design stage.

1.4 Construction environmental management plan

The environmental management requirements for construction set out in this CoCP will be implemented through a CEMP.

The objective of the CEMP is to provide a documented procedure to ensure the relevant environmental issues are effectively managed and the requirements of the TWAO are adequately implemented on site.

The CEMP will meet the requirements of Network Rail’s Standard NR/L2/ENV/015 (Contract Requirements Environment), Issue 6, 2011. This standard sets the contractual obligation for the EWR Alliance to produce and implement a CEMP as well as the mandatory contents to be included; this CoCP complements and does not conflict with this standard. The CEMP in its entirety will not be submitted for approval to any external body other than Network Rail, although key plans and programmes that will be referenced in the CEMP will be submitted for approval as required by the TWAO planning conditions.

The CEMP will provide the detail of the delivery of management controls on site, will reflect the construction methodology and will include the following:

- Sustainability Policy, Strategy and Objectives
- Legal Requirements
- Any other relevant environmental consents, commitments, undertakings or planning conditions
- EWR Alliance roles and responsibilities in implementing the CEMP
- Overarching processes and control measures
- Assurance and continual improvement process (including audit, inspection, monitoring and reporting)
- Training awareness and competence
- Topic specific environmental management controls and delivery plans

1.5 Roles and responsibilities

Network Rail has appointed the EWR Alliance to deliver the design and construction of the Project. The Alliance will implement an Integrated Management System (IMS) that will incorporate the requirements of this CoCP. As part of the IMS, the following amongst others will be established to provide assurance with the IMS and therefore the CoCP:

- Roles, accountabilities and responsibilities
- Arrangements for auditing
- Training programme and competence assessment

2 General Requirements

2.1 Community consultation and engagement

A Community Relations/Liaison Manager will serve as a liaison between the EWR Alliance and the community throughout the construction phase.

A Community Relations/Liaison Officer will provide support for the households and community groups predicted to experience multiple impacts during the construction phase, as identified in the cumulative impact assessment of the ES.

External Communications will be managed in accordance with Network Rail Standard NR/L3/MTC/MGO194: Communicating with the Public. Measures to be implemented include:

2.1.1 Website

Information will be made available online including Project information updates and contact details for enquiries and complaints.

2.1.2 Notification of works

Advanced notifications of works to local residents, businesses and other stakeholders that may be affected by construction will include, as appropriate:

- Details of the work to be undertaken
- Key dates including duration of the work
- Working times
- Project Helpline number

Targeted communications strategies will be developed for households and community groups that are likely to experience multiple impacts during the construction phase, which will be developed in consultation with representatives of the most affected communities.

2.1.3 Project Helpline

The EWR Alliance will utilise a 24-hour helpline that will receive and process any enquiries received regarding construction activities. The helpline number will be widely promoted on site signage/ hoardings, printed external communications and websites associated with the Project.

All calls to the helpline will be logged along with any associated responses. Each record will only be closed once it has been resolved. This information will be available in a format that will allow analysis of the data and sharing with interested stakeholders, if requested. The helpline number will be advertised on all correspondence and widely advertised on site hoardings and websites linked to the Project.

3 General site operations

3.1 Working hours

Working hours will differ depending upon the nature of the construction activity being undertaken, the location and constraints imposed by existing railway operations.

Core working hours will be:

- 0700 – 1800 Monday to Friday
- 0700 – 1600 Saturday

Non-standard working hours will also be utilised in connection with any construction works that would interface with the existing operational railway for example work during possession, work at stations, track laying and deliveries of plant and materials by rail. These works may be undertaken at any time, including during the night, weekends and bank holidays and could involve working on a 24-hour, seven days a week basis.

The EWR Alliance may exercise an extended working hours regime to take advantage of daylight hours for activities e.g. earthworks that are seasonal or weather dependant. When required the relevant Local Authorities will be consulted in advance and notified. During the winter months, the EWR Alliance may shorten working days in consideration of health and safety for construction workers and the public.

Some specific construction activities will require extended working hours. These may include concrete pours or piling. Surveys may also need to be undertaken outside of core working hours.

Activities outside core working hours that could give rise to disturbance will be kept to a reasonably practicable minimum.

In the case of work required in response to an emergency or which, if not completed, would be unsafe or harmful to the permanent works, the general public or the environment, the Local Authority will be informed, as soon as reasonably practicable, of the reasons for and likely duration of the works. An example of the type of work envisaged would include where unexpected ground conditions are encountered whilst excavating and require immediate stabilisation.

Deliveries by road will, wherever reasonably practicable, be undertaken in standard working hours. However, there may be occasions where special arrangements are required in order to receive abnormal loads. These will be arranged in line with the requirements of the relevant authorities.

