

# Tillbridge Solar

PEI Report Volume II Appendix 3-1: Framework Construction Environmental Management Plan (CEMP)

April 2023

[tillbridgesolar.com](http://tillbridgesolar.com)

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@: [info@tillbridgesolar.com](mailto:info@tillbridgesolar.com) T: 0800 046 9643

**Prepared for:**

Tillbridge Solar Ltd

**Prepared by:**

AECOM Limited  
AECOM House  
63-77 Victoria Street  
St Albans  
Hertfordshire AL1 3ER  
United Kingdom

T: +44(0)1727 535000  
aecom.com

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# 1. Introduction

## 1.1 Background

- 1.1.1 Tillbridge Solar Ltd (hereafter referred to as ‘the Applicant’) is seeking consent for the construction, operation and decommissioning of the Tillbridge Solar scheme (hereafter referred to as the ‘Scheme’). This will require an application for a Development Consent Order (DCO), which will be submitted to the Planning Inspectorate, with the decision of whether to grant a DCO being made by the Secretary of State pursuant to the Planning Act 2008 (Ref. 1).
- 1.1.2 This Framework Construction Environmental Management Plan (CEMP) has been prepared to accompany the Preliminary Environmental Information (PEI) Report and presents a framework for environmental management during the construction phase of the Scheme, with the aim to provide a clear and consistent approach to environmental mitigation during construction. Following the next stage of the Scheme design and the updated assessments completed within the Environmental Statement (ES), this Framework CEMP will be updated and submitted with the DCO application.
- 1.1.3 If the DCO application is approved, a detailed CEMP will be produced for the Scheme following the appointment of a Principal Contractor in accordance with a Requirement of the DCO and prior to commencement of construction. The detailed CEMP will be required to be in accordance with the measures included in the Framework CEMP.
- 1.1.4 This document does not address operational or decommissioning activities, which would be subject to separate environmental management plans and procedures. A Framework Operational Environmental Management Plan (OEMP) and a Framework Decommissioning Environmental Management Plan (DEMP) will be prepared to accompany the DCO application and secured as necessary through a Requirement of the DCO.

## 1.2 Scheme Description

- 1.2.1 The Scheme is to east and south-east of Gainsborough in Lincolnshire, located approximately 5km to the east of Gainsborough and approximately 13km to the north of Lincoln.
- 1.2.2 The Scheme comprises two distinct elements:
- ‘the Principal Site’, which is the location where ground mounted solar photovoltaic (PV) panels, electrical sub-stations and energy storage facilities will be installed; and
  - ‘the Cable Route Corridor’, which will comprise the underground electrical infrastructure required to connect the Principal Site to national transmission system.

### The Principal Site

- 1.2.3 The Principal Site is located to the south of Harpswell Lane (A631), to the west of Middle Street (B1398) and largely to the north of Kexby Road and to the east of Springthorpe. The Principal Site covers an area of approximately

1,400ha and is located entirely within the administrative area of West Lindsey District Council.

## **The Cable Route Corridor**

- 1.2.4 The Principal Site will be connected to Cottam National Grid sub-station located at the decommissioned Cottam Power Station in Cottam on the Nottinghamshire border by a buried high voltage cable installed within the Cable Route Corridor. The Cable Route Corridor is approximately 16km long (approximate distance between the Principal Site and Cottam Power Station) and is located within the administrative area of West Lindsey District Council and Bassetlaw District Council.

## **1.3 Summary**

- 1.3.1 This Framework CEMP covers the main construction activities envisaged at the time of preparing the PEI Report. A detailed project description will be produced for the ES that will be referred to in the detailed CEMP(s).

