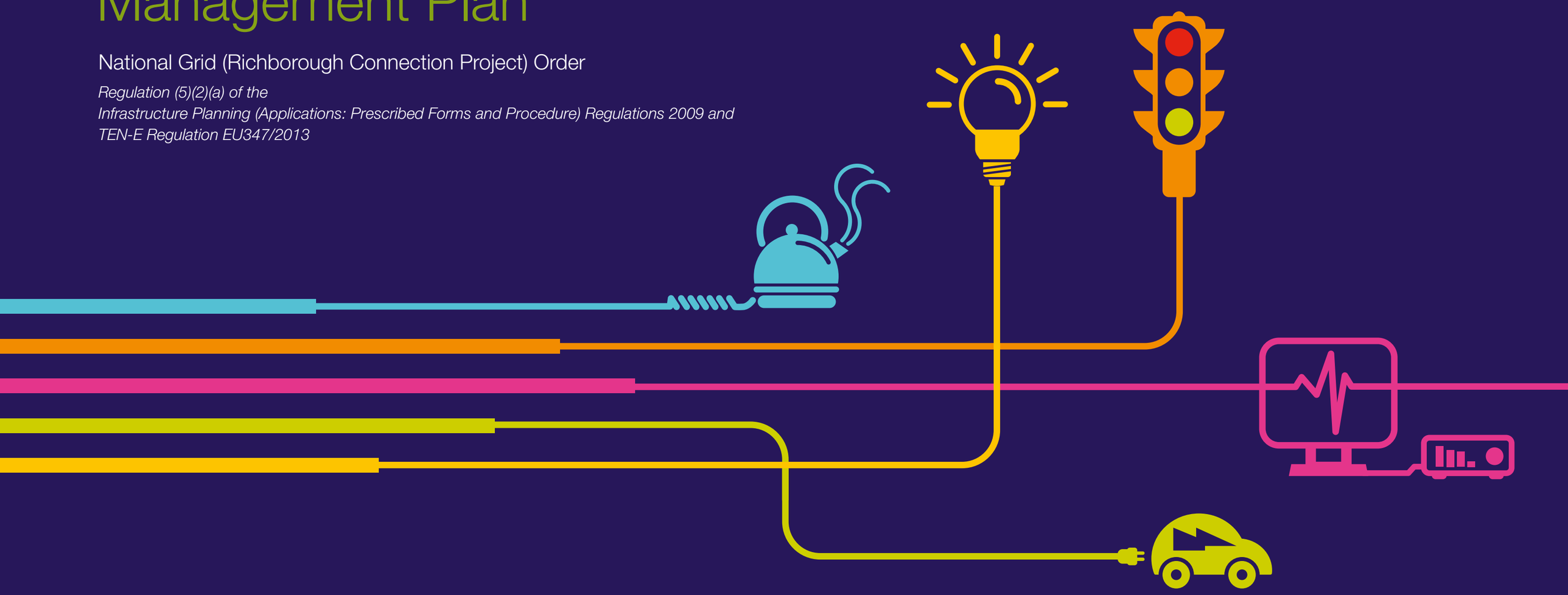
DOCUMENT 5.4.3C

nationalgrid

3C Construction Environmental Management Plan

National Grid (Richborough Connection Project) Order

Regulation (5)(2)(a) of the
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 and
TEN-E Regulation EU347/2013



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Richborough Connection Project

Volume 5

5.4 Environmental Statement Appendices

5.4.3C Construction Environmental Management Plan

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1. EXECUTIVE SUMMARY

1.1 Purpose of the CEMP

1.1.1 This Construction Environmental Management Plan (CEMP) supports the application by National Grid Electricity Transmission plc (National Grid) to seek powers to construct, operate and maintain a new 400,000 volt (400kV) connection between Canterbury North 400kV Substation, east of Canterbury city centre, and the proposed Richborough 400kV Substation, together with various associated development and other works ("the proposed development"). Due to the size and characteristics of the proposed development, it is defined as a Nationally Significant Infrastructure Project (NSIP) and the application for development is undertaken as a Development Consent Order (DCO) Application submitted to the Planning Inspectorate and Secretary of State. The proposed development is in the administrative boundaries of Kent County, Canterbury City, Thanet District and Dover District Councils in the south east of England.

1.1.2 This document describes the embedded environmental measures that will be implemented by National Grid and its appointed contractors during each stage of the construction of the proposed development, and any works undertaken on the assets of UK Power Networks.

1.1.3 The CEMP has been prepared in accordance with:

- the environmental measures identified in the Environmental Statement (ES) (**Volume 5, Documents 5.1 - 5.4**) to avoid, reduce or compensate for effects on the environment from the construction of the proposed development;
- National Grid's Environmental Management System (EMS) (National Grid's Environmental Policy); and
- National Grid's management control documents that accompany the EMS.

1.1.4 Revisions to this CEMP, including the referenced management plans, may be undertaken during the examination of the DCO Application. Revisions will be incorporated and the document will be finalised at the close of examination. This document will then become the final CEMP as required by **Requirement 5** and Certified under **Article 3** of the draft DCO (**Volume 2, Document 2.1**). National Grid and their contractors will carry out all work in accordance with the CEMP during the construction of the proposed development unless otherwise agree with the relevant planning authority.

1.2 Management Plans

1.2.1 Construction management plans have been prepared to accompany the CEMP, which will be implemented during the construction of the proposed development. These are as per **Requirement 5** and certified under **Article 45** of the DCO. The construction management plans detail further environmental measures to avoid, reduce or compensate for effects on the environment. These are:

- the Outline Waste Management Plan (OWMP) (**Volume 5, Document 5.4, Appendix 3D**);

- the Biodiversity Mitigation Strategy (BMS) (**Volume 5, Document 5.4, Appendix 3E**);
- the Archaeological Written Scheme of Investigation (AWSI) (**Volume 5, Document 5.4, Appendix 3F**);
- the Construction Traffic Management Plan (CTMP) (**Volume 5, Document 5.4, Appendix 3G**); and
- the Public Rights of Way Management Plan (PRoWMP) (**Volume 5, Document 5.4, Appendix 3H**);
- the Noise and Vibration Management Plan (will be prepared prior to the commencement of construction).

1.2.2 Prior to the commencement of construction of the relevant stage of works further detailed plans and schemes will be submitted to and approved by the relevant planning authority. These are required under **Requirement 6** of the DCO, which will include a Soil Management Plan, Drainage Management Plan and Tree and Hedgerow Protection Strategy amongst others.

1.2.3 Additional documentation will be prepared such as Method Statements and Toolbox Talks prior to each stage of construction to set out in detail the management systems, procedures and approaches that will be implemented during construction to comply with the CEMP.

1.3 Objectives

1.3.1 The objectives of the CEMP are as follows:

- to provide a mechanism for ensuring the delivery of environmental measures (other than those which will be secured through specific requirements of the DCO), to avoid, reduce or compensate for environmental effects identified in the ES;
- to provide an outline of the content that will be supplied in the detailed plans and schemes prior to construction of the relevant stage of works (**Table 3C.1.2**);
- to ensure compliance with legislation and identify where it will be necessary to obtain authorisation from relevant statutory bodies;
- to provide a framework for compliance auditing and inspection to ensure the agreed environmental aims are being met; and
- to ensure a prompt response to any non-compliance with legislative and DCO Requirements, including reporting, remediation and any additional mitigation measures required to prevent a recurrence.

1.4 Securing Implementation of the CEMP

1.4.1 The CEMP will be implemented by National Grid, and is secured through a Requirement of the DCO:

1.4.2 **Schedule 3, Requirement 5** – (1) All construction works for the authorised development must be carried out in accordance with the CEMP, unless otherwise agreed with the relevant planning authority and the relevant highway authority as may be appropriate to the relevant plan, scheme or strategy concerned.

1.4.3 National Grid will require their contractors to adopt and implement the CEMP during the construction of the proposed development. This will be secured through contractual agreements.

1.5 Inspection and Incident Control

1.5.1 Inspections will be undertaken to ensure the measures in the CEMP and management plans are being implemented. In the event that an aspect of the CEMP is not implemented, an incident control procedure will be followed. The incident control procedure will identify, report, and investigate all environmental incidents, near misses, hazards and any learning points associated with the construction of the proposed development.

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2. INTRODUCTION

2.1 The Applicant and an Overview of the Richborough Connection Project

2.1.1 At National Grid, our job is to connect people to the energy they use, whether to heat and light homes, or to keep factories and offices running. As old power stations close new sources of energy need to be connected to our network, so that electricity continues to be available at the flick of a switch.

2.1.2 One of these new sources of energy is a proposed high-voltage electricity link between Belgium and Richborough near Sandwich in Kent, known as the Nemo Link®. In order to transport the energy from Nemo Link around the country, National Grid need to connect it to the high-voltage electricity network.

2.1.3 There is no high-voltage electricity network in the Richborough area, so National Grid will need to build a new connection to join Richborough to their existing network approximately 20km away, near Canterbury. This new infrastructure project is known as the Richborough Connection project.

2.1.4 The proposed development consists of the following principle activities:

- A new 400,000 volts (400kV) overhead line between Richborough and Canterbury North Substations 400kV Substations (to be known as the PC route). This would be approximately 20km long and would be built using 45 standard lattice pylons and 15 low height lattice pylons (60 pylons in total).
- A permanent diversion of an existing lower voltage (132kV) overhead line, known as the PY route, owned by UK Power Networks.
- Three temporary diversions of another existing lower voltage 132kV overhead line, known as the PX route, owned by UK Power Networks.
- The removal of 20.6km (79 pylons) of an existing lower voltage 132kV PX route overhead line.
- Other works, for example, temporary access roads to reach pylon construction and demolition areas, bridge structures, highway works, construction compounds, protective scaffold structures, pylon work sites and ancillary works.

2.1.5 National Grid has prepared a series of plans and reports to explain our proposals to build a new 400kV overhead line between the existing Canterbury North 400kV substation and the proposed Richborough 400kV substation. The application has been submitted under the Planning Act 2008 (known as a Development Consent Order application) and the TEN-E Regulations (European Legislation) which has been submitted to the Planning Inspectorate for their review.

2.2 The Purpose of the Construction Environmental Management Plan

2.2.1 This Construction Environmental Management Plan (CEMP) has been prepared by National Grid and presents the approach and application of environmental management and mitigation for the construction of the proposed development

(which includes the works on UK Power Networks 132kV routes). The CEMP aims to ensure that adverse effects from the construction phase of the proposed development, on the environment and the local communities, are minimised. It does not describe environmental measures relating to the operation and decommissioning of the proposed development; these are provided in the environmental measures sections of the ES Chapters (**6 to 15**) and collated in the Schedule of Environmental Measures at **Appendix 3B** of the Environmental Statement (**Volume 5, Document 5.4**).

2.2.2 The CEMP has been prepared in accordance with the construction environmental measures identified in the ES Chapters (**Volume 5, Document 5.2**) and in accordance with National Grid's Environmental Management System (EMS).

2.3 The Development Consent Order

2.3.1 The CEMP will be implemented by National Grid secured through the following Requirement of the Development Consent Order (DCO):

Schedule 3, Requirement 5 – (1) All construction works for the authorised development must be carried out in accordance with the CEMP, unless otherwise agreed with the relevant planning authority and the relevant authority as may be appropriate to the relevant plan, scheme or strategy concerned.

Schedule 3, Requirement 5 – (2) The CEMP, which specifies measures to be used to minimise the impacts of construction works, incorporates the following plans scheme and strategy:

- Outline Waste Management Plan;
- Biodiversity Mitigation Strategy;
- Archaeological Mitigation Written Scheme of Investigation;
- Construction Traffic Management Plan;
- Public Rights of Way Management Plan; and

2.3.2 Revisions to this CEMP, including the referenced management plans (detailed in **Table 3C.1.1**), may be undertaken during the examination of the DCO Application. Revisions will be incorporated and the document will be finalised at close of the examination. This document will then become the final CEMP as required by **Requirement 5** and certified under **Article 45** of the DCO (**Volume 2, Document 2.1**). National grid and their contractors will carry out all work in accordance with the CEMP during the construction of the proposed development unless otherwise agreed with the relevant planning authority.

2.4 Objectives

2.4.1 The objectives of the CEMP are to:

- provide a mechanism for ensuring the delivery of environmental measures (other than those which will be secured through specific requirements of the DCO), to avoid, reduce or compensate for environmental effects identified in the ES;

- provide an outline of the content that will be supplied in the additional plans (**Table 3C.1.2**);
- ensure compliance with legislation and identifying where it will be necessary to obtain authorisation from relevant statutory bodies;
- provide a framework for compliance auditing and inspection to ensure the agreed environmental aims are being met; and
- ensure a prompt response to any non-compliance with legislative and DCO Requirements, including reporting, remediation and any additional mitigation measures required to prevent a recurrence.