3.2 Site layout and housekeeping

A good housekeeping policy will be observed at all times. Measures will be employed to reduce the likelihood of an environmental incident or nuisance occurring. Where appropriate these will include, but not necessarily be limited to, the following:

- All compounds will be fenced/ fully secured with appropriate signage and access arrangements to prevent access by unauthorised people and livestock
- Adequate welfare will be available for all staff and the site will be arranged to avoid the need for staff or vehicles to congregate at the site entrance
- The EWR Alliance will display the Project Helpline contact number at appropriate locations on the boundaries of the site(s)
- The Project Area and compounds will be kept in a tidy, safe and ordered manner
- Site accommodation will be located to avoid overlooking residential property wherever reasonably practical
- Temporary offices, plant, machinery and storage of materials and waste will be located, where practicable, to avoid flood risk areas
- Waste management practices will include adequate storage of waste in appropriate containers, to be covered where there is the risk of windblown littering and the regular removal of food waste to prevent infestation of pests and vermin
- Use of less intrusive reversing alarms, where safety requirements permit

- Fixed site plant and temporary offices will be powered by mains electrical sources wherever suitable utility connections can be made
- Smoking areas will be located away from the site boundary
- Open fires will be prohibited at all times

3.3 Site lighting

Artificial lighting has the potential to adversely impact on lineside neighbours and wildlife during construction activities. Wherever practicable, night-time work will be avoided. However, where it is necessary, the following control measures will be applied to a reasonably practicable minimum:

- Direct lights away from any sensitive receptors such as residential neighbours and known areas of nature conservation significance, such as badger setts and linear habitat features such as hedgerows, woodland and watercourses (known bat commuting habitats)
- Lights will be shielded/cowled and lux levels reduced as much as reasonably practicable, without compromising safe delivery of the works
- Lighting will be dimmed or switched off when not in use if there are no adverse health and safety implications
- Where appropriate, lighting to site boundaries will be provided and illumination will be sufficient to provide a safe route for the passing public
- Lighting will also be positioned so as to prevent unsafe interference (dazzling or glare) with railway operations, road traffic signals and signing and passing motorists

3.4 Emergency planning, response and access

The EWR Alliance has an emergency response procedure structure in place to handle all environmental incidents. All environmental incidents will be first identified and reported in accordance with the Environmental Incident Response Plan which is included within the CEMP.

Local response procedures will be prepared in consideration of the work sites, compounds and access and egress arrangements and documented within all Work Package Plans. The procedures will consider the site-specific hazards including all environmental constraints and the inventory of substances held at the site. The local notification procedures (including contact details) will be detailed including the available site access points which are suitable for emergency vehicles.

The site-specific planning will include a consideration of the potential for flooding and inundation during rain events at each compound and storage area, this will be documented in the site-specific Emergency Response Plan where the risk requires one.

The most serious environmental incidents will be escalated to be managed in accordance with the Major Incident Management Plan. Adequate training will be provided so that site staff are aware of the procedures and are competent at implementing them, if required. Staff will receive full briefings on all local arrangements at the point of work.

3.5 Fire prevention and control

All construction sites and associated accommodation and welfare facilities will have in place appropriate plans and management controls to prevent fires.

The site fire plans will be prepared, regularly reviewed, and updated as necessary, and will have due regard to the following documents:

- CFP A-E21:2009 Fire Prevention on Construction Site
- Safety in Construction Work (HSG 168)

4 Land use and agriculture

4.1 Land use

Communication will continue with affected land owners, occupiers and agents, as appropriate, so that disruption caused by the construction works is reduced to a reasonably practicable minimum. In advance of construction works taking place, advance notification will be given.

Construction working areas will be managed so that access to residential properties, community facilities and commercial enterprises are maintained. Where the construction land take results in the temporary loss of car parking spaces, alternative parking spaces will be identified and secured for the duration of the works.

Reinstate any land which is used temporarily during construction to its previous land use, unless otherwise authorised under any subsequent consent.

4.2 Agriculture

The Project Area will be fenced off where there is the risk of construction staff and vehicles accessing to adjacent areas of agricultural land. This will prevent accidentally extending the temporary land take, damage of adjacent land or disturbance to livestock.

Arrangements will be put in place to ensure that, wherever practicable, farm access is maintained during the construction works, as well as the services required to maintain the operation of the farm such as water supplies, drainage and other farm infrastructure. Where level crossings will be closed, this will only take place following provision of alternative access, where required. Early consultation will be undertaken with landowners to locate services and drainage to ensure that these are protected or remediated during the construction period.

Farm boundaries such as hedgerows, fences and walls affected during construction will be reinstated.

Appropriate measures will be implemented, in accordance with the Department for Environment, Food and Rural Affairs' (Defra) *Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009)*, in relation to undertaking works on or adjacent to agricultural land.

Measures will be adopted during construction to control the spread of dust, contamination, invasive species, weeds and soil-borne, crop and animal diseases.

5 Air quality

5.1 General requirements

The Alliance will, as far as reasonably practicable, control and limit emissions to the atmosphere in terms of gaseous and particulate pollutants from vehicles and plant used on site, and dust from demolition and construction activities (including use of public highways). The Alliance will identify potential sources of air pollution and apply appropriate measures. A summary of key receptors and measures to reduce potential impacts on air quality are listed below.

Best Practicable Means (BPM) will be employed to reduce risk of soiling of property and effects on human health and vegetation from dust emissions.

Mobile plant will be designed, operated and permitted in accordance with DEFRA's Process Guidance Note 3/16(12) for Mobile Crushing and Screening. Where necessary, mobile plant will be regulated under the Environmental Permitting (England and Wales) Regulations 2010 (as amended) via an environmental permit.