## 2. Construction Environmental Management and Programme

### 2.1 Introduction

2.1.1 This section sets out the construction and general site arrangements for the Scheme.

### 2.2 Roles and Responsibilities

2.2.1 Key roles and responsibilities during the construction phase in managing environmental impacts will likely include, but are not limited to:

- Site Manager – Overall responsibility for activity onsite and will be based onsite full time.
- Construction Project Manager - Overall responsibility for ensuring all elements in the DCO, CEMPs and all environmental legal and other requirements are implemented, and appropriately resourced, managed, reviewed and reported.
- Environment Manager - Responsible for the overall management of environmental aspects on site, ensuring environmental legislation and best practices are complied with, and environmental mitigation and monitoring measures identified are implemented. The Environmental Manager will oversee environmental monitoring on-site and carry out regular environmental site inspections, reporting and responding to any incidents or non-compliance. The Environment Manager will liaise with relevant environmental bodies and other third parties as appropriate.
- Environmental Clerk of Works (ECoW) – Oversee the management of and provide advice about environmental and ecological risks during construction including for example, management of protected species, surface water management, pollution, air quality and noise.
- Ecological Clerk of Works (EcoCoW) - Management of the risks to biodiversity on construction sites, advising protecting valued biodiversity features and providing practical solutions.
- Flood Warden – There will be a dedicated responsibility to be prepared for, and manage, the response to flood incidents.
- Health and Safety Manager – Responsible for the monitoring and controlling of health and safety compliance and related rules and regulations on-site.
- Community Liaison Officer - A Community Liaison Group will be set up in accordance with the relevant DCO requirement prior to construction and will continue through until final commissioning of the Scheme as a formal forum for local issues to be raised. A Community Liaison Officer will be appointed to lead discussions with local communities, and also act as the primary point of contact should there be any queries or complaints.

- 2.2.2 These roles and responsibilities are indicative and will be confirmed in the detailed CEMPs.

## 2.3 Construction Programme

- 2.3.1 The current expectation is that construction of the Scheme will take approximately 24 months.
- 2.3.2 Allowing sufficient time to receive consent and to discharge the DCO Requirements, it is anticipated that the earliest that site preparation and enabling works on-site for the Scheme would start is 2025, with an expected operational start in 2027.
- 2.3.3 More details on the construction phasing will be provided within the detailed CEMP(s) to be agreed with the local planning authorities post consent.

## 2.4 Working Hours

- 2.4.1 Core construction working hours on-site will run from 07:00 to 19:00 on Monday to Friday and 07:00 to 13:00 on Saturday, with working days comprising one 12-hour shift, with employees travelling to and from the site outside these times. Where on-site works are to be conducted outside the core working hours they will comply with the restrictions stated in the CEMP and any other restrictions agreed with the relevant planning authorities.

## 2.5 Implementation of the CEMP

- 2.5.1 The measures included in this Framework CEMP are based on the potential environmental impacts that have been identified in the PEI Report.
- 2.5.2 The Framework CEMP is designed with the objective of achieving compliance with the relevant environmental legislation and securing the environmental mitigation measures set out within the PEI Report (and ES at the next stage).
- 2.5.3 A range of 'standard' or good industry and best practice mitigation and construction management measures have been accounted for in the environmental assessments presented within the PEI Report and these will be implemented during construction of the Scheme. This Framework CEMP demonstrates how these commitments in the PEI Report will be implemented. It also sets out the monitoring and auditing activities designed to demonstrate that such environmental mitigation measures are carried out and that they are effective.
- 2.5.4 The appointed Principal Contractor will be responsible for implementing the environmental mitigation measures documented in the Framework CEMP, subject to grant of the DCO and as a contractual responsibility to the Applicant, as the Applicant will ultimately be responsible for compliance with the requirements of the DCO.
- 2.5.5 It is considered likely that there will be more than one detailed CEMP prepared for the Scheme; for example where different contractors are involved in different aspects of the Scheme. This will be determined by the appointed Principal Contractor once the detailed construction programme is known.

## 2.6 Control of Noise

- 2.6.1 Section 61 Consents would be obtained for the Scheme where noisy works outside of normal working hours are anticipated. This would include agreed construction noise limits for nearby noise sensitive receptors and in accordance with any other restrictions agreed with the relevant planning authorities. Compliance with these noise limits will ensure adverse effects are unlikely.
- 2.6.2 Abnormal or emergency construction traffic movements may occur outside of normal working hours. In the event of these occurrences, specific noise mitigation measures will be put in place to reduce potential noise impacts at nearby noise sensitive receptors.