2.5 Accompanying Plans

2.5.1 The CEMP is accompanied by the plans and strategies shown in **Table 3C.1.1** which are submitted as part of the DCO application:

Table 3C.2.1: Management Plans

Plan/Strategy	Description	Appendix/Volume
Outline Waste Management Plan (OWMP)	A strategy and action plan for the management of waste which is likely to arise during the construction phase of the proposed development.	Volume 5, Document 5.3, Appendix 3D
Biodiversity Mitigation Strategy (BMS)	Describes measures to avoid, reduce and compensate for likely adverse effects on ecological receptors.	Volume 5, Document 5.3, Appendix 3E
Archaeological Mitigation Written Scheme of Investigation (AWSI)	Sets out the steps that need to be taken to mitigate the predicted effects on archaeology, geo-archaeology and historic landscape heritage assets.	Volume 5, Document 5.3, Appendix 3F
Construction Traffic Management Plan (CTMP)	Details the strategy and mitigation measures to be used to limit the impact on existing users of the public highway network.	Volume 5, Document 5.3, Appendix 3G
Public Rights of Way Management Plan (PRoWMP)	Describes where the PRoW will be affected and how the PRoW will be managed, to ensure they are safe to use and the disruption to the users of the PRoW is minimised.	Volume 5, Document 5.3, Appendix 3H

2.5.2 **Table 3C.1.2** lists the plans and procedures that will be developed for each stage of the proposed development to set out in detail the management systems and approaches that will be implemented during construction to comply with the CEMP.

2.5.3 The plans in bold are required in accordance with **Schedule 3**, **Requirement 6**, no stage of the authorised development may commence until, for that stage, the plans have been submitted to and approved by the relevant planning authority.

Table 3.C.2.2: Plans and procedures to be prepared by the Appointed Contractors

Plan or Procedure	Description
Detailed Environmental Management Procedures	Details the day to day environmental mitigation measures and site management such as toolbox talks that will be implemented by the contractor during each stage of the construction works. To ensure work is undertaken in accordance with the CEMP.
Contractor Environmental Management System	Detail the framework and management processes and structure for managing the environmental aspects of the project.
Construction Phase Safety, Health and Environmental (SHE) Plan	Details relevant safety, health and environmental information relating to all construction activities (detailed further at **section 3.2**).
Materials Management Plan (MMP)	Demonstrates that any excavated material re-used on site is not classified as 'waste'
Emergency Response Plan for Unexploded Ordnance	Describes the procedure to be followed in the discovery of unexploded ordnance (detailed further at **section 3.12**).
Soil and Aftercare Management Plan (SAMP)	Identifies the nature of the soil, areas of potential difficulty in gaining access, working excavating or soil handling arising from the nature of the soil. Describes how works should be undertaken to minimise effects on the nature and quality of the soil (detailed further at **section 4.4**). Aftercare management provides for protection of the agricultural use of the land during and following the construction period, to allow for soil rehabilitation. The area required for construction will be defined and provision for ongoing access to areas within field affected by construction activity will be agreed to take account of crop husbandry requirements.
Drainage Management Plan (DMP)	In accordance with **Schedule 3**, **Requirement 14** of the DCO; identifies all known risks to the water environment and identifies appropriate measures to control flood risk and prevent pollution during construction (detailed further at **section 4.4** and **4.5**). A phased approach may be taken to the development of the DMP to reflect the phasing of the construction programme.
Pollution Incident Control Plan (PICP)	Identifies how the risk of pollution due to construction works, materials and extreme weather events will be controlled and identifies the remedial actions in the event of an incident (detailed further at **section 2.13**).

Plan or Procedure	Description
Lighting Scheme	Identifies the detail of the location, type and use of lighting at the construction site (detailed further at **section 3.6**).
Emergency Response Plan for Flood Events	Details the emergency procedures in the event of a flood (outlined at **section 4.5**).
Noise and Vibration Management Plan (NVMP)	Details the relevant noise and vibration restrictions and monitoring to be implemented by the Contractor during each stage of the construction works. This will be in accordance with the site-specific measures identified within the Environmental Statement.
Outline Waste Management Plan (OWMP)	Sets out details developed from the Initial OWMP to identify site-specific measures for the collection, segregation, treatment and disposal of waste (detailed further at **section 3.7**).
Tree and Hedgerow Protection Strategy (THPS)	To include tree protection plans, a schedule of all proposed tree and hedge removal and pruning, with annotated plans; specification for temporary physical protection for trees and hedgerows; and details of an auditable system of compliance.
Mitigation Planting Scheme	Details the mitigation planting required for trees, groups of trees, woodlands and hedgerows to replace those removed during that stage that accords with the Arboricultural Impact Assessment (**Volume 5, Document 5.4, Appendix 3I**). In accordance with **Requirements 8 and 9** of the draft DCO (**Volume 2, Document 2.1**)

2.6 Conformance with Corporate and Project Environmental Management System (EMS)

2.6.1 National Grid is committed to safeguarding the environment for future generations by taking a responsible and sustainable approach in all that they do.

2.6.2 In accordance with this proactive approach to sustainable design and construction National Grid and the appointed contractors will to seek to maximise resource efficiency through reducing the amount of waste generated, minimising water consumption and making the most efficient use of energy.

2.6.3 The carbon footprint of the proposed development will be minimised during construction by avoiding CO_2 emissions where possible through, for example, keeping construction vehicle movements to the minimum necessary.

2.6.4 National Grid maintains an EMS to provide a framework within which to manage and reduce their effects on the environment. The EMS is accredited to ISO14001:2015. This CEMP complies with National Grid's environmental policy.

2.6.5 Each EMS sets out the overall processes for:

- environmental responsibilities;
- identifying environmental aspects;
- setting and achieving environmental objective and targets;
- controlling environmental impact;
- meeting the conditions of environmental consents and permits; and
- preparing and responding to environmental emergencies and incidents.

2.6.6 The contractors will prepare their own project-based EMS in accordance with National Grid's EMS prior to construction commencing. An EMS will be prepared by the contractors for each element of the proposed development, including the installation of the new 400kV route, the removal of the existing 132kV PX route, 132kV route diversions and ancillary works such as site access, scaffolding and substation works. The contractors' EMS will detail their framework for managing the environment.

2.6.7 The contractors' EMS will address:

- the environmental aspects identified in the ES (**Volume 5, Documents 5.1 – 5.4**) and CEMP;
- compliance with environmental consents and permits;
- overall compliance with environmental legislation, approved codes of practice and industry best practice;
- detailed environmental management procedures to deliver the CEMP, including roles and responsibilities;
- monitoring and review arrangements;
- emergency procedures that are defined and adopted; and
- appropriate training and information for personnel.

2.7 Conformance with the Environmental Statement

2.7.1 An Environmental Impact Assessment (EIA) has been undertaken for the proposed development. An Environmental Statement (ES) has been prepared in accordance with the Infrastructure Planning (EIA) Regulations 2009 (the 2009 Regulations). The ES is provided at **Volume 5, Documents 5.1 – 5.4** and includes assessments of the potential effects on the environment that are likely to be caused during the construction, operation and decommissioning phases of the proposed development.

2.7.2 This CEMP, to be implemented by National Grid and their contractors, has been prepared in accordance with the environmental measures identified in the ES and supporting documentation to avoid, reduce or compensate for the adverse effects of the proposed development on the environment during construction.

2.8 Compliance with Legislation, Standards and Guidance

2.8.1 There is a broad range of legislation covering the different aspects of environmental protection. These are supported by additional statutory guidance; 'standards', such as British Standards (BS) or International Standards (ISO); and other 'best practice' guidance, including industry codes of practice. Where applicable, references to specific legislation, standards and guidance are included within each subsequent section of this CEMP.

2.8.2 This aspect of the CEMP will be kept under review and updated as required as a result of new or amended legislation, standards and guidance by National Grid and their contractors.

2.9 Involvement of Local Authorities and Other Statutory Bodies

2.9.1 National Grid has engaged with stakeholders, including local authorities and other statutory and non-statutory bodies, throughout the design evolution of the proposed development, as is described in the Consultation Report (**Volume 6**).

2.9.2 Specifically, stakeholders have been invited to provide comment on the EIA of the proposed development, at preliminary stage and on the ES. Comments were received on all aspects of the EIA including on proposed mitigation. These comments have been taken into account in the design of the proposed development, the ES and this CEMP.

2.9.3 During the examination of the Application, the local authorities and other statutory bodies will have the opportunity to provide further input and advice to National Grid on the adequacy of the measures in this CEMP and accompanying management plans. This includes the adequacy of the process and controls to be implemented. Any advice provided during the examination process will be considered and where appropriate revisions to the CEMP will be made by National Grid.

2.9.4 Additional consents will be sought where required, such as environmental permits from the Environment Agency (EA) for example, and further consultation will be undertaken with the appropriate bodies.

2.10 Community Engagement and Public Information

2.10.1 A community relations agency will continue to provide dedicated community relations and external communication support throughout the construction of the proposed development. The community relations agency will work with the internal established communications teams at National Grid.

2.10.2 A 24 hour free telephone project helpline and project website will be maintained and managed by the community relations team. The project helpline and website information will be visible on boards placed around the perimeter of the construction site in appropriate locations where they would be visible to the public. The telephone number and project website details will be provided to the local authorities and other relevant parties.

2.10.3 The community relations team will ensure the details of any complaints are recorded and all complaints are appropriately managed. Complaints will be investigated and appropriate action will be taken. The investigation procedure is detailed at **section 2.13**.

2.10.4 In addition to the project telephone helpline and the project website, complaints from an external party may also be received via a number of other sources, for example, via written correspondence or incidental contact with construction workers.

2.10.5 Where a person from a community local to the works makes a complaint, it will be passed initially to the community relations team. The community relations team will liaise with the other members of the project team to investigate the complaint. Appropriate action will be taken by the project construction team.

2.11 Roles and Responsibilities

2.11.1 Establishing roles and responsibilities on site is important to ensure the successful construction of the proposed development, including the implementation of the CEMP. **Inset 3C.1.1** shows the titles of the likely environmental project construction team.

2.11.2 NOTE: Details of **Inset 3C.1.1** and Table **3C.1.3** to be confirmed once a contractor has been appointed. The specific roles of the construction team and their titles will be determined in due course.

Inset 3C.1.1: Likely Roles of Environmental Project Construction Team

Responsibilities

2.11.3 The responsibilities of the personnel who will be responsible for implementing, monitoring, responding to, and updating the CEMP are described at **Table 3C.1.3**.

Table 3C.2.3: Responsibilities of the Likely Environmental Project Construction Team

Role	Responsibilities
Senior Project Manager	Overall responsibility for ensuring conformance with the CEMP; and Incident investigation.
Contractor Project Manager	Reviewing risk assessments and method statements (RAMS); Manager of the Safety, Health and Environment (SHE) Plan; Reviewing, updating and issuing the CEMP; Incident investigation; Development and implementation of Emergency Response Plan for Flood Events; Liaison with the emergency services; Site inspection; Reviewing applications for environmental consents and permits; and Sensible monitoring.
Contractor Environmental Manager	Site inspection; Preparing and submitting applications for environmental consents and permits; Liaison with third parties and licensing authorities; Organising environmental surveys; Sensible monitoring; Overseeing and monitoring all environmental management plans (see also **Volume 5, Document 5.4, Appendix 3H** and **section 4.11** of this CEMP); and Discharging consent conditions.
Project Engineer	Reviewing risk assessments and method statements (RAMS); Reviewer of the Safety, Health and Environment (SHE) Plan; Reviewing and monitoring the CEMP; Incident investigation; Monitoring of contractor compliance with plans and procedures; Liaison with the emergency services; Site inspection; Reviewing applications for environmental consents and permits; and Sensible monitoring.
Ecological Clerk of Works	Overseeing and monitoring the implementation of the BMS (see also **Volume 5, Document 5.4, Appendix 3E** and **section 4.3** of this CEMP).
Landscape Clerk of Works	Overseeing and monitoring all landscape works (see also **section 4.2** of this CEMP).

Role	Responsibilities
Archaeological Clerk of Works	Overseeing and monitoring the implementation of the AWSI (see also **Volume 5, Document 5.4, Appendix 3F** and **section 4.6** of this CEMP).

Contractors

2.11.4 The contractors will be responsible for implementing the CEMP through contractual agreements with National Grid.

2.11.5 Prior to each stage of construction commencing, the contractors will prepare or update the management plans described at **Table 3C.1.2** of this CEMP.

2.11.6 The contractors will prepare and update the site Safety Health and Environment (SHE) Plan, which details relevant safety, health and environmental information relating to all land within the construction site.

2.11.7 The contractors will prepare a list of Contractors Proposals, which will detail all of the environmental mitigation measures for each stage of the works that will be implemented. The Contractors Proposals will be in accordance with the CEMP.

2.11.8 The plans will be made available to all persons working on the proposed development.

2.11.9 Environmental issues that arise during the construction of the proposed development will be reviewed at the inaugural and subsequent regular meetings held by the contractors. Daily toolbox talks will be held by the contractors to inform the construction staff of any environmental issues and any changes to the CEMP, Contractors Proposals and/or the SHE Plan.

2.11.10 National Grid and the contractors will ensure that all staff, including sub-contractors are trained and competent in the management of environmental impacts to a level that is appropriate to their role.