If on-site concrete batching is employed, such operations will be undertaken using enclosed plant and in accordance with DEFRA's Process Guidance note 3/1 and permitted under the Environmental Permitting (England and Wales) Regulations 2010 (as amended). These will be placed as far from sensitive receptors as reasonably practicable.

5.1.1 Construction dust

The CEMP will include BPM to control emissions of dust during construction of the Project. These mitigation measures are based on those that are 'highly recommended' for a 'low risk' construction site according to the IAQM (2014) *Guidance on the assessment of dust from demolition and construction Version 1.1 (as amended in 2016)*. The CEMP will include additional mitigation, based on the IAQM (2014) guidance, for any locations of 'medium' and 'high' risk sites/activities identified.

5.1.2 Monitoring

The CEMP will include an appropriate dust monitoring regime to provide assurance of the effective application of the BPM. The type of monitoring required will be dependent on the risk of dust impacts, outlined in the IAQM (2014) *Guidance on the assessment of dust from demolition and construction Version 1.1 (as amended in 2016)*. The Alliance will:

- Conduct inspections on and off the site, including at the site boundary, sensitive receptors and public roads within 100 m as appropriate, to monitor compliance with the CEMP.
- Make available the inspection log/monitoring data to the local authority(ies) upon request.

In areas identified as medium to high risk, the frequency of monitoring may need to increase, and additional monitoring e.g. using dust deposition gauges may be required

5.1.3 Preparing and Maintaining the Site

In order to prepare (and maintain) the site for/during construction the Alliance will, as far as is reasonably practicable:

- Plan site layout so that temporary stockpiles, machinery and dust causing activities are located away from receptors
- Put in place measures to avoid site runoff of water or mud
- Remove materials that have a potential to produce dust from site as early as practicable, unless being re-used on site (in which case they will be covered or seeded as described below)
- Cover all vehicles carrying soil materials with dust emission potential during internal movements on site
- Seek to reduce drop heights from excavators to other vehicles (e.g. dumpers or eight wheeled tippers)
- Provide an appropriate water supply is available for dust suppression/mitigation
- Implement appropriate speed limits on haul roads at an appropriate level dependent upon road surface

- Vehicles to switch engines off when stationary and no idling
- Avoid the use of diesel powered generators using mains electricity or batter powered equipment

5.1.4 Demolition

The Alliance will, where reasonably practicable:

- Put in place effective water suppression during demolition operations
- Avoid explosive blasting, using appropriate manual or mechanical alternatives
- Where there is a high risk of dust impacts, the Alliance will soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where reasonably practicable, to provide a screen against dust).

5.1.5 Measures Specific to Earthworks

The Alliance will, where reasonably practicable:

- Strip topsoil as close as reasonably practicable to excavation/earthworks activity to avoid risks associated with run-off or dust
- Compact stored materials with the exception of top soil and subsoil on sites that will be restored to agricultural or other landscaping
- If materials are being re-used on-site, long term soil stockpiles will be covered or seeded to prevent wind-whipping

5.1.6 Measures Specific to Construction

The Alliance will, where reasonably practicable:

- Avoid scabbling (roughening of concrete surfaces) if reasonably practicable

5.1.7 Measures Specific to Trackout

The Alliance will, where reasonably practicable:

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site
- Avoid dry sweeping of large areas
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport
- Record all inspections of all Construction Access Routes and haul roads and any subsequent action taken to prevent dust emissions
- Implement controls where necessary to remove accumulated dust and mud from vehicles prior to leaving the site

6 Cultural heritage

6.1 General requirements

Archaeology fieldwork for buried archaeological remains, archaeological earthworks and built heritage will follow the Heritage Delivery Strategy and any Written Scheme of Investigation (WSI) as submitted and approved by the relevant local planning authority (TWAO Planning Condition 9). The requirements of the Heritage Delivery Strategy and WSIs will be included in the CEMP.

6.2 Buried archaeological remains and archaeological earthworks

The archaeological field evaluation (as detailed in the Heritage Delivery Strategy and any WSI) will aim to determine the extent, depth, function, chronology and relative significance of any archaeological remains, and if necessary will serve to inform any necessary mitigation and recording of assets prior to their loss. Any archaeological fieldworks will be undertaken in accordance with the approved WSI by a suitably qualified person, and in line with industry best practice and guidance.

6.3 Unexpected discoveries of heritage assets

Should artefacts and/or remains of potential archaeological interest be located unexpectedly at any time, these will be immediately reported in line with the EWR Alliance Incident Response section of the CEMP.

6.4 Built heritage

A systematic programme of recording to Historic England standards will be applied to important built heritage assets that are to be removed, in order to maintain an archive record of the assets.

7 Ecology and nature conservation

7.1 General requirements

Ecological management measures will be outlined in the CEMP and these will include the following, as appropriate:

- Summary of features of interest for known areas of nature conservation interest identified in the ES that may be affected by construction
- Outline of ecological mitigation measures to be implemented during construction
- Information on the requirements of any Protected Species Licences that must be adhered to throughout construction
- Procedure to follow in the event of an unexpected discovery or disturbance of a protected species or habitat (included in the incident response procedures)
- A written Ecological Management Plan (TWAO Planning Condition 12) outlining the management of the ecology compensation sites, which will be submitted to and approved by the Local Planning Authority.