## 2.7 Control of Light

- 2.7.1 Construction temporary site lighting, in the form of mobile lighting towers with a power output of 8 kilo volt-amperes (kVAs), will be required in areas where natural lighting is unable to reach (e.g. sheltered/confined areas) and during core working hours within winter months. Artificial lighting would be provided to maintain sufficient security and health and safety for the Scheme Boundary and construction staff, whilst adopting mitigation principles to avoid excessive glare and minimise spill of light to nearby receptors (including ecology and residents) outside of the Scheme Boundary as far as reasonably practicable.
- 2.7.2 All construction lighting will be deployed in accordance with the following recommendations to prevent or reduce the impact on human and ecological receptors:
- The use of lighting will be minimised to that required for safe site operations;
  - Lighting will utilise directional fittings to minimise outward light spill and glare (e.g. via the use of light hoods/cowls which direct light below the horizontal plane, preferably at an angle greater than 20° from horizontal); and
  - Lighting will be directed towards the middle of the Scheme Boundary rather than towards land outside of the boundaries.

## 2.8 Traffic Management

- 2.8.1 During construction, the Principal Contractor will ensure that the impacts from construction traffic on the local community (including local residents and businesses and users of the surrounding transport network) are minimised, where reasonably practicable, by implementing the measures set out in the Transport Assessment (**PEI Report Volume II Appendix 15-1**), Framework Construction Traffic Management Plan (CTMP) (**PEI Report Volume II Appendix 15-2**) and **PEI Report Volume I: Chapter 15: Transport and Access** of the PEI Report. These documents will be updated during the production of the ES that will be submitted with the DCO application.
- 2.8.2 The Framework CTMP will set out the proposals to manage construction traffic during the construction of the Scheme and considers the management of all



freight traffic (i.e. heavy goods vehicles (HGVs)), as well as staff traffic to the car parks located on the Principal Site.

- 2.8.3 The detailed CTMP will be developed by the Principal Contractor in consultation with the appropriate local planning authorities and will be secured by a Requirement of the DCO. This would include a Travel Plan and will encourage staff to utilise sustainable modes of transport for journeys to and from the site where possible.

## 2.9 Parking Provisions

- 2.9.1 There will be two central car parking areas, with a maximum cap of 500 spaces, off the main access routes during construction. Workers will utilise these two car parks and will be transported to the various locations within the Scheme Boundary via minibus shuttle service; refer to Framework CTMP (**PEI Report Volume II Appendix 15-2**). A self-contained wheel wash will be installed to be used by vehicles prior to exiting the Principal Site onto the public highway if there is mud or debris on the construction site. For loads unable to use the fixed wheel wash, a localised wheel washing would be set up to cater for these individually and as required to ensure no detrimental effect to the highway.

## 2.10 Recycling and Disposing of Waste

- 2.10.1 In order to control the waste generated on-site during site preparation and construction, the contractor will separate the main waste streams on-site, prior to transport to an approved, licensed third party waste facility for recycling or disposal.
- 2.10.2 A Construction Resource Management Plan (CRMP) will be prepared by the Principal Contractor, which will specify the waste streams to be estimated and monitored and goals set with regards to the waste produced. The CRMP will be finalised with specific measures to be implemented prior to the start of construction, in accordance with a Requirement of the DCO.
- 2.10.3 All waste to be removed from the Scheme Boundary will be undertaken by fully licensed waste carriers and taken to licensed waste facilities.

## 2.11 Consents, Licences and Permits

- 2.11.1 Any additional construction licences, permits or approvals that are required will be listed in the detailed CEMP(s), including any environmental information submitted in respect of them.