2.12 Inspections

2.12.1 The contractors will undertake daily inspections, which will include monitoring conformance with the CEMP. Daily assessment forms will be completed during the daily checks. Checks on equipment will be undertaken to reduce the risk of incidents occurring (for example oil leaks). As a minimum the following equipment will be inspected:

- Fencing;
- waste storage facilities;
- Soil management;
- oil separators;
- chemical storage facilities;
- bund integrity;
- foul water storage facilities;
- silt traps;

- drainage ditches and watercourses;
- storage vessels (including pumps, gauges, pipework and hoses);
- secondary containment (for example, secondary skins for oil tanks);
- spill response materials; and
- equipment with potential to leak oils and other liquids, for example, compressors and transformers.

2.12.2 Sensible monitoring inspections will be undertaken by National Grid and the contractors to ensure the daily checks are being undertaken correctly.

2.12.3 The inspections will also include, in addition to the list at **paragraph 2.12.1**:

- reviewing the daily risk assessment forms;
- ensuring that faults and defects are identified and rectified; and
- providing data for performance monitoring.

2.12.4 Environmental performance data will be collected and collated into the SHE Plan.

2.12.5 Immediate action including, if necessary 'stopping a job', will be taken should any incidents or non-conformance with the CEMP be found during inspection.

2.12.6 National Grid's and the contractors' monitoring reports will be made available to statutory and non-statutory bodies on request. Where specific environmental management and reporting is required fit will be set out in the relevant management plans.

2.13 Incident Procedure

Pollution Incident Control Plan (PICP)

2.13.1 Contractors will develop and implement a PICP which will detail their response in the event of any incident on site.

2.13.2 The following measures and information will be included and detailed further in the PICP to manage any incidents and limit adverse effects on the receiving environment:

- describe the procedure to be followed in the event of an incident (in accordance with the 'Incident Response' procedure below);
- describe the procedure for the notification of appropriate emergency services, authorities and personnel on the construction site;
- describe the procedure for the notification of relevant statutory bodies, environmental regulatory bodies, local authorities and local water and sewer providers;
- provide maps showing the locations of local emergency services facilities such as police stations, fire authorities, medical facilities, other relevant authorities, such as the EA and also the address and contact details for each service and authority;
- provide contact details for the persons responsible on the construction site for pollution incident response;

- provide contact details of a competent spill response company which can be contacted at short notice for an immediate response.
- ensure that Site Drainage Strategies and Emergency Flood Response Plans are available on site and are kept up-to date; and
- ensure staff competence and awareness in implementing plans and using pollution response kit.

Incident Response

2.13.3 All incidents associated with the construction of the proposed development, including environmental incidents and non-conformance with the CEMP, will be reported and investigated using the PICP (unless stated differently in other Management Plans, for example the BMS, CTMP, AWSI and OWMP).

2.13.4 The following procedure will be followed in the event of an incident and will be detailed further in the PICP:

- works will stop;
- the contractor Project Manager and Environmental Manager will be contacted, the Land Officer will be contacted if on private land, for grantor liaison;
- the size of the incident will be assessed;
  - if the incident is controllable by staff on site, remedial action will be taken immediately in accordance with the Pollution Incident Control Plan;
  - if the incident cannot be controlled by the staff on site, emergency assistance will be sought;
- the appropriate enforcing authority will be contacted and informed, including:
  - the EA for incidents affecting rivers, groundwater and major emissions to atmosphere;
  - the local sewerage undertaker for incidents affecting sewers;
  - the Local Authority Environmental Health Department for incidents that could affect the public; and
  - the Food Standards Agency for incidents that have the potential to affect food through deposition on crops or land used for grazing livestock.
- the Senior Project Manager and Contractor Project Manager will instigate an investigation into the occurrence of the incident;
- the findings will be sent to the appropriate enforcing authority where necessary; and
- an action plan will be prepared to determine why the incident occurred and whether any modifications to working practices are required to prevent a recurrence. If necessary, the CEMP and SHE Plan will be updated (and any other plans as appropriate) and all workers will be notified.

2.14 Structure of the CEMP

2.14.1 The remainder of this CEMP is split into two further chapters:

- **Chapter 3** describes the general principles that will be adopted on the construction site in accordance with National Grid's environmental policy. The general principles cover the following elements:
  - health and safety;
  - construction hours;
  - site layout and appearance;
  - fencing and other means of enclosure;
  - lighting;
  - waste management;
  - security;
  - welfare;
  - pest control;
  - invasive species management;
  - unexploded ordnance;
  - utility works;
  - clearance of the site on completion; and
  - consents and licences.
- **Chapter 4** describes the environmental measures that will be adopted during the construction of the proposed development in accordance with National Grid's environmental policy, and in accordance with the ES (**Volume 5, Documents 5.1 – 5.4**). The environmental measures will be implemented to avoid, reduce or compensate for effects on receptors identified in the following environmental topics:
  - landscape and views;
  - biodiversity and nature conservation;
  - geology, soils and agriculture;
  - the water environment;
  - the historic environment;
  - traffic and transport;
  - air quality;
  - noise and vibration;
  - socio-economics and land-use; and
  - public rights of way.

3. GENERAL SITE OPERATIONS

3.1 Objective

3.1.1 To construct the proposed development having regard to the safety and security of the public and construction staff and to mitigate the environmental impact of general site operations.

3.2 Health and Safety

3.2.1 National Grid is committed to ensuring the health and safety of persons working on projects and the protection of the environment is maintained in accordance with the Construction (Design and Management) Regulations 2015 (CDM) (**REF 1.1**) and the principles and philosophy behind them.

3.2.2 In accordance with health and safety legislation (**REF 1.2**), the contractors will prepare a Construction Phase SHE Plan prior to construction works commencing. A Construction Phase Health and Safety Plan will be prepared by the contractors for each element of the proposed development, including overhead line works, diversion works and demolition works. The Plan will ensure that adequate arrangements and welfare facilities are in place to cover:

- the safety of construction staff;
- the safety of all other people working at or visiting the construction site;
- the protection of the public in the vicinity of the construction site;
- overall compliance with health and safety legislation, approved codes of practice and industry best practice;
- emergency procedures being defined and adopted; and
- appropriate training and information being provided to personnel.

3.2.3 The contractors' Construction Phase SHE Plan will be reviewed by National Grid to ensure it meets CDM 2015 prior to construction commencing. As described at **section 2.11**, the SHE Plan will be managed, implemented and updated as necessary through the duration of the project by the Contractor Project Manager.

3.2.4 All staff, site visitors and delivery drivers will receive a relevant project induction by the contractors to ensure they are aware of site hazards and health, safety and environmental management requirements. Site staff will be briefed daily by the contractors prior to work commencing. Site-specific risk assessments will be carried out to ensure the risk strategy of the frequently changing workplace remains relevant. The contractors will be required to carry out audits and inspections throughout the proposed development in accordance with **section 2.12** of this CEMP.

3.2.5 Emergency contact for the public will be through the enquiries and complaints procedure as described in **section 2.10** of this CEMP.

3.3 Construction Hours

3.3.1 Construction work will take place in accordance with the 'Construction Hours' set out in **Schedule 3, Requirement 7** of the DCO.

3.4 Construction Site Layout and Appearance

3.4.1 The layout, appearance and operation of the construction site, site offices and compounds will be detailed prior to construction commencing and will comply with the commitments in this CEMP. In particular, the layout, appearance and operation of the construction site, site offices and compounds will be managed as follows:

- all working areas will be kept in a clean and tidy condition;
- smoking areas at site offices, compounds and construction sites will be equipped with containers for smoking waste and will not be located at the boundary of working areas or adjacent to neighbouring land;
- all necessary measures will be taken to minimise the risk of fire;
- workers will maintain a reasonable and appropriate standard of dress at all times and will not use foul language or display lewd or derogatory behaviour;
- appropriate measures, such as use of enclosed containers, will be employed to store waste susceptible to spreading by wind or liable to cause litter (see **section 3.7** of this CEMP and the OWMP (**Volume 5, Document 5.4, Appendix 3D**);
- fencing and other means of enclosure will be inspected daily and repaired as necessary (see **section 3.5** of this CEMP);
- adequate welfare facilities will be provided for all construction staff. All toilets will be serviced and kept clean (see **section 3.9** of this CEMP);
- good personal hygiene will be promoted by the contractors for the workforce, particularly when using site mess facilities;
- site accesses, accesses to site compounds and roads in the vicinity of site access points will be maintained and kept clean as required (see **section 4.7** of this CEMP);
- commitments relating to noise and vibration (see **section 4.9** of this CEMP);
- commitments relating to dust, odours and air pollution (see **section 4.8** of this CEMP);
- commitments relating to the handling, storage and disposal of materials (see **sections 3.7** and **4.4** of this CEMP); and
- appropriate management and disposal of foul water and sewage (see **sections 4.4** and **4.5** of this CEMP).

3.5 Fencing and Other Means of Enclosure

3.5.1 Working areas will be appropriately fenced from members of the public and to prevent livestock from straying onto a working area. Fencing will also delineate site boundaries to reduce the risk of site staff from unintentionally exiting working areas. Fencing and other means of enclosure at the construction compounds will comply with **section 4.2** of this CEMP.

3.5.2 Fencing and other means of enclosure in areas at risk of flooding will be permeable to floodwater, unless otherwise agreed with the EA, to ensure that the fluvial floodplain and areas liable to other sources of flooding continue to function effectively for storage and conveyance of floodwater.

3.5.3 Fencing and other means of enclosure will be inspected daily and repaired as necessary. Any temporary fencing will be removed as soon as reasonably practicable after completion of the works.

3.6 Lighting

3.6.1 The relevant planning authority will be consulted regarding details of any temporary external lighting to be installed during each stage of the proposed development, including measures to prevent light spillage. A lighting scheme will be produced under **Requirement 6** of the DCO.

3.6.2 The written details must incorporate the environmental measures in relation to lighting set out in the Generic Embedded Measures Schedule (**Volume 5, Document 5.4, Appendix 3B**) to avoid, reduce or compensate for potential effects on habitats and species.

3.6.3 Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during core working hours, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting.

3.6.4 Construction compounds will not be lit at night outside core working hours except for welfare and site security cabins that will include low level lighting. Motion sensor lighting will be used in areas of high security risk.

3.6.5 Other works required to be undertaken outside of the normal working hours may also require lighting, such as the installation of protective scaffold netting over roads or railways.

3.6.6 The lighting scheme will include measures to minimise the extent to which lighting associated with construction activity affects areas of habitats on or in the vicinity of the Site. This strategy will be informed by latest research and guidance.

3.6.7 External lighting, including security lighting will be minimised during the hours of darkness where possible. Should site compounds require security lighting these would be on a timer and motion sensitive. If the need to light trees or structures arises, advice will be sought from a suitably qualified ecologist, and additional bat surveys, assessment and mitigation may be required. Best practice guidelines would be followed during the works.

3.6.8 The following measures will also be implemented:

- lights installed will be of the minimum brightness and/or power rating capable of performing the desired function;
- light fittings will be used that reduce the amount of light emitted above the horizontal;
- light fittings will be positioned correctly and directed downwards;
- the direction of lights will seek to avoid spillage onto neighbouring properties;
- Passive Infra-Red (PIR) controlled lights will be considered for use where appropriate as these may be more acceptable to sensitive receptors than those which are controlled by a time switch or are on all the time; and
- unnecessary lights will be switched off.

3.7 Waste Management

3.7.1 National Grid and the contractors are responsible for managing waste arising from all activities in order to prevent pollution and to meet or exceed legal requirements (**REF 1.3, REF 1.4, REF 1.5 and REF 1.6**).

3.7.2 National Grid has prepared an OWMP (**Volume 5, Document 5.4, Appendix 3D**). The contractors will prepare and submit a SWMP to National Grid to include their associated works, which will be in accordance with the following measures, as provided in the OWMP:

- the consumption of raw materials and waste shall be minimised, through sound design and good practice in sustainable procurement;
- where waste is generated, opportunities for reusing or recycling the waste will be considered prior to disposal via landfill;
- waste materials will be stored securely on site in order to prevent their escape and protect them against vandalism, vermin or outside interference;
- hazardous waste (e.g. paints, solvents, sealants) will be segregated on-site to avoid contaminating other material and waste streams;
- storage of waste on site will either be:
  - within the scope of, and comply with, the requirements of one or more of the activities specified as exempt form Waste Management Licensing; or
  - carried out under an environmental permit issue by the EA.
- waste management activities on sites operating under an environmental permit will be managed by a nominated technically competent manager;
- all waste disposal contractors carrying waste will be authorised to do so and all sites that receive the waste will be authorised to do so;
- disposal of all waste will be accompanied by the relevant statutory transfer documentation that adequately describes the waste;
- quantities of waste generated will be recorded and monitored. Records will be kept for a minimum of three years;

- all employees and contractors will have a Duty of Care (**REF 1.3**) when controlling the carriage and disposal of waste to ensure it is handled in a responsible manner; and
- all staff and contractors working on the proposed development will be informed of which waste should be deposited where.

3.7.3 The relevant planning authority or other relevant statutory body will be consulted on the SWMP for the proposed development.