7.2 Measures to reduce potential impacts on ecological resources

The measures outlined in other sections of this CoCP will also help to reduce potential impacts on ecological resources. These sections include:

- Air quality: measures to reduce dust
- Landscape: measures to protect landscape features including trees and hedgerows as well as reinstatement of temporary land take
- Water resources
- Noise and vibration
- General site operations: measures to reduce the impact of site layout and lighting

In line with the mitigation hierarchy, the project has been designed to avoid or reduce ecological impact wherever reasonably practicable and construction works will continue to seek out ways to avoid and reduce the loss of habitat/vegetation within the Project Area.

The construction programme will be developed with these requirements in mind and will be cognisant of seasonal constraints.

An Ecological Clerk of Works shall be appointed by the EWR Alliance to work directly with the construction teams. They will be responsible for providing technical advice and site assurance of adherence to the controls highlighted in the CEMP.

All construction works will be subject to a site specific assessment that will identify sensitive ecological receptors. A Precautionary Method of Working (PMW) will be employed, where necessary, appropriate to the risks identified. The PMW will be issued in the form of briefings to the site supervisors to enable any controls to be implemented and measures required will be recording in site paperwork.

A programme of monitoring surveys for mobile protected species will be carried out as necessary, such as preconstruction checks for badgers. Excavations will be covered at night or a suitable means of escape provided for any animal which becomes trapped (such as ramps or sloped sides).

To reduce the lag between habitat losses within the construction areas and the creation of new habitat in mitigation areas, the EWR Alliance has established several advanced mitigation sites already in advance of construction works and will continue to do so, wherever reasonably practicable.

All habitats lost as part of the temporary construction works footprint shall be restored.

7.3 Protected sites, species and important habitats

The location of any protected sites or important habitats will be included in the CEMP along with measures to protect them during construction.

The EWR Alliance will obtain, where necessary, protected species licences, permits or consents. The requirements of these will be incorporated into the CEMP and compliance will be audited in line with the process set out in that document.

7.4 Invasive and non-native species

Appropriate measures for the treatment/control of invasive, non-native species (plants and animals) and injurious weeds will be included in the CEMP and implemented where required.

For species listed in Schedule 9 of the Wildlife and Countryside Act, 1981, appropriate construction, handling, treatment and disposal procedures will be implemented. These procedures will reflect the requirements of both plants and animals.

Toolbox talks will be developed and implemented for the construction teams to raise awareness of invasive and non-native species that may be found within the Project Area and the process to follow if they are identified in areas not previously expected.

8 Noise and vibration

8.1 General requirements

The EWR Alliance will control and limit noise and vibration levels, so far as is reasonably practicable, so that residential properties and all other sensitive receptors are protected from excessive noise and vibration levels arising from the construction activities.

The EWR Alliance will demonstrate and implement Best Practicable Means (BPM) throughout all work associated with the project. BPM are defined in section 72 of the Control of Pollution Act 1974 and Section 79 of the Environment Protection Act 1990 as those measures which are 'reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications'.

The potential noise and vibration effects of the construction works will be managed by the use of control measures, as suggested by BS5228. General principles for the control of noise and vibration during the construction works will include wherever reasonably practicable, as appropriate:

- Specific risk assessments will be carried out for activities likely to create exceedances of the Significant Observed Adverse Effect Level (SOAEL) noise and/or vibration levels, and any controls identified as part of this assessment will be included in the work package plan
- Only plant which complies with the relevant EU/UK noise limits applicable to that equipment or is in no way noisier than would be expected from the noise levels quoted in BS 5228: 2009+A1:2014 will be used
- Inherently quiet plant will be used where appropriate. All compressors and generators will be "sound reduced" models. Where the use of audible warning systems are required, such as reversing or mobile elevating work platform operating systems, broadband alarms will be used. Where traditional alarms are unavoidable, equipment will be in good working order and operators suitably trained to ensure that unnecessary triggering of alarms does not occur
- All plant and equipment will be examined on a daily basis for defects prior to the start of works and under no circumstances should defective plant be used
- Ancillary plant such as generators, compressors and pumps will be positioned away from sensitive receptors
- Use of mains electricity, batteries and other energy sources rather than diesel generators
- Use of burning equipment in preference to cold cutting
- Machines in intermittent use should be shut down in the intervening periods between work, or where this is impracticable, throttled down to a minimum
- Access roads, haul roads and construction sites and compounds would be designed to minimise the need for reversing alarm
- Use of localised noise barriers around stationary work sites or plant
- Ensuring that staff and operatives are briefed on the requirement to manage nuisance from site activities, via tool box talks
- Monitoring of noise and vibration levels at key locations to ensure potential impacts are kept to reasonable levels

8.2 Section 61 control of pollution act

The EWR Alliance will manage construction works under a notification process to be included in the CEMP, and where required, Section 61 agreements (of the Control of Pollution Act 1974).

The consent application will contain, as appropriate:

- Location and nature of short-term activities which will involve construction noise likely to exceed the thresholds and the measures which will be taken to reduce the related noise and its duration
- Any potential noise generating activities which may be required outside of the stated normal working hours for construction and the measures and procedures to be adopted to limit potential nuisance

- Monitoring as appropriate where construction works with higher noise-generating potential proceed in proximity to identified sensitive locations

Where all other forms of mitigation under BPM have been considered and implemented and trigger levels for noise disturbance still exist, the Alliance will apply a discretionary noise insulation and temporary rehousing policy in compliance with the stipulations laid out in British Standard (BS) 5228. In addition, those that qualify for insulation under the Noise Insulation Regulations will be offered this before the start of construction works.

The Section 61 Consent will set out the monitoring regime to be adopted during the works as the mechanism to validate the predictions made in assessing the noise and vibration generated by the construction activity. The monitoring regime will ensure that compliance with BPM and any consented noise levels are adhered to and the EWR Alliance will audit these in collaboration with the Local Authorities.

8.3 Construction vibration

For those few properties reported within the ES where there is an identified risk of exceeding the cosmetic damage criterion, a building condition survey and vibration monitoring will be undertaken. If cosmetic damage is noted, appropriate repairs to return the building to its original condition will be arranged.

9 Geology, soils and contamination

All areas of the Project have been subject to a scheme of ground investigation to assess the background levels and potential presence of contaminants within the ground, groundwater and surface waters. A contaminated land risk assessment which shall include ground investigation and monitoring (including groundwater and gases) will be submitted to the Local Authorities for approval (TWA0 Planning Condition 11).

In relation to geology, soils and land contamination, the following construction phase controls will be implemented where reasonably practicable (contamination of adjacent agricultural land, air or water are covered in the agriculture and land-use, air quality and water resources sections and not repeated here):

- Any areas of contamination affected by the Project will be remediated by specialist contractors
- Construction workers will be provided with appropriate Personal Protective Equipment (PPE) and informed by risk assessment to limit their exposure to contamination
- Hand washing facilities will be made available to site operatives, site rules will be created insisting on hand washing prior to breaks and at the end of the working day, and eating and drinking will be limited to site welfare facilities during break periods
- A procedure will be included within the Pollution Prevention and Emergency/Incident Control Plan (part of the CEMP) to manage previously-unidentified contaminated material that is encountered during the works
- Storage areas will be identified for materials and soil arisings that demonstrate evidence of contamination (e.g. visual or olfactory). The storage areas will comprise of covered skips, or segregated stockpile (sheeted where appropriate, or sealed and banded where too large to sheet or there is risk to the operational rail) placed on hardstanding or sheeting pending its removal or treatment
- Appropriate best practice techniques and guidance such as CLR 11 and the Environment Agency (EA) guidance on Piling into Contaminated Land will be adhered to in order to prevent pollution being introduced or mobilised as a result of the Project
- Where material is removed due to its chemical unsuitability for retention at the site, full records will be maintained and a verification report prepared as required by the Definition of Waste: Code of Practice (DoWCoP) (see Section 13).
- Piling risk assessments will be prepared where piling is proposed within a groundwater source protection zone, within 8 m of an EA main river or close to potential sources of contamination such as landfills or chemical works
- A Site Waste Management Plan (SWMP) and Materials Management Plan (MMP) will be developed and used for the Project to forecast and confirm the ultimate destination of arisings generated during the construction phase of the Project

10 Landscape and visual impacts

10.1 General requirements

The following measures will be incorporated into the CEMP where appropriate and reasonably practicable:

- Position temporary seeded soil storage mounds to provide screening benefits to sensitive receptors
- Landscape planting will be carried out as early as reasonably practicable so that screening can establish
- On land occupied for the construction phase only, mature trees and hedgerows will be sought to be retained

10.2 Compounds

At compound locations where appropriate and reasonably practicable the following will be considered when planning the compound set up:

- Where a compound area is sub-divided and/or bounded by existing hedgerows, the compound layout will be designed so as to reduce the number of access points requiring hedgerow removal
- Site offices, waste management areas, staff parking, smoking areas and plant storage areas are located away from residential and other sensitive receptors.

10.2.1 *Arboriculture*

Tree protection measures will be applied during the construction phase. The location, extent, standard and duration of all tree protection measures will be identified and specified in a Tree Protection Plan.

These protection measures, should be maintained for the duration of the construction phase and may reasonably include, but not be limited to:

- Protective fencing encompassing the full extent of the Root Protection Zone (RPZ) of trees to be retained
- Temporary ground protection
- The use of 'no-dig' hard surfacing
- The use of minimal dig foundations (e.g. pads and piles)
- Suitable arboricultural monitoring and supervision

10.2.2 *Re-instatement*

The EWR Alliance will deliver a scheme of landscape mitigation in accordance with the Environmental Design Drawings (Volume 4 of the ES) and principles included in the ES, which includes:

- Where soil conditions and orientation are suitable, cutting faces will be seeded with species rich grass and wildflower mixes
- Other embankments and 'at grade' areas will be seeded with a general low maintenance grass mix
- Where operational and maintenance restrictions allow, lower slopes of embankments and outer edges of trackside margins will be planted with areas of a native shrub mix to create a scrub habitat, restore and link linear vegetation belts, screen rail infrastructure and visually soften and integrate embankments
- Where reasonably practicable, hedgerow will be established along both sides of the rail corridor as a default treatment to provide/replace a linear green infrastructure, screen railway infrastructure and visually integrate the rail corridor into the landscape
- Where operational and maintenance restrictions allow, trees will be incorporated into the hedgerow to reflect the landscape character of adjacent areas and provide screening and filtering of sensitive view
- Where land is required on a temporary basis for the working areas outside of the rail corridor, for access or to facilitate construction, the land will be reinstated to its current landcover and use at the end of the construction period.