3.8 Security

3.8.1 Construction sites will be controlled in accordance with the statutory duty (**REF 1.2**) to prevent unauthorised access to the site. Site-specific assessments of the security and trespass risk will be undertaken at each site and appropriate control measures implemented. The control measures are likely to include:

- use of high perimeter fencing or hoarding for site security and public safety, and placed so that PRoW are maintained or appropriately diverted;
- use of site lighting at site perimeters, in accordance with **section 3.6** and the BMS (**Volume 5, Document 5.4, Appendix 3E**);
- use of appropriately trained and qualified security guards;
- consultation with Kent Police on security proposals for sites with regular liaison to review security effectiveness and response to incidents; and
- immobilisation of plant out of hours, removing or securing hazardous materials from site, securing fuel storage containers and preventing unauthorised use of scaffolding.

3.9 Welfare

3.9.1 No living accommodation will be permitted on the construction site. Onsite welfare facilities will be provided for all site workers and visitors. Welfare facilities will be kept clean and tidy, in accordance with **section 3.4** of this CEMP.

3.10 Pest Control

3.10.1 The risk of infestation by pests or vermin will be reduced by implementing appropriate storage and regular collection of putrescible waste. If infestation is found, removal and prevention measures will be implemented promptly in consultation with the Ecological Clerk of Works (ECoW) to ensure that no protected species is harmed as a result. Any pest infestation of the construction site will be notified to the local authority as soon as is practicable.

3.11 Invasive Species Management

3.11.1 As controlled species, there is a need to ensure that the proposed development does not result in contravention of the legislation relating to Japanese knotweed, water fern and Himalayan balsam.

3.11.2 The spread of these invasive species would be prevented by the implementation of best practice measures following EA guidelines, thus avoiding contravention of the legislation. Full details of the approach for managing Japanese knotweed, water fern and Himalayan balsam are provided in the CEMP (**Volume 5, Document 5.4, Appendix 3C**).

3.11.3 Due to the ability of Japanese knotweed, water fern and Himalayan balsam to establish and spread, pre works surveys would be conducted prior to any decommissioning works and if required, Method Statements would be developed and employed that reflect the legislation and biodiversity conditions in the Order limits prevalent at that time to ensure that no legal breaches occur.

3.12 Unexploded Ordnance

3.12.1 Risk assessments will be undertaken prior to each stage of construction commencing for the possibility of unexploded ordnance being found within construction areas. These will be used to specify safe working requirements, which may include advance magnetometer surveys at piling locations and appropriate training for site operatives. An unexploded ordnance specialist will be available on-call for any works in high risk areas. An Emergency Response Plan for unexploded ordnance will be prepared by the contractors and will be followed to respond to the discovery of unexploded ordnance. This will include notifications to the relevant local authorities, emergency services, residents and businesses.

3.13 Utility Works

3.13.1 Appropriate plans and schedules will be provided by National Grid to the contractors identifying all known utility infrastructure and any proposed diversions. Where changes to utility infrastructure cannot reasonably be avoided, the contractors will agree arrangements with National Grid and the owner of the utility equipment for it to be relocated.

3.14 Reinstatement of Land on Completion

3.14.1 Any land temporarily used for the construction of the proposed development will be reinstated in accordance with **Schedule 3, Requirement 13** of the DCO.

3.15 Consents and Licences

3.15.1 A number of sections of this CEMP reference consents, permits and licences that will be required during construction. The ES contains details of the consents and licences National Grid currently believes will be required to construct the proposed development that will be obtained outside of the DCO process. A Consents Register will be maintained by the Environmental Manager which will document all existing consent conditions, record all new applications made and the status of the applications.

4. ENVIRONMENTAL MANAGEMENT AND CONSTRUCTION PRINCIPLES

4.1 Objective

4.1.1 This chapter of the CEMP describes the environmental measures that will be implemented during the construction of the proposed development to avoid, reduce or compensate for adverse effects as identified in the ES (**Volume 5, Documents 5.1 – 5.4**), and in National Grid's environmental policy.

4.2 Landscape and Views

Objective

4.2.1 To undertake construction environmental measures so that adverse effects on landscape and visual amenity are avoided, reduced or compensated for as far as practicable during the construction of the proposed development.

4.2.2 Environmental measures relating to the operational phase of the proposed development are described in the Embedded Environmental Measures Schedule in the ES (**Volume 5, Document 5.4, Appendix 3B**).

4.2.3 In addition, there are a number of DCO Requirements (**Schedule 3**) relating to mitigation planting and vegetation protection for the operational phase of the proposed development as follows:

- **Requirement 8**: Mitigation Planting;
- **Requirement 9**: Implementation of landscaping and replacement planting;
- **Requirement 10**: Retention and protection of existing trees and hedgerows; and
- **Requirement 12**: Reinstatement schemes.

Environmental Measures

Topsoil Bunding

4.2.4 Topsoil will be stockpiled around the edges of the construction compounds, as detailed in the SAMP, to help visually screen the construction compounds from nearby receptors. Stockpiled soils will be covered with appropriate measures, for example, membranes, spraying or seeding.

Fencing

4.2.5 Aspects of location specific fencing requirements and mitigation measures will be detailed in Method Statements (MS) included in the BMS (**Volume 5, Document 5.4, Appendix 3E**).

Westbere Compound

4.2.6 A two storey residential property on Staines Hill (A28) (visual receptor ref A1.H64) is located adjacent and east of the Westbere Compound. The close proximity of

construction working areas to this residential property means that screen fencing is appropriate to further reduce visual effects.

Retained Trees and Hedges

4.2.7 With respect to the retention of trees and hedgerows to aid compartmentalisation, National Grid is committed to the following measures at construction compounds.

- a schedule of the construction compounds, the proposed development components to which they relate, their estimated duration of use, the facilities they would accommodate and the approximate percentage of land to be used shall be prepared;
- Trees to be retained are shown on Arboricultural Impacts Plans (**Chapter 5.4 Figure 3I.2 in the EIA**). This plan will be refined prior to construction to identify individual trees for removal; and
- All retained trees will be protected according to the Tree and Hedgerow Protection Strategy (**Schedule 3, Requirement 10**).

Arboricultural Measures

4.2.8 National Grid is committed to planting four trees for each tree lost to the proposed development. This commitment acknowledges the value of trees in their own right and also that there is substantial risk of failure if a single tree is planted as a replacement for one to be lost. Where groups of trees are lost, the total area (m^2) will be replaced at a rate of 1:1 (by area) which will necessarily include a greater number of individual trees than are lost. Hedgerow will also be replaced at a rate of 1:1 by length (m).

4.2.9 Arboricultural mitigation for the construction phase will be delivered in accordance with measures set out in the Arboricultural Impact Assessment (AIA) of the ES **(Volume 5, Document 5.4 Appendix 3I),** secured by **Schedule 3, Requirements 6, 8, 9 and 10** of the DCO.

4.2.10 Of particular relevance during the construction phase, **Schedule 3, Requirement 10** of the DCO States that:

'No stage of the authorised development may commence until, for that stage, a Tree and Hedgerow Protection Strategy (THPS) prepared in accordance with BS 5837:2012 (Trees in relation to design, demolition and construction) identifying the trees, groups of trees and hedgerows to be retained during that stage has been submitted to and approved by the relevant planning authority.'

4.2.11 The THPS will include tree protection plans, as detailed in **Section 8** of the AIA; a schedule of all proposed tree and hedge removal and pruning, with annotated plans; tree works management plans for specified areas of complex tree works; specification for temporary physical protection for trees and hedgerows; and details of an auditable system of compliance.

4.2.12 In accordance with **Schedule 3, Requirement 10** of the DCO, trees that are to be felled will be clearly identified. The Tree Impact Plans provided at **Volume 5, Document 5.4, Appendix 3I** will be refined where necessary, dependent on actual tree growth in relation to that predicted and any amendments to details of the Project in the Order limits and Limits of Deviation.

4.2.13 The management of waste arisings associated with surface vegetation removal, including trees and hedgerows, is detailed in the OWMP (**Volume 5, Document 5.4, Appendix 3D**).

Arisings from Arboricultural Works

4.2.14 The treatment of arisings (material produced by tree felling or pruning or hedgerow removal) will be detailed on a site by site basis along with the specification for pruning or removal, points of access and any other restrictions or requirements that are to be observed by the contractor. All works will be undertaken according to **British Standard 3998:2010 Tree Works Recommendations**.

4.2.15 The treatment of arisings will be determined according to a hierarchy of options. The options for treatment will address the distance arisings are to be moved (Displacement), and the resultant size of arisings (Processing). The preference will be to minimise both the Displacement and Processing of arisings.

4.2.16 The hierarchy of options is outlined below. This list is not exhaustive and not all options apply to all pruning operations (e.g. for small trees without timber value):

- leave tree in-situ;
- leave standing stem in-situ, stack branches in windrows or habitat piles;
- fell tree and leave in-situ (rarely suitable);
- fell tree, make stem safe, stack branches in windrows or habitat piles;
- cut up tree and stack in-situ;
- cut up tree and stack elsewhere on site;
- extract timber and stack branches on site;
- extract timber and chip branches on site;
- chip or mulch entire tree and leave on site;
- chip branches and remove from site, leave stem on site;
- remove all arisings from site, stem entire; and
- remove all arisings from site, stem ringed (e.g. for firewood).

4.2.17 Burning will not be considered unless this is specifically for biosecurity reasons. Burning may be required to control the spread of a known pest or disease. Such decisions would be made in accordance with current advice published by DEFRA and the Forestry Commission.

4.2.18 The Environment Agency (EA) considers arboricultural arisings to be virgin timber and not waste. This position is contingent on the material being mainly woody in composition and on the end use being 'one to which virgin timber is commonly put'. Examples of such uses are provided by EA and include: woodchip for landscaping, material for composting, fuel for an appliance, and a material to create or maintain a habitat as part of the natural cycle of land management.

4.2.19 All material that will be produced by tree pruning and felling operations will meet the EA criteria for virgin timber and therefore be capable of not being classed as waste. The purpose of the above hierarchy is to cause the least possible disruption to

nutrient and carbon cycling and to preserve or create habitats for invertebrates, fungi, small mammals and birds. Arisings that are left on site therefore create or maintain a habitat as part of the natural cycle of land management and are not classed as waste.

4.2.20 Where trees are felled, there will be a preference for the retention of stumps. In some situations, the removal of stumps will be required because they would present an obstruction to excavation or safe passage of plant, vehicles or pedestrians. Stump removal will be undertaken by stump grinding. This process mixes the pulverised stump fibres back into the surrounding topsoil and all arisings will be left in-situ. Excavation or ground works involving the removal of soils containing wood fibre from stumps or roots is considered as part of that excavation operation and not under the arboricultural impact assessment.

4.2.21 Arisings that must leave the site on which they were produced will be treated according to the above hierarchy, (i.e. with a preference for the shortest distance of travel and the least amount of processing). No arisings will be sent to landfill and all material will be recovered. It is anticipated that the majority of material will be recovered either as woodchip for landscaping, material for composting, firewood, woodfuel, or timber. It should be noted that only five of the above twelve options involve the removal of any material and only two options describe the removal of all material produced by tree works. Where material can be appropriately retained on the site of origin, the main purpose is to retain habitat functions associated with the features that have been removed such as connectivity of dormouse habitat, decaying wood for invertebrates or fungi and aerial cavities for bats. In addition, there is an imperative to reduce the removal of nutrient from each site by the extraction of arisings. It is therefore likely that a large proportion of tree works will fall under the above EA description: a material to create or maintain a habitat as part of the natural cycle of land management.

4.2.22 The mechanism for recovery and the selection of the preferred end use will be according to the individual contractor's and land owner's choice. It will also be the responsibility of each contractor to ensure that the appropriate licences and exemptions are in place for the transport, conversion and storage of any such material. Distance to sites may be factored into the selection of contractors to minimise the transport of arisings and all contractors must be able to demonstrate the end use of all arisings (normally for woodchip, compost or firewood). The end use of all arisings leaving site will be monitored by the Landscape Clerk of Works.

4.2.23 Where biodiversity has a mitigation plan in place for the pylon concerned, that plan will take precedence over these measures should they differ (legal aspects of protected species need to be considered first and many of the sites will be under derogation licences).

Inspections

4.2.24 A Landscape Clerk of Works (LCoW) will be appointed by National Grid to oversee and monitor all landscape works.

4.2.25 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with **sections 2.12** and **2.13** of this CEMP.

4.3 Biodiversity and Nature Conservation

Objective

4.3.1 The BMS is provided at **Volume 5, Document 5.4, Appendix 3E** and describes the environmental measures that will be implemented during (and where appropriate, following) the construction of the proposed development. The objectives of the BMS are to:

- ensure that construction works will be carried out to control and minimise disturbance to ecological interests/receptors, including designated sites;
- ensure that appropriate measures are adopted to protect the ecosystems within the working areas (the Order limits) and within the zone of influence of the works;
- avoid impacts on protected species in accordance with relevant good practice and legislative requirements; and
- ensure that habitats are reinstated where appropriate following completion of works.

4.3.2 The BMS sets out:

- ecological mitigation measures as identified within the Environmental Statement and specific best-practice measures to minimise the effects of the development on ecological receptors;
- measures for ecological supervision during the delivery of construction and mitigation activities;
- roles associated with the delivery of the work activities that need to take account of ecology including National Grid staff and contractors; and
- provision for and details of specific ecological mitigation plans and method statements or other management documents, where relevant (for example, the Natural England Great Crested Newt, Dormice and Bat Licence Method Statements).