11 Water quality and flood risk

11.1 General requirements

The CEMP will include mitigation measures to protect the water environment and will set out how construction activities will be undertaken in accordance with best practice guidance such as CIRIA C532 'Control of Water Pollution from Construction Sites'.

The Alliance will follow the good environmental practice guidance detailed in GPP5: 'Working and maintenance in or near water: GPP5 (January 2017). In the absence of any update for PPG6: Working at construction and demolition sites; it is recommended that this guidance is followed as despite being withdrawn it remains good practice guidance. Further details in relation to contamination risk are covered in Section 9: Geology, soils and contamination.

The following measures will be addressed in detail within the CEMP:

- Management of polluting substances used during works proposed to the existing bridges over watercourses
- Management of polluting substances during works in close proximity (within 10 m) to watercourses
- Procedures in case of accidental leakages or spillages of hydrocarbons and oils, or accidental release of hazardous substances during construction works
- Management of polluting substances that are being brought on site and used as part of the construction process

Construction compounds; A1, B6 and D1, shall have a 10 m exclusion area along the site limit adjacent to a watercourse. For all construction compounds and areas of the proposed works located within areas deemed to be at risk of fluvial and surface water flooding, the EWR Alliance shall prepare and implement a Flood Emergency Response Plan (FERP) during the construction phase. The FERP will include, where relevant:

- Arrangements to evacuate the area at flood risk
- Arrangements to make safe any static plant
- Arrangement to move any mobile plant

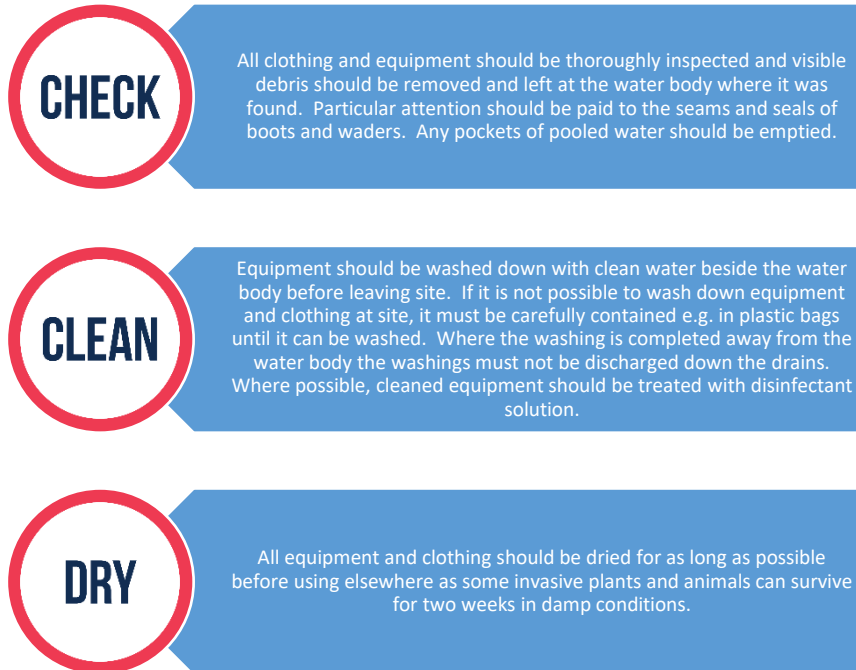
The EWR Alliance will monitor flood warning posted by the EA or register for early warning notices where applicable.

The FERP will also detail the protective measures in place that minimises the potential for a pollution incident to occur during times of inundation and flood.

Construction workers will be made aware of risks associated with excess surface water caused by overland flows and standing water - for example, risks to deep excavations and damage to plant.

11.2 Biosecurity

Spread of disease and non-native species between waterbodies will be managed in accordance with the Check, Clean, Dry campaign:



Additional mitigation measures will be set out in the CEMP.

11.3 Specific Requirements

11.3.1 Site drainage

The CEMP shall include consideration of site drainage of the construction compounds and areas of the proposed works including surface runoff and any effluent created during de-watering activities. Drainage plans shall be prepared for these areas identifying the location and type of drainage and the plans shall be displayed on site and incorporated into emergency plans where required.

As detailed design works are completed for the permanent railway drainage they shall be incorporated into the drainage plans.

The EWR Alliance will seek where necessary any appropriate approvals for disposal of effluent to the public sewer or surface waters in accordance with the Order powers and protective provisions.

In consideration and compliance with the best practice guidance, every effort will be made as far as is reasonably practicable, to avoid any runoff containing silt from entering watercourses or highway drainage infrastructure in consideration of potential washout from temporary construction and laydown and storage areas. Potential for discharges shall be assessed and control measures will be incorporated within the Work Package Plans and Task Briefing Sheets, as required.

The EWR Alliance will be clear in identifying any discharge that is intended for local soakaway or drain. Water that is of contaminated quality will only be permitted to be discharged to foul sewer if consented or removed by tanker. Otherwise, water that is identified to be of suitable quality or uncontaminated will be permitted to be discharged into a soakaway subject to Lead Local Flood Authorities/Internal Drainage Board's approval.

11.3.2 *Control of Pollution of Surface Water and Groundwater*

11.3.2.1 Works on, near and adjacent to watercourses

The CEMP will detail the potential ways in which runoff may become contaminated and what preventative measures will be in place to reduce the risk of pollution entering surface watercourses, or highway drainage as far as is reasonably practicable. These measures will include:

- Site-specific emergency controls for all works adjacent to or over water resources
- Refuelling will be attended by a trained site representative
- Refuelling will be via a double-bunded bowser equipped with a full spill kit. No refuelling or maintenance oiling will take place within 10 m of a water course or drain
- Bulk material and chemical storage areas will be located within the construction compounds. Compounds adjacent to watercourses shall have storage areas positioned the greatest possible distance from the watercourse, not less than 10 m
- Minimum quantities of materials including hazardous substances such as cement, concrete or oils will held at worksites in the immediate vicinity of a watercourse. Materials will be placed in secure, bunded storage
- Cement and concrete will not be mixed within 10 m of a watercourse. The washout shall be discharged to the waste storage area within the compound; where necessary it shall be discharged to a container for transport to the waste storage area
- Silt mitigation measures will be implemented to limit runoff of exposed soil into watercourses. Bunds, cut-off ditches, settlement ponds and drainage covers will be utilised to limit runoff from entering watercourses
- Spill kits and plant nappies will be provided for all static plant and equipment. They will be available at all times to all areas of work activity
- Vehicles will be washed down only in designated areas
- Roads and areas of hardstanding will be subject to periodic maintenance to prevent the accumulation mud deposits

11.3.2.2 Works on structures over water

The CEMP will detail the mitigation measures to prevent impacts from works to construct or recondition structures over water. These measures shall include:

- Installation of pollution containment measures, for example impenetrable walls, fully sealed joints, airlocks or resealable entryways
- Preferential use of physical cleaning techniques
- Employ vacuum dust collection techniques, otherwise employ dust suppression techniques and contain any runoff

11.3.2.3 Watercourse Reinstatement

Watercourses subject to alteration will be reinstated to their preconstruction condition and in line with all consents, permits or licenses. Reinstatement measures shall include:

- Banks will be profiled to the same incline as they were originally
- Banks will be planted with natively sourced vegetation in accordance with the landscape design
- Material excavated from the existing watercourse bed to be used for reinstatement will be stored in the vicinity of the worksite and will be maintained in a clean condition with appropriate silt management controls in place
- Where the existing bed material is unsuitable for use in the reinstatement, replacement material will be sourced as locally as possible and will be tested to confirm its conformity to the existing nature and chemical properties of the original watercourse bed
- Where an upstream silt curtain has been installed, any build-up of silt and other debris shall be cleared prior to the removal of curtain
- Removal of all construction waste, surplus materials and equipment

- Monitoring

11.3.3 *Control of water that collects on site or within excavations*

An EWR Alliance permit to pump process will be established and a permit will be obtained for all pumping activities. The permit to pump shall not be valid and approved for use unless there has been:

- Confirmation of all consenting requirements and / or use of the Regulatory Position Statement: Temporary Dewatering from Excavations to Surface Water
- An assessment for potential contaminants within the ground and water including confirmation of any special measures that shall be required to prevent pollution
- Dewatering methodology:
 - Fully considered equipment arrangements including: specification of the equipment to be used; the layout of the equipment including positioning in relation to site environmental constraints; the filtration method including maintenance requirements
 - An appropriate disposal method for any contaminated substances and all filtration material including recovered sediment
 - Refuelling arrangements
 - Noise control measures, where required

The pumping activity will be subject to a minimum of twice daily monitoring. A photographic record should be taken on each check. In addition, each check shall confirm:

- Quality of the water before and after pumping
- Equipment and layout are functioning effectively
- Condition and suitability of the filtration arrangements

More frequent monitoring may be specified depending on the sensitivity of the works location or to comply with the requirements of any consents.

11.3.4 *Storage of Pollutant Materials*

All liquids that might potentially cause pollution shall be stored in accordance with “The Control of Substances Hazardous to Health (COSHH) Regulations 1999” or “The Control of Pollution (Oil Storage) (England) Regulations 2001”, whichever is applicable.

Any surface water accumulating in any bund in place to comply with the provisions of this section will be removed and discharged only to public sewer with the necessary consent of the relevant water company.

Spill kits that are appropriate in type and quantity and that are fit for purpose will be located in proximity to all stored potentially polluting materials. Emergency response and spill kit training will be provided for relevant site personnel.

11.3.5 *Plant and Machinery Maintenance*

Oil and diesel storage is identified as a key potential source of pollution so the following minimum measures apply:

- The EWR Alliance will define in the CEMP, the maintenance and check regime in place for all oil and diesel storage facilities
- The EWR Alliance will use storage units that are in good condition, fit for purpose and in all cases compliant with the Oil Storage Regulations
- The EWR Alliance will carry out appropriate set-up checks of the storage facility (including the operation of the facility) are carried out
- All hydraulic plant and machinery shall be the subject of the mandatory maintenance regime that shall be an auditable process

11.3.6 *Protection from Vandalism*

Despite appropriate pollution and prevention measures, areas of work in general may be subject to theft or vandalism, which may target fuel storage and lead to a spill. In this respect, all construction compounds will be secured and all points of entrance/egress will be securely locked when not in use. Compounds and works will be well lit during working hours of low light. All plant and machinery will be stored in the construction compounds when not in use.