Environmental Measures

4.3.3 The BMS describes the environmental measures that will be implemented during (and where appropriate following) the construction of the proposed development.

4.3.4 Prior to any stage of construction works commencing an ECoW will be appointed by National Grid who will be responsible for ensuring the BMS is implemented. As necessary they will be supported by other suitably qualified ecologists.

4.3.5 The ECoW will advise and provide support to National Grid and the Principal Contractor, who will have the responsibility to oversee the delivery of all construction and maintenance activities. The ECoW will report to the Project Engineer.

4.3.6 The ECoW will monitor that the measures outlined within the BMS are applied to work activities on site by the Contractor; this will be done in conjunction with the Project Engineer.

4.3.7 In summary, the ECoW will be responsible for the following activities:

- overseeing, in conjunction with the Project Engineer, the delivery of all measures detailed within the BMS (**Appendix 3E within Volume 5, Document 5.4**), including inspection, monitoring and quality control, of the embedded environmental (ecological) measures implemented by the Contractor during the construction phase;
- reviewing applicable documents, including risk assessments, method statements and evidence relating to all proposed work activities that may impact upon ecology to ensure they comply appropriately;
- advising the Project Engineer and contractors, in relation to how legal and contractual ecological management measures should be met;
- participating in tool box talks or other ecological briefings with the contractors;
- recording and reporting any ecological non-compliances to the Project Engineer, with advisory actions and responsibilities as appropriate.
- maintaining a Site Ecology Register (SER) of works conducted, from site establishment through to demobilisation. This should include weekly updates and a photographic record of activities carried out (and recommendations of future works);
- on request of the Project Engineer, meet landowners and occupiers to describe the BMS, its intentions, and its implications for their land interests;
- undertaking monitoring surveys as required (outline as required in **Sections 2-4** within the **BMS**); and
- liaison and reporting of ecological monitoring results as appropriate with Natural England to agreed timescales in respect of derogation licensing only.

4.4 Geology, Soils and Agriculture

Objective

4.4.1 To undertake the construction activities whilst reducing risks to soil resources and from potential contamination. The escape of stored materials, in particular liquids and hazardous materials, presents a risk to the environment. Storage, handling facilities and procedures will be designed to minimise that risk.

Environmental Measures

4.4.2 The following measures will be implemented during the construction of the proposed development to avoid or reduce the risk of contamination caused by construction activities.

4.4.3 The following Environment Agency Pollution Prevention Guidelines (PPGs) will be followed on site to prevent pollution.

- Guidance for storing and handling materials and products:
  i. PPG2: Above ground oil storage tanks;
  ii. PPG 6: Working at construction and demolition sites;
  iii. PPG 7: Refuelling facilities; and

iv. PPG 26: Drums and intermediate bulk containers.

- Guidance for site drainage, dealing with sewage and trade effluents:
  i. PPG 3: Use and design of oil separators in surface water drainage systems;
  ii. PPG 4: Disposal of sewage where no mains drainage is available; and
  iii. PPG 13: Vehicle washing and cleaning.
- Guidance on general good environmental practice:
  i. PPG 1: General guide to the prevention of pollution;
  ii. PPG 5: Works in, near or liable to affect watercourses; and
  iii. PPG 21: Pollution incident response planning.

Pre-construction Activities

Land affected by contamination

4.4.4 Contamination may be encountered when excavating any site, for example; oil, heavy metals, asbestos or other chemicals. Indications of contamination could include unusual colour, odour or appearance.

4.4.5 Technical baseline investigations (desk studies) have been undertaken during the design phase of the proposed development in line with the Model Procedures for the Management of Land Contamination (CLR11) (**REF 1.7**). The findings of these baseline studies were provided to the contractors and have informed the ES. These findings have been used to inform targeted intrusive ground investigations, which shall be undertaken in advance of construction. The process is as follows:

- Obtain and review updated unexploded ordnance surveys for relevant sections of the proposed development (see also **section 3.12** of this CEMP);
- review existing desk study data to identify requirements for intrusive ground investigation;
- site-specific intrusive ground investigation was undertaken in available areas. Analytical suites determined based on the desk study findings and field observations made during the ground investigation. Due to access issues and site conditions not all planned works could be undertaken, however, where required, additional ground investigations will be undertaken by the contractor prior to construction;
- generic quantitative human health and ground gas risk assessments undertaken;
- detailed quantitative risk assessments will be undertaken should generic risk assessment identify a potentially significant human health or ground gas risk; and
- should above items identify a potentially significant risk requiring remediation, then undertake remedial options appraisal and identify appropriate remediation / mitigation solution;
  - implement the detailed mitigation measures or remedial works;
  - verify the implemented mitigation measures or remedial works; and

- verification reports to be prepared as soon as possible, demonstrating that the remedial works have been successfully implemented, in accordance with the agreed scheme.

4.4.6 In addition to the above, the protection of controlled waters from leached contaminants, as discussed further in **section 4.5** below, will also need to be considered and incorporated into the above process.

4.4.7 Following the findings of the baseline technical studies and assessment provided in the ES (**Volume 5, Documents 5.1 - 5.4**), it is envisaged that any environmental management procedures identified as necessary by this process would fall within the following general scope:

- Dust control. This will be achieved by dust suppression measures (e.g. spraying with water), minimisation of dust generation (e.g. sheeting of soil stockpiles, planning of work to avoid temporary stockpiling in windy / exposed areas etc.) and construction phase compliance monitoring.
- Asbestos control. Any work involving materials suspected of containing asbestos to be undertaken in accordance with the Control of Asbestos Regulations (2012), by appropriately trained operatives. Operational procedures will be informed by occupational health and safety measures and environmental measures specific to the nature of the risk, and may include the use of specialist personal protective equipment by site workers (e.g. respiratory protection), the delineation of controlled areas for materials handling and air monitoring (including perimeter monitoring to ensure no risk to adjacent site users).
- Use of personal protective equipment (PPE) that is suitable for the ground conditions. This may range from standard measures, such as the use of gloves and dust masks, to specialist measures (as above).
- Re-use of soil arisings in a manner and location that is suitable for their chemical composition (see Outline Waste Management Plan). This will be achieved via a Materials Management Plan (MMP), which will be prepared by the contractor. A mandatory requirement of an MMP is to demonstrate that soil re-use does not demonstrate a risk to human health or the environment. Appropriate chemical classification testing will be undertaken to inform the MMP, as necessary.
- Soil Remediation. Chemical or physical remediation of contaminated soils e.g. in situ bioremediation of soils contaminated with hydrocarbons.
- Soil Disposal. Off-site disposal of any highly contaminated materials (e.g. asbestos sheeting) that cannot be directly re-used, or remediated and re-used, in accordance with the procedures described in the Outline Waste Management Plan.
- Validation of Imported Materials. Compliance testing on all incoming materials (e.g. any import to be used for access roads) to ensure chemical suitability.
- Ground gas protection. Confirmatory ground gas monitoring during construction works that may intersect gas sources or affect gas migration pathways, to ensure no off-site migration risk. In the very unlikely event that perimeter monitoring indicates that the works are causing significant gas

migration, then intervention would be undertaken to prevent this affecting nearby buildings (e.g. installation of in-ground ventilation measures / gas barriers).

- Use of appropriate concrete specification for ground conditions, in accordance with the recommendations of Building Research Establishment (BRE) Special Digest 1: Concrete in Aggressive Ground (2005).
- Use of specialist foundations where necessary, to prevent any ground instability effects.
- Specialist working methods when decommissioning pylons that may overlie landfill waste (i.e. pylons PX6 and PX23). These involve: minimisation of disturbance of surrounding soil when excavating foundations (foundations to be removed to 1.5m below ground level), use of personal protective equipment by construction workers (as required by the ground conditions), re-instatement of any very minor damage to landfill capping (to an engineered specification), damping down of excavation sides to prevent dust generation, removal of any waste arisings to a landfill, and ground gas monitoring to ensure no gas mobilisation (with intervention measures as discussed above in the very unlikely event that this identifies that decommissioning works are mobilising gas).

4.4.8 The baseline studies identified human health and ground gas risks which range from low to moderate. Therefore, it is unlikely that, following the implementation of the process described in **paragraph 4.4.7**, the full range of measures specified above will be required. However, the full range is presented to demonstrate that any ground contamination / ground gas that could reasonably be expected (i.e. 'reasonable worst case scenario', based on the desk study findings) will be satisfactorily mitigated. Specific details of the mitigation measures required, from this general range, will be specified within the Contractors Proposals under **Schedule 3, Requirement 13** of the DCO. In addition, occupational health and safety measures will be designed with regard to the ground conditions and will be specified within the Construction Phase SHE Plan. Work in excavations and trenches will be undertaken by trained operatives and in accordance with The Confined Spaces Regulations (1997) and should include gas monitoring within excavations / trenches.

4.4.9 In accordance with **Schedule 3, Requirement 13** of the DCO, any proposed remediation and detailed environmental measures will be presented to the local authority and other appropriate regulators for approval prior to implementation. Should the approved scheme identify that scheme is necessary a verification report that demonstrates the effectiveness of the remediation carried out will be produced, on completion of the remediation.

4.4.10 Professional advice will be sought only from those with demonstrable specialist competency in risk-based management of land contamination.

4.4.11 Should any unexpected contamination (i.e. that not identified by the ground investigation) be encountered during the construction phase, then work in the affected location will be suspended until the nature and concentration of the contaminants has been determined and appropriate risk control measures implemented, in accordance with the general process described in **Section 2.13** of this CEMP.

4.4.12 It should be noted that the information presented above relates to environmental management procedures that relate to human health risk and ground gas only. Measures relating to the protection of the Water Environment are discussed in **section 4.5** of this CEMP.

Piling Risk Assessment

4.4.13 All piling works will be informed by piling risk assessments undertaken in accordance with EA guidance 'Piling and Penetrative Ground Improvement Methods on land affected by Contamination: Guidance on Pollution Prevention (Report NC/99/73)' and 'Piling into Contaminated Sites'. Piling risk assessments will consider the underlying geology at pylon locations, which will be determined by pre-construction borehole investigations where necessary. If borehole investigations cannot be completed, a risk assessment will be based on published geological records to inform the conclusions of the piling risk assessment. Any subsequent mitigation will be agreed with the EA prior to construction commencing.

Construction Activities

Soil and Aftercare Management Plan (SAMP)

4.4.14 Measures to protect soils will be set out in a SAMP prepared by the contractor and will include, but not be restricted to, the following measures:

- The area within which soil disturbance will occur will be clearly delineated and no trafficking will take place outside this;
- construction traffic will be restricted to operating on the designated access roads and not on the unprotected soils;
- topsoil stripping will be restricted to the width of the permanent and temporary elements of the proposed development, thereby minimising disturbance to the integrity of the biomass;
- appropriate geotextile membranes, wooden matting or aluminium trackways will be used over particularly sensitive areas;
- in sensitive soil conditions, where the use of geotextile membranes is not appropriate, wheeled vehicles may be fitted with low ground pressure bearing pneumatic tyres to allow a greater distribution of weight;
- soil loosening techniques such as deep-tine cultivation will be used where required to break up any compaction which has occurred;
- subsoil and different superficial deposits will be stored separately to prevent mixing and will be reinstated in reverse order of excavation;
- topsoil and subsoil movements will only be undertaken in suitable conditions, for example, when it is not too wet, in accordance with DEFRA guidance (**REF 1.8**);
- soil stabilising methods will be undertaken in accordance with the SMP to reduce the risk of erosion, the creation of leachate and potential water quality issues;
- early re-seeding of the reinstated ground will be undertaken to help re-establish and stabilise the structure of the topsoil; and

- soils will not be stockpiled close to surface water features (refer to Water Environment **section 4.5** for further details). Stockpiled soils will be protected by appropriate measures, for example, permeable membranes, spraying or seeding to reduce the risk of windblown dust, surface water run-off and to reduce the risk of overland migration of silt and sediment to surface waters. Any excavated Made Ground (material that is not natural or agricultural soils) will be stored on an appropriate impermeable surface material and appropriate risk control measures will be implemented (in accordance with **section 2.13** of the CEMP).

The SAMP will be approved by the relevant planning authority prior to the commencement of any stage of construction works.

Construction Design Methods

4.4.15 The Order Limits contain various natural geotechnical challenges, including the presence of low lying compressible soils with a high water table in the east. Engineering design, within the parameters defined in the Project Description in **Documents 5.1-5.5, Chapter 3**, is able to address many of these issues. However, this will be supplemented by specific working methods in some instances. The precise requirements will be determined as a result of the detailed engineering design process. However, measures may include:

- Land drainage management, to minimise additional wetting / saturation of soils.
- Sheeting of soil stockpiles, to ensure that their condition is not damaged by water prior to re-use.
- Pre-removal of potentially collapsible deposits of Head / brickearth prior to construction, where thicknesses make this practically feasible.
- The use of 'floating roads' (with geogrid and stone sub-base) for access tracks on compressible soils.
- Restriction of plant movements per hour over compressible soils and use of specialist plant (e.g. low ground pressure bearing pneumatic tyres, as above).
- Proof rolling of the formation level prior to construction in instances where dewatering of compressible ground is unavoidable.