Periodically checks will be made of the security of the compounds, and the toolbox talks shall include topic coverage of site security and require vigilance and reporting of security issues.

11.3.7 *Concrete Washout facilities*

After delivery of any wet concrete, delivery vehicles may need to washout any concrete on the delivery vehicles. The following measures apply:

- A designated concrete washout facility shall be created as far from water resources as reasonably practicable and the location will be shown on compound layout plans
- The washout facility shall be clearly segregated and identified as the facility
- The use of the washout shall be monitored with provisions in place to ensure there can be no leakage of wet concrete
- Dried washout concrete will be broken up and re-used on site (e.g. inert fill)

11.3.8 *Emergency Response*

An Incident Response Plan will be included in within the CEMP, which will include the process to be followed for a pollution incident. The EWR Alliance shall acquire the call-off services of an emergency spill response specialist who would be able to provide an immediate response to a major incident.

The EWR Alliance will report all major pollution incidents in accordance with the Incident Response Plan.

12 Traffic and transport

12.1 General requirements

The EWR Alliance will undertake works in such a way as to maintain access and avoid traffic disruption during construction, wherever practicable.

The Alliance will implement travel plans to encourage the use of sustainable forms of travel to work for construction staff.

The construction mitigation measures will be within a Construction Traffic Management Plan (CTMP) (TWAO Planning Condition 15).

The CTMP shall contain as a minimum:

- Construction access routes including access and egress points on to the public highway
- Prohibited routes for construction traffic
- Any time restrictions imposed on any routes
- Temporary road and Public Right Of Way closures and diversions
- Details of the audit and performance monitoring for construction traffic to ensure their adherence to the stated routes and restrictions
- Temporary traffic control measures
- Site specific controls in consideration of the potential nuisance (noise, vibration, mud and dust)
- Prohibition of parking of any construction site vehicles along the public highway
- Highway improvements for safety and capacity requirements along any routes where considered necessary

13 Resource use and waste management

13.1 General requirements

Opportunities will be considered during construction to:

- use materials efficiently
- reuse materials on site
- reduce waste at source
- reduce waste sent to landfill

13.2 Waste hierarchy

The EWR Alliance will manage waste in accordance with the waste hierarchy (EU Waste Framework Directive 2008 and The Waste (England and Wales) Regulations 2011). The waste hierarchy ranks waste management options according to what is best for the environment, with top priority given to preventing waste in the first instance. Every effort will be made to move waste generated by the project up the waste hierarchy as far as is reasonably practicable. A combination of options is usually required to efficiently manage wastes generated by a project and the following options will be considered during construction:

- Efficient resource management to reduce the generation of construction waste
- Efficient resource management to reduce the generation of excavated waste
- Offsite fabrication, for example, footbridge bridge decks
- Re-use of redundant infrastructure within the Project, for example, the use of old ballast in temporary works (compounds and haul routes) or returned to a Network Rail national track material recycling centre
- Re-use excavated materials in accordance with the CL:AIRE Definition of Waste: Code of Practice either within the project or on other sites within reasonable proximity to the site
- Recycling of materials either on site or at appropriately permitted facilities
- Disposal of wastes at appropriately waste to energy facility or permitted landfill, once all other options had been considered.

13.3 CL:AIRE Definition of Waste: Code of Practice

Any re-use of excavated material within the Project will be managed in accordance with the CL:AIRE Definition of Waste: Code of Practice (DoWCoP). As required by DoWCoP, a Materials Management Plan (MMP) will be developed to document how excavated material will be reused on site or on other sites within reasonable proximity. A declaration will be submitted by a 'Qualified Person' in accordance with DoWCoP.

13.4 Site Waste Management Plan

A Site Waste Management Plan (SWMP) has been created for the Project. This document will remain a live and will be updated as the Project progresses, recording actions to "design out" and minimise waste on the Project, and actual movements of waste during construction. The SWMP will forecast and confirm the ultimate destination of excess / unsuitable soil arisings and wastes generated during construction, disposed of offsite.

The EWR Alliance will further develop the SWMP to identify:

- The EWR Alliance's responsibilities for overall waste management
- The waste category and initial forecasted and actual quantities of waste to be produced by the works
- Proposals for recycling and/or re-use of wastes
- The proposed method of storage, handling and transportation of waste
- Details of the authorised waste carriers including their waste carrier registration number

- The means and routes of treatment and/or disposal and the relevant permits/exemptions
- Details of the sites that wastes are to be taken to including details of the environmental permit or exemption

The SWMP will also address the logistics of waste management on site in terms of efficient storage, designated and suitably identified waste storage areas on site.

13.5 Duty of care

The EWR Alliance is required to comply with its “Duty of Care” as per section 34 of the Environmental Protection Act. All wastes on site will be managed in accordance with duty of care requirements and the Waste Duty of Care Code of Practice (March 2016). Written documentation (i.e. waste transfer notes and hazardous waste consignment notes) will accompany any movement of waste off site.

Any hazardous waste produced will be disposed of in accordance with the Hazardous Waste (England & Wales) Regulations 2005 (as amended).