Soil and Aftercare Management Plan (SAMP): Localised soil or slope stabilisation works.

4.4.16 The contractor will protect the agricultural use of the land during and following the construction period, to allow for soil rehabilitation. Prior to commencement of construction any crop husbandry requirements through to crop harvest will need to be taken into account.

4.4.17 The area required for construction will be defined and provision for ongoing access to crop areas will be agreed with land owners/farmers.

4.4.18 Prior to commencement of construction, detailed underdrainage provisions that will be required to maintain drainage from undisturbed areas during construction will be designed. Any affected water supply and other agricultural supply pipes may also need to be rerouted prior to construction.

4.4.19 During construction and within working areas, weed control would be maintained to minimise the spread of pernicious and/or injurious weeds; the programme would take account of crop management in adjacent fields.

4.4.20 Following replacement of soils and on completion of construction and soil replacement, the restored profile would be surveyed to validate restored top and sub soil depth, stoniness and suitability for commercial agriculture.

4.4.21 The SAMP will provide the requirements for rehabilitation of the soils to an equivalent capability to that of the baseline conditions.

4.4.22 Maintenance of the new infrastructure, once operational, may involve the use of herbicides. Adverse effects on land quality will be avoided by compliance with DEFRA 'Code of Practice for Using Plant Protection Products' (2006).

Specification, Supply and Use of Materials

4.4.23 Where there is a suitable recycled or otherwise sustainable material which can be cost-effectively used, it will be preferred. Good practice in design and procurement will be adopted to keep stocks of materials to a minimum Specification, Supply and Use of Materials

Storage and Handling Requirements

4.4.24 The proposals for the storage of waste on site are detailed in the OWMP (**Volume 5, Document 5.4, Appendix 3D**). Details will also be provided in the OWMPs. Facilities will be provided for the collection, segregation, treatment and disposal of solid and liquid waste in accordance with the OWMP.

4.4.25 The following measures will be implemented on site for the storage of materials:

- all oil and diesel storage facilities will be at least 10m from any watercourse, ditch or drainage channel, and at least 50m from any spring, well or borehole;
- suitable and adequate spill kits, and drip trays or plant nappies (lightweight flexible spill containment trays with removable absorbent inserts) will be provided for all equipment and at locations where any liquids are stored and dispensed;
- storage facilities will be provided for solid materials to prevent deterioration of the materials and their escape;
- storage facilities will be kept secure to prevent acts of vandalism that could result in leaks or spills; and
- all containers of any size will be correctly labelled indicating their contents and any hazard warning signs.

Fuel Tanks, Mobile Bowsers and Bunds

4.4.26 In accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001 the following measures will be implemented on site for the prevention of spills:

- fuel tanks and mobile bowsers (and any other equipment that contains oil and other fuels) will have a secondary containment, for example, double skinned tanks. All tanks and mobile bowsers will be located in a sealed impervious bund;

- fuel fill pipes will not extend beyond the bund wall and will have a lockable cap secured with a chain;
- any tap or valve permanently attached to a tank or bowser through which fuel can discharge, will be fitted with a lock;
- where fuel is delivered through a pipe permanently attached to a tank or bowser:
  - the pipe will be fitted with a manually operated pump or a valve at the delivery end which closes automatically when not in use;
  - the pump or valve will be fitted with a lock;
  - the pipe will be fitted with a lockable valve at the end where it leaves the tank or bowser;
  - the pipework will pass over and not through bund walls;
  - tanks and bunds will be protected from vehicle impact damage; and
  - tanks will be labelled with contents and capacity information.
- all valves, pumps and trigger guns will be turned off and locked when not in use. All caps on fill pipes will be locked when not in use.

4.4.27 Suitable precautions will be taken to prevent spillages from equipment containing small quantities of hazardous substances (for example, chainsaws and jerry cans) including:

- each container or piece of equipment will be stored in its own drip tray made of a material suitable for the substance being handled; and
- containers and equipment will be stored on a firm, level surface.

Drum Storage

4.4.28 In accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001, where oil drums are over 200 litres it will be ensured that:

- multiple drums and containers have suitable secondary containment with sufficient capacity to contain at least 25% of the total volume of the containers or 110% of the largest container, whichever is the greatest;
- drum storage areas will be covered to prevent rainwater getting into bunds and drum pallets;
- drums will be labelled and positioned such that leaks cannot overshoot the bund or drip tray wall; and
- all containers are stored securely when the site is unattended.

Flammable and Hazardous Substances

4.4.29 All flammable and hazardous substances will be kept in a secure bunded cupboard, cabinet or tank constructed of materials which are chemically resistant to its contents.

Deliveries and Dispensing

4.4.30 For deliveries and dispensing activities it will be ensured that:

- site-specific procedures are in place for bulk deliveries;
- delivery points and vehicle routes are clearly marked;
- emergency procedures are displayed and a suitably sized spill kit is available at all delivery points, and staff are trained in these procedures and the use of spill kits;
- suitable facilities (for example, drip trays, drum trolleys, funnels) meet the sites specific dispensing needs and are maintained and used;
- tank capacities and current contents levels are checked prior to accepting a delivery to ensure that they are not overfilled;
- all deliveries are supervised throughout the delivery operation;
- spill prevention equipment is used during dispensing activities; and
- all spillages occurring during dispensing and handling activities are cleared up and reported via the Contractor Project Manager and are dealt with in accordance with **section 2.13** of this CEMP.

Vehicles and Plant

4.4.31 The use of vehicles and plant poses similar risks to those posed by storage of liquids. Fuel and oil may leak from such equipment which may enter drains and/or watercourses, as well as contaminating the ground itself. The following measures will be implemented to reduce this risk:

- vehicles and plant provided for use on the site will be in good working order to ensure optimum fuel efficiency, and be free from leaks. Plant with integral bunding and/or drip trays will be specified;
- sufficient spill kits will be carried on all vehicles;
- any hired vehicles and plant will be checked on delivery and not accepted if they are not in good working order for example, leaking, excessive fumes, excessive noise and/or smoke;
- vehicles and plant will be regularly maintained to ensure that they are working at optimum efficiency and are promptly repaired when not in good working order;
- vehicles and plant will not park near or over drains and will be washed in accordance with the commitments in the CTMP (**Volume 5, Document 5.4, Appendix 3G**);
- topping up of vehicles and plant will be carried out on hardstanding using drip trays and not over or near drains, or, where this is not reasonably practicable, drip trays and/or drain covers will be used to reduce the risk of spills;
- vehicles and plant will not be overfilled with fuel; and
- plant containing oils will be inspected daily and maintained to both prevent and identify leaks.

De-watering and Drainage

4.4.32 Details on dewatering and drainage are provided in **Section 4.5**.

Land Drainage

4.4.33 Land drains and ditch locations will be identified based on existing land drainage plans and/or identified during the works (in the absence of drainage plans). Land drainage will be re-routed for the duration of works. Post-construction drainage plans will be created when it has been necessary to install new permanent drainage.

4.4.34 The construction of access tracks may not require diversion and connection of existing drainage due to the excavations not exceeding 0.5m depth in those areas, but it will be monitored during the construction process.

4.4.35 The construction of towers will take place in fields where according to the drainage plans and landowners knowledge land drains are present. The absence of plans or information from landowner will not be regarded as evidence that land drains do not exist.

4.4.36 All land drainage works will be carried out according to Agricultural Development and Advisory Service (ADAS) 1995 'Technical Notes on Workmanship and Material for Land Drainage Schemes' which states that land drainage schemes should be protected and reinstated. Design is augmented by the pipe size determination from the Ministry of Agriculture, Fisheries and Food (MAFF) publication' The Design of Field Drainage Pipe Systems Reference Book 345'.

4.4.37 All land drainage works will be carried out by a Specialist Agricultural Land Drainage Contractor.

4.4.38 National Grid will maintain liaison with land owners to ensure they are kept informed and offered the opportunity to inspect connections of existing land drains.

4.4.39 Consents from the Environment Agency and Internal Drainage Board for outfalls into controlled watercourses will be required and an application will be necessary.

Inspections

4.4.40 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with **sections 2.12** and **2.13** of this CEMP.

4.4.41 In particular monitoring will be undertaken of:

- ground and surface water conditions for spills or uncontrolled tipped surface spoil;
- oil tanks and associated bunds for leaks; and
- plant containing oils will be inspected daily and maintained to both prevent and identify leaks.

4.5 Protection of the Water Environment

Objective

4.5.1 To comply with relevant statutory provisions including any consents required in respect of the water environment; to protect both the aquatic environment and to

avoid unacceptable adverse effects including changes to flow volume, water levels, water quality and watercourse morphology due to construction.

Environmental Measures

PPGs

4.5.2 All relevant EA Pollution Prevention Guidance (PPGs) will be followed on site to avoid pollution. The following PPGs will apply:

- Guidance for storing and handling materials and products:
  i. PPG2: Above ground oil storage tanks;
  ii. PPG 6: Working at construction and demolition sites;
  iii. PPG 7: Refuelling facilities; and
  iv. PPG 26: Drums and intermediate bulk containers.
- Guidance for site drainage, dealing with sewage and trade effluents:
  i. PPG 3: Use and design of oil separators in surface water drainage systems;
  ii. PPG 4: Disposal of sewage where no mains drainage is available; and
  iii. PPG 13: Vehicle washing and cleaning.
- Guidance on general good environmental practice:
  i. PPG 1: General guide to the prevention of pollution;
  ii. PPG 5: Works in, near or liable to affect watercourses; and
  iii. PPG 21: Incident response planning.

4.5.3 Further details for prevention of pollution from storage and handling of fuel, oil and other hazardous substances are provided in **section 4.4: Geology, Soils and Agriculture.**

4.5.4 A monitoring programme will be implemented to ensure that the measures taken to protect the water environment are effective, as described in **section 2.12** of this document.

Drainage Management Plan

4.5.5 In accordance with **Schedule 3, Requirement 14**, details of construction phase drainage management measures will be developed by the appointed contractors and will be presented in a Drainage Management Plan (DMP). This will be developed following detailed drainage investigations and hydrological assessments, which will determine potential location-specific risks in relation to the water environment, and identify appropriate control measures to avoid or reduce the risks. Examples of the mitigation measures that will be implemented to reduce the risk to the water environment are described below. A phased approach may be taken to the development of the DMP to reflect the phasing of the construction programme. The details of the DMP will be agreed with the relevant consenting authority (EA, IDB and/or KCC as appropriate) prior to the start of construction operations.

Stand-off distances from watercourses

4.5.6 Where possible, works within 8m (15m where navigable) of watercourse banktops will be avoided to minimise the number of Flood Defence (or Land Drainage) Consents required. An absolute minimum 3m stand-off distance from all watercourses/ waterbodies will be applied (with the exception of crossings and where existing field access roads that are already located adjacent to watercourses are to be utilised). This stand-off distance increases to 5m where environmental measures relating to Biodiversity receptors are required.

Flood Defence Consents

4.5.7 Flood Defence Consent/Land Drainage Consent will be obtained from the EA, IDB and KCC for all works within 8m of a Main River banktop (EA), 15m where tidal (EA), 8m for IDB watercourses and where works are proposed between the bank-tops of all other watercourses (KCC). Formal Flood Defence (or Land Drainage) Consent applications will need to demonstrate measures are in place to protect water quality and to minimise effects on watercourse morphology and conveyance, in order to ensure compliance with WFD objectives.

Watercourse crossings (culverts and bridges)

4.5.8 Culverts and watercourse crossings will be designed to minimise morphological and conveyance effects and sized to maintain existing flow conveyance. Clear span bridges will be used for those watercourses too wide or deep to be crossed using culverts; for example, the two temporary crossings proposed over the River Stour , and for crossings of larger drainage channels, including Sarre Penn, Sevenscore Dike, West Monkton Stream, East Monkton Steam, Minster Stream and the River Wantsum.

4.5.9 Culvert design will be chosen to minimise in-channel disturbance of bed and banks. Installation of culverts will be made in a dry channel (isolated from the channel flow) with overpumping of water made as necessary. No multiple pipes for culverts would be permitted. Culverts would have concrete bedding to prevent settling of the culvert and resultant loss of flow capacity.

4.5.10 Detailed design will require approval from EA via Flood Defence Consent (Main Rivers), or from IDB/KCC via Land Drainage Consent (Ordinary Watercourses).

Soil stockpiles

4.5.11 Soil stockpiles will be located at least 8m from all watercourses (15m from the Stour on account of EA access requirements). Where stockpiles run parallel to watercourses, the stockpiles will be located on the opposite side of the access road. Temporary soakaway ditches (as above) will be installed where required to capture sediment-laden runoff from soil stockpiles, with ditches installed adjacent to those stockpiles that are deemed to present a potential risk of runoff to water features. Silt fences may also be installed adjacent to soil stockpiles or at the Order Limits boundary where watercourses are in close proximity or downslope. The surface of stockpiled soils will be smoothed with excavators to reduce potential for runoff generation. With the exception of stockpiles with a lifetime of less than 3 months, all stockpiles will be seeded to encourage stabilisation of topsoil.

4.5.12 Breaks in soil stockpiles of 20m will be ensured at no greater than 80m intervals. Stockpile gaps will be located at topographic low points to preserve existing flow

paths. Where stockpiles are placed on either side of the access roads, the gaps should coincide.

Structures in the floodplain (stockpiles, access roads and working areas)

4.5.13 Access roads (and working areas) in the floodplain are to be as close to ground level as possible (a slight raise surface is often required to allow to for drainage). This is to minimise the loss of floodplain storage volumes associated with raised structures (such as raised access roads, working areas and associated topsoil stockpiles). Trackway will be used where possible. Cross drainage would be provided as necessary at topographic low points.

4.5.14 At specific locations, in the vicinity of identified receptors, no raised structures will be located within the floodplain. Access roads and working areas will be 'at grade' and any associated stockpiles will be located outside of the floodplain. Locations include the upper section of the River Great Stour valley in Canterbury, and in Sarre Penn valley the vicinity of Tile Lodge Farm and Nethergong Farm. These specific locations are indicated in the Flood Risk Assessment **(Volume 5, Document 5.4, Appendix 13A)**

Access routes, pylon working areas and laydown compounds

4.5.15 Access routes and works areas (including laydown compounds and pylon working areas) will be designed to be semi-permeable to allow infiltration (with the exception of fuel storage areas in the construction compounds, which will be underlain by low permeability material in order to ensure that any pollution incidents associated with spillages/leakages are contained). Access routes and working areas will be constructed of material at least as permeable as the topsoil removed (e.g. stone/crush gravel), where practicable. An exception to this is where temporary trackway is utilised to minimise the loss of floodplain storage, where additional drainage will be provided, such as infiltration trenches, as discussed below.

4.5.16 Run-off will generally not be drained via a piped or open channel drainage system (other than land drainage, as discussed in **Section 4.4**), but will instead be allowed to infiltrate wherever possible. Infiltration trenches will be used to promote infiltration of locally displaced runoff where required, such as alongside trackway where this is utilised. Further measures such as silt fencing will be installed to prevent runoff from disturbed areas from reaching watercourses where appropriate. Environmental measures will be provided in-situ in small scale measures in preference to larger regional systems.

4.5.17 All access road and working area construction material will be removed at the end of construction/demolition and reinstated with the topsoil stockpiles (to a level slightly above natural ground level to allow for settlement).

Laydown compound drainage (Westbere and Richborough)

4.5.18 Prior to the utilisation of any existing piped drainage systems, the contractor would investigate the suitability of such systems and replace elements and install additional measures, such as oil interceptors, where required. Detailed drainage strategies will be prepared for each compound, utilising SuDS principles for any areas requiring new drainage system. Drainage from areas not served by existing drainage systems will be designed in accordance with SuDS principles and at pre-development rates. SuDS measures may include attenuation storage; infiltration trenches/soakaways. Discharge of site drainage to Controlled Waters may be

subject to Environmental Permit from the EA. Any discharge to sewer will be subject to permit from the relevant sewage undertaker.

Discharges and permits

Approach to permitted discharges

4.5.19 Despite the temporary nature (assumed less than 3 months) of individual surface water run-off and groundwater dewatering discharges, and the measures designed to prevent pollution of surface watercourses, an Environmental Permit from the EA in relation to the discharge activity will likely be required across much of the Order Limits as a result of Local Wildlife Sites (LWS) present across some of the site. Elsewhere a permit may not be required, provided the exceptions as set out by the EA's regulatory position statement are met. Discharges will not be made without prior consent from the EA (or sewerage undertaker if discharges to sewer are proposed).

4.5.20 To ensure discharges are appropriately authorised, the following measures will be followed:

- consult with the appropriate consenting body (the EA for discharges to controlled waters, including rivers, other watercourses and soakaways and the local sewerage undertaker for discharges to sewer) before any discharge is expected to be required from the site and obtain a permit, or where a permit is not required, obtain written confirmation that one is not required;
- ensure that any permitted discharge is sampled and analysed at the frequency specified in the permit to ensure compliance and that monitoring results are kept, as noted in **section 2.12**. More frequent analysis may be required if analytical results indicate that limits are being approached or exceeded; and
- ensure that the consenting body is advised if results indicate that limits are being exceeded, and report the occurrence as an incident in accordance with **section 2.13** of this CEMP. Take immediate steps to rectify the situation; check receiving water for pollution resulting from exceedance; carry out any remediation works necessary.

Groundwater dewatering discharges

4.5.21 No silty water to be discharged directly into any watercourse. Groundwater dewatered from excavations (e.g. pylon foundation excavations) will be discharged to adjacent grassed/vegetated agricultural land, away from watercourses as far as possible. Where there remains the potential for this water to runoff into nearby surface water features, additional control measures will be put in place, which may include surrounding the discharge area (grassed/vegetated agricultural land) with sediment fencing or passing the silt-laden water through a Siltbuster® or similar. If infiltration is not possible, and discharge to a watercourse is required, this will be subject to a permit from the EA and will be proactively managed to meet the permit conditions. If discharges are at rates that could cause erosion to bed or banks, appropriate erosion control measures would be incorporated.

4.5.22 Dewatering will cease if a Flood Alert or Flood Warning has been issued by the EA for an area downstream. The receipt of the Flood Alert/Warning and actions to be taken will be detailed in the Emergency Response Plan for Flood Events discussed further below.

Disposal of accumulated rainfall/surface water

4.5.23 Rainwater and surface water may accumulate in a number of locations on site, for example in uncovered bunds and drip trays. This has the potential to become contaminated. Measures to reduce this risk will be included in the DMP, such as:

- bunds or drum pallets to be covered, where possible, to prevent the accumulation of rainwater. Where this is not possible, the below procedures will be followed;
- interceptor type drip trays to be provided rather than standard drip trays (for locations where drip trays will be permanently in place) or plant nappies (for mobile plant);
- if a standard drip tray or uncovered bund is used, the contractor will:
  - ensure it is regularly inspected (daily) and emptied either via tanker and disposed of immediately off site at an appropriately licensed facility (for large quantities) or to an on-site, bunded, storage facility for later off-site disposal (small quantities). The inspection frequency will increase during times of frequent rainfall;
  - check water from uncovered bunds for obvious signs of contamination (for example, visible oil and smells) in order that the correct disposal option can be identified;
  - ensure that only uncontaminated water is disposed of by draining it onto a grassed or stoned area on the site. The grassed or stoned area will be at least 10m from any drains and 50m away from any boreholes or wells. If contaminated, it will be disposed of as Hazardous Waste; and
  - ensure that any oil present is absorbed using a spill kit and disposed of as Hazardous Waste.

Management of other sources of effluent

4.5.24 In accordance with the EA PPGs, other effluents may be produced that need to be properly managed and controlled in order to prevent contamination of surface water. The contractor will ensure that:

- washing of equipment using detergent is carried out at commercial facilities only;
- washing of vehicles and equipment without the use of detergent is only carried out at either commercial facilities, or at purpose-built on-site wash stations (provision of which will be at the contractor's discretion) where the water is contained for controlled disposal;
- all foul effluent will be contained; and
- the foul effluent container will be subject to daily inspection and a maintenance and emptying schedule as recommended by the manufacturer. The effluent will be removed by tanker and disposed of at a licensed facility.

4.5.25 As discussed in **Section 4.4** of this report, works to mitigate any impacts to agricultural field drainage have been identified. For example, where field drains are excavated/encountered, measures will include local re-routing works, installation of lateral drains to allow new subsurface crossing of drain flow paths beneath access

roads for example (if applicable) or reinforcement above drains to protect from crushing/collapse.

Pylon foundations

4.5.26 Suitably corrosion and pH resistant concrete formulas will be utilised for pylon foundations to minimise the risk of leaching of harmful compounds into soil- and groundwater.

Protection of controlled waters from leached contaminants

4.5.27 The exposure of land affected by contamination, as a result of excavations and/or the stockpiling of topsoil, could result in the mobilisation of contaminants into nearby surface water bodies and/or groundwater.

4.5.28 Where the contamination desk study identifies the potential for land contamination, testing of the relevant material would be undertaken to assess the risk, and further measures taken as appropriate. Where a risk of contamination has been identified, intrusive investigations would be undertaken and suitable measures implemented prior to construction works and soil stockpile creation commencing. **Requirement 13** of the DCO would secure the implementation of suitable measures to protect controlled waters from potentially contaminative ground conditions. The installation of runoff control measures and ensuring that stockpiles are located away from watercourses, as discussed above, would further minimise the risk of contaminants arising from the excavation of contaminated land from reaching watercourses.

Emergency Response Plan for Flood Events

4.5.29 Emergency Response Plan for Flood Events will be prepared for all working areas located in Flood Zones 2 and 3. This/these will also cover those working areas that are accessed via Flood Zones 2 and/or 3, to/from which access/egress could be compromised during a flood event.

4.5.30 Details of emergency responses for different parts of the proposed route will be developed by the Contractor prior to commencement of construction in that area. The plan will detail the procedure to be followed if flooding of the construction site is expected:

- **Personnel to evacuate** the working areas at risk of flooding – this is the primary safety consideration, and is the highest priority in the unlikely event that there is insufficient time to undertake the following activities;
- **making the site safe** prior to evacuation – this would include appropriate storage of equipment and materials, securing items to prevent them being mobilised in, or causing pollution of flood water; and
- **removal of critical plant and equipment** from at risk areas – this may be removal from access roads or working areas, and could include raising critical items above the design flood level or removing them from the floodplain completely to one of the compounds.

4.5.31 To expedite response upon receiving an alert/warning, the following elements should be specified in the plan:

- areas at risk of flooding should be clearly marked on site access plans, including details of EA Flood Warning Areas;
- evacuation routes from flood risk areas should be clearly defined;

- the circumstances under which different responses would be implemented should be specified, with an escalation of response associated with increasing levels of danger. For example, a 'be prepared' alert may be raised upon receipt of an EA Flood Alert or a Met Office Severe Weather Warning for heavy rain, followed by an 'evacuate' order upon receipt of an EA Flood Warning, or at the discretion of the site HSSE Manager, based upon an appraisal of local conditions; and
- those items of plant and equipment that could be left in-situ without risk of damage or causing pollution should be identified, together with those items that should be evacuated, provided sufficient notice is provided and it is safe to do so.

4.5.32 In addition, as discussed previously, dewatering activities should be ceased when a Flood Alert or Flood Warning is received for an area downstream.

4.5.33 For any given area of construction, the flood response and evacuation plan(s) for that area should be finalised before commencement of works on site. All personnel should be briefed on the contents of the plan as part of the site induction process.

Inspections

4.5.34 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with **sections 2.12** and **2.13** of this CEMP.

4.6 Historic Environment

Objective

4.6.1 An Archaeological Mitigation Written Scheme of (AWSI) has been prepared which details the measures that will be implemented to mitigate the construction phase effects of the proposed development on heritage assets with archaeological interest. This is provided at **Volume 5, Document 5.4, Appendix 3F**. The environmental measures summarised in this section of the CEMP are described in further detail in the AWSI.

4.6.2 The AWSI will be updated prior to and during, each stage of the construction of the proposed development.

Environmental Measures

4.6.3 Prior to any stage of construction works commencing an appropriately qualified ACoW who will be responsible for ensuring the AWSI is implemented will be appointed by the contractor. The ACoW shall monitor the Archaeological Consultant and will report directly to National Grid. In addition, a specialist archaeological organisation or organisations will be appointed to implement the measures in the AWSI overseen by the ACoW.

4.6.4 All archaeological mitigation works will be managed in accordance with standard and guidance documents issued by the Institute for Archaeologists and best practice guidance notes issued by Historic England. These are listed in the AWSI **(Volume 5, Document 5.4, Appendix 3F).**

General Measures

4.6.5 The following general historic environment management measures from the AWSI will be implemented during the construction of the proposed development:

- locations and descriptions of all known heritage assets within and adjacent to construction works will be made available, including restrictions to construction methods to protect heritage assets, where these have been identified in the ES and the AWSI;
- a programme will be prepared detailing the implementation of archaeological mitigation works prior to and during construction;
- the archaeological mitigation programme will be incorporated into the overall construction programme;
- during all stages of construction, an archaeological specialist will undertake the works specified as an appropriate mitigation measure (including purposive investigation and/or watching brief works);
- all archaeological mitigation recording, analysis, dissemination and archiving will be undertaken by a suitably qualified and demonstrably experienced organisation; and
- the local planning authorities' archaeological representatives and/or Historic England will be consulted through all stages of the implementation of the programme of archaeological works (**see Volume 5, Document 5.4, Appendix 3F).**

Archaeological Remains

4.6.6 Suitable measures and procedures will be developed in consultation with the local planning authorities' archaeological representatives and/or Historic England, and will include the following as appropriate:

- archaeological excavation of known heritage assets. This will enable a greater understanding of the character and extent of the archaeological remains, and understand the magnitude of effect, and ensure that the loss of a material part of the assets significance is justified;
- archaeological controlled strip will be used to ensure the appropriate identification and treatment of archaeological remains during construction;
- an archaeological watching brief to ensure that any as yet undiscovered archaeological remains are appropriately identified and adequately recorded; and
- an agreed programme of geoarchaeological investigation through augering.

4.6.7 Throughout the works identified above consultation will be maintained with the relevant statutory bodies to ensure that the strategy for each identified heritage asset is proportionate and appropriate. This will include the option of considering preservation in situ for assets with high heritage significance. Preservation in situ could be achieved by:

- avoiding the heritage asset through a minor variation (within the Limits of Deviation) in the proposed working area;

- using non-open cut techniques; and
- protecting subsoil within the working area, for example, through the use of floating trackway panels, topsoil retention, or any other suitable technique.

4.6.8 Recordings of archaeological remains will be collected where preservation in situ is not warranted or achievable. Recordings will be undertaken by excavating each area of archaeological remains. Excavation will be carried out in accordance with a risk assessment and method statement (RAMS) that takes account of the relevant research aims and is proportionate to the nature and level of the asset's significance and the extent of the loss of significance.

4.6.9 All archaeological work will be subject to an appropriate programme of post excavation assessment, analysis, review and publication.

4.6.10 On completion of construction works, the temporary working areas will be reinstated pursuant to **Schedule 3, Requirement 13** of the DCO. Reinstatement measures will not include any intrusive activities in areas of known buried archaeology and where preservation in situ has been used. Any such areas will be identified on reinstatement plans. The reinstatement of archaeological earthworks such as ridge and furrow will follow the pre-construction contours unless otherwise agreed with the relevant local planning authority archaeological representative and/or Historic England.

Human Remains

4.6.11 Requirements of the Burial Act 1857 will be followed should human remains be located during construction, either during archaeological works or as part of construction activity in in accordance with **Article 47** of the DCO.

Treasure

4.6.12 Should artefacts be located during construction that are deemed by their material content or context to be treasure, as defined by the Treasure Act 1996 and the Treasure (Designation) Order 2002, then all necessary measures to comply with the requirements of that Act will be implemented.

Historic Hedgerows

4.6.13 Historically significant hedgerows have been identified within the historic environment baseline data. During construction, archaeological recordings will be undertaken by the ACoW for any gaps made in historically significant hedgerows. This will be undertaken through watching brief conditions, to record in section the hedgerow profile and any associated structure or dating evidence.

Protection of Military Remains

4.6.14 Where remains are observed during archaeological investigation or construction work which may constitute remains protected under the Protection of Military Remains Act 1986, intrusive work should cease and the site be secured while consultation with the Ministry of Defence is undertaken.

Built Heritage

4.6.15 The contractors will be provided with the locations and descriptions of all known heritage assets within and adjacent to construction works, including restrictions to construction methods, to protect built heritage assets where necessary.

Inspections

4.6.16 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with **sections 2.12** and **2.13** of this CEMP and measures described in the AWSI.

4.6.17 A specialist archaeological organisation will be appointed to implement the measures in the AWSI. The Archaeological Clerk of Works will monitor all archaeological mitigation works. If there are any significant archaeological findings, these will be reported by the archaeological contractor to the ACoW. The archaeological contractor will also maintain a log of the mitigation works undertaken and the results obtained and will update the historic environment data on a regular basis.

4.7 Traffic and Transport

Objective

4.7.1 To undertake the construction of the proposed development whilst minimising disruption to public travel and effects on the condition of the highways, a Construction Traffic Management Plan (CTMP) (**Volume 5, Document 5.4, Appendix 3G**) has been prepared, to mitigate the potential effects of construction traffic on local communities and the environment. The CTMP describes the mitigation measures that will be implemented during the construction of the proposed development, in accordance with **Schedule 3, Requirement 16** of the DCO, as appropriate.

Environmental Measures

4.7.2 The measures that will be implemented through the CTMP, include:

- a Transport Co-ordination Officer (TCO) will be appointed, prior to construction, to implement and monitor the traffic and transport requirements of this CTMP;
- only those construction traffic routes and access roads which have been agreed with the relevant authorities will be used;
- a ‘Banksman’ or other qualified personnel will be in place at all bellmouth locations to guide construction traffic; and record arrivals and departure of vehicles against the deliveries schedule;
- condition surveys will be conducted on the Local Road Network (LRN) (including access roads and connections to the LRN), PRoW and cycle routes;
- temporary Traffic Management (TTM) procedures will be used where required to enhance safety conditions on the LRN and mitigate potential impacts of the construction of the bellmouths and access roads;
- temporary closures of the River Great Stour to navigation will be required where works are located over/near to the waterway. Notification will be provided to boat clubs and harbour master to enable closure and erect appropriate warning/information signage for users of the river. Warning signs and emergency mooring buoys will be provided upstream and downstream of these works;

- discussions with Network Rail to coordinate any required track possessions and the timetable to avoid peak service times when travelling over railway level crossings; and
- temporary relocation of bus stops located near to access roads and bellmouths.

Road Sweeping

4.7.3 Road sweeping will be undertaken where required and in accordance with the CTMP (**Volume 5, Document 5.4, Appendix 3G**), to remove deposits of silt from roads and reduce the risk of silt being washed into surface water gullies and watercourses.

Inspections

4.7.4 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with **sections 2.12** and **2.13** of this CEMP and measures described in the CTMP.

4.7.5 The Transport Co-ordination Officer (TCO) will ensure that the measures in the CTMP are implemented. Information packs will be provided to all contractors which will contain the details of the commitments in the CTMP.

4.8 Air Quality

Objective

4.8.1 To undertake the construction of the proposed development whilst minimising emissions of dust and other pollutants to avoid effects on air quality.

Environmental Measures

Dust and Smoke

4.8.2 The following measures will be implemented where practicable to reduce the effect of dust and smoke from construction activities:

- Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary if applicable to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/ deliveries which might be using the same strategic road network routes;
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty activities or the site boundary so that they are at least as high as any stockpiles on site;
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- Avoid site runoff of water or mud;
- Keep site fencing and barriers clean using wet methods;

- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site;
- Cover, seed or fence stockpiles to prevent wind whipping;
- Ensure all vehicles switch off engines when stationary - no idling vehicles;
- Avoid the use of diesel or petrol powered generators and use mains electricity, solar or battery powered equipment where practicable;
- Impose and signpost a maximum-speed-limit of 10mph on unsurfaced access roads and work areas (if long access routes are required, these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the Local Authorities, where appropriate);
- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips, should they be required;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate;
- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods;
- No bonfires and burning of waste materials;
- Ensure effective water suppression is used during demolition operations where applicable. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground;
- Do not undertake explosive blasting, using appropriate manual or mechanical alternatives;
- Bag and remove any biological debris or damp down such material before demolition;
- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Only remove the cover in small areas during work and not all at once;
- Avoid scabbling (roughening of concrete surfaces) if possible;

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust;
- 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;
- Inspect on-site access routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
- Install hard surfaced access routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned;
- Implement a wheel washing system;
- Ensure there is an adequate area of hard surfaced road between the wheel washing area and the site exit, wherever site size and layout permits;
- Access gates to be located at least 10m from receptors where possible;
- Construction vehicles should avoid travelling through Air Quality Management Areas (AQMAs) where possible, namely, the Canterbury City Council AQMA;
- Waste will be disposed of in accordance with the OWMP (**Volume 5, Document 5.4, Appendix 3D**) and the OWMPs; and
- Alternative methods for business travel will be considered by all employees to reduce vehicle use.

Odour

4.8.3 Covers will be put over items liable to emit odour to minimise fugitive emissions.

Inspections

4.8.4 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with **sections 2.12** and **2.13** of this CEMP. Daily inspections both on and off-site will be undertaken to monitor dust, comprising regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary. The frequency of inspections will be increased when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

4.8.5 Records will be kept of air quality incidents and complaints in accordance with **section 2.11** of this CEMP.

4.9 Noise and Vibration

Objective

4.9.1 To undertake the construction of the proposed development whilst minimising noise and vibration on sensitive receptors.

Environmental Measures

4.9.2 Works will be undertaken in accordance with the Noise and Statutory Nuisance Act 1993 and in accordance with British Standard for Noise and Vibration (**REF 1.9**). A Noise and Vibration Management Plan (NVMP) will be submitted to and approved by the relevant planning authority prior to construction implemented to reduce effects from noise and vibration from the construction activities of the proposed development in accordance with **Schedule 3, Requirement 6** of the DCO. Measures contained within the NVMP should include:

- construction work will be undertaken in accordance with **Schedule 3, Requirement 7** of the DCO;
- If necessary, consent will be sought by the contractor under Section 61 of the Control of Pollution Act 1974;
- works will be restricted to weekday daytime only where significance thresholds would otherwise be exceeded at sensitive receptors;
- loading and unloading activities will be located as far as reasonably possible from residential properties;
- mains electricity will be used rather than diesel generators where connection to mains electricity is possible;
- exhaust silencing and plant muffling equipment will be fitted and maintained in good working order;
- low-noise generators and quieter plant and equipment will be used and will conform to European standards (**REF 1.10**);
- the bunding (soil stockpiles) and fencing proposed at the construction compounds be maintained to help to attenuate noise;
- construction traffic movements will be undertaken in accordance with the CTMP (**Volume 5, Document 5.4, Appendix 3G**);
- reverse alarms will incorporate at least one of the following features: directional sounders, broadband signals, self-adjusting sounders, and/or flashing warning lights;
- internal access roads will be well maintained;
- vehicles will not wait or queue on the public highway with engines idling;
- engines will be turned off when vehicles are not in use to avoid ‘idling’;
- plant and equipment will be shut down when not in use;
- plant and equipment will be started-up sequentially rather than simultaneously; and

- drop heights of materials will be minimised.

Inspections

4.9.3 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with **sections 2.12** and **2.13** of this CEMP.

4.9.4 Records will be kept of noise and vibration incidents and complaints in accordance with **section 2.10** of this CEMP.

4.10 Socio-Economic and Land Use

Objective

4.10.1 To undertake the construction of the proposed development whilst avoiding, minimising or compensating for the adverse effects and to enhance anticipated positive effects of the proposed development.

Mitigation and Enhancement Measures

4.10.2 Opportunities will be sought to maximise the procurement of materials and employees from within the South East.

4.10.3 A SAMP (as described at **section 4.4** of this CEMP) will be prepared, which provide relevant guidance in relation to the reinstatement of agricultural land to maintain existing agricultural land quality.

4.10.4 A PRoWMP (**Volume 5, Document 5.4, Appendix 3H**) will be implemented, as described at **section 4.11** of this CEMP, which seeks to minimise the extent to which usage of PRoW is disrupted.

4.10.5 Consultation will be undertaken with the relevant authorities prior to each stage of construction commencing to identify and understand any constraints in the area that will need to be accounted for.

Inspections

4.10.6 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with **sections 2.12** and **2.13** of this CEMP.

4.11 Public Rights of Way

Objective

4.11.1 To undertake the construction of the proposed development whilst avoiding, reducing or compensating for effects on the PRoW network. A PRoWMP is provided at **Volume 5, Document 5.4, Appendix 3H**. Measures described in the PRoWMP are summarised in this section of the CEMP.

Environmental Measures

PRoW General Management

4.11.2 All points where PRoWs cross the proposed development will have appropriate signage, which will advise of dates and hours of working. Management may

involve the use of contractors staff at those crossing points where and when construction works affect a PRoW.

Temporary PRoW Closure and Temporary Diversion

4.11.3 Where a PRoW has been identified for a longer duration temporary closure, a temporary diversion will be established. Signage will be used confirming dates and hours of working.

Signage

4.11.4 Signs will be erected warning PRoW users of construction work. Information signs detailing works will be maintained.

4.11.5 The location of signs providing information of temporary diversions and closures will be discussed with the PRoW Officers.

Safety Measures

4.11.6 Suitable fencing will be erected where appropriate to form a safe corridor for users of the PRoW.

Condition Surveys

4.11.7 Pre-commencement condition surveys will be undertaken of the PRoW prior to the commencement of construction. The surveys will include photographic records and written descriptions.

Reinstatement of PRoW

4.11.8 The directly affected PRoW will be reinstated as a minimum to the same condition as was recorded prior to the commencement of construction.

Inspections

4.11.9 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with **sections 2.12** and **2.13** of this CEMP. Inspections will be undertaken on the PRoW directly affected by construction and where the environmental measures have been implemented, to ensure that all signage and fencing are still in place and that the condition of the PRoW is suitable for use within the working area.

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5. REFERENCES

REF 1.1 The Construction (Design and Management) Regulations, 2015

REF 1.2 The Management of Health and Safety at Work Act 1999, Health and Safety Executive

REF 1.3 The Waste (England and Wales) Regulations, 2011

REF 1.4 Water Resources Act, 1991

REF 1.5 Hazardous Waste (England and Wales) Regulations 2005, (as amended by the Hazardous Waste (England and Wales) Regulations 2009

REF 1.6 Waste Framework Directive, 2008

REF 1.7 Model Procedures for the Management of Land Contamination (CLR11), 2004

REF 1.8 Department for Environment Food and Rural Affairs (DEFRA), Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, 2009

REF 1.9 British Standard 5228-1:2009+A1:2014, Code of Practice for Noise and Vibration Control on Construction and Open Sites Noise, 2009 (amended February 2014)

REF 1.10 European Commission, 2002/49/EC, The Environmental Noise Directive, 2002

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