## 2.12 Best Practice Measures

- 2.12.1 The Considerate Constructors Scheme (CCS) will be adopted to assist in reducing pollution and nuisance from the Scheme, by employing best practice measures which go beyond statutory compliance.

## 2.13 Security

- 2.13.1 Site security during construction will be managed by the contractor(s). The site security fencing will remain in place throughout the duration of the construction period. Any storage of materials will be kept secure to prevent theft of

vandalism. A safe system for accessing the materials storage areas would be implemented by the contractor(s).

2.13.2 There will be designated security staff during construction who will manage the Order limits and patrol the perimeter

## 3. Management and Mitigation Plan

3.1.1 This section of the Framework CEMP sets out the mitigation and management measures to be included as a minimum in the detailed CEMP(s). It also sets out monitoring requirements and the responsible party identified for each mitigation/ enhancement measures or monitoring requirement. This section will be updated for the ES and again following consent when the Framework CEMP is updated to a detailed version.

**Table 3-1: Air Quality**

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Increased particulates and deposited dust from site activities, materials transportation, storage and handling, including use of haul roads.	<p>Appropriate standard and best practice control measures will be included in the detailed CEMP(s), which may include, but not be limited to:</p> <p><b>Communication</b></p> <ul style="list-style-type: none"> <li>• Develop and implement a stakeholder communications plan that includes community engagement before work commences on-site.</li> <li>• Display the name and contact details of person(s) accountable for air quality and dust issues on the Scheme. This may be the environment manager/engineer or the site manager.</li> <li>• Display the head or regional office contact information.</li> <li>• Develop and implement a Dust Management Plan (DMP) (which will be produced post consent), which may include measures to control other emissions, approved by the Local Authority. The DMP may include monitoring of dust deposition, dust flux, real-time PM<sub>10</sub> continuous monitoring and/or visual inspections.</li> </ul> <p><b>Site Management</b></p> <ul style="list-style-type: none"> <li>• Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.</li> <li>• Make the complaints log available to the local authority when asked.</li> <li>• Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.</li> </ul>	<p>Measures in the detailed CEMP(s) will include:</p> <ul style="list-style-type: none"> <li>• Undertaking daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of Scheme, with</li> </ul>	<p>To be included in the detailed CEMP(s) prepared by the Principal Contractor.</p>

**Potential Impact Mitigation / Enhancement Measure**

**Monitoring Requirements**

**Responsibility**

<ul style="list-style-type: none"> <li>• Hold regular liaison meetings with other high-risk construction sites within 500m of the Scheme (or greater, 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.</li> </ul> <p>Preparing and Maintaining the Site</p> <ul style="list-style-type: none"> <li>• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.</li> <li>• Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period where construction activities are within 100m of receptors.</li> <li>• Avoid site runoff of water or mud.</li> <li>• Keep site fencing, barriers and scaffolding clean using wet methods.</li> <li>• Remove materials that have a potential to produce dust from the Scheme as soon as possible, unless being re-used on-site. If they are being re-used on-site cover as described below.</li> </ul> <p>Operating vehicle/machinery and sustainable travel</p> <ul style="list-style-type: none"> <li>• Ensure all vehicles switch off engines when stationary - no idling vehicles.</li> <li>• Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.</li> <li>• Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul 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 authority, where appropriate).</li> <li>• Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.</li> <li>• Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).</li> </ul>	<ul style="list-style-type: none"> <li>• cleaning to be provided if necessary.</li> <li>• Carrying out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.</li> <li>• Increasing the frequency of site inspections by the person accountable for air quality and dust issues on-site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.</li> <li>• Agreeing approach to monitoring with the Local Authority ahead of construction</li> </ul>
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**Potential Impact Mitigation / Enhancement Measure**

**Monitoring Requirements**

**Responsibility**

Operations

- 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.
- 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.

Waste

- Avoid bonfires and burning of waste materials.

Earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable
- Use Hessian, mulches or tackifiers 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.

Construction

- 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 powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

Track-out

commencing. Data will be collected before any work commences on-site to provide a comparative baseline should real-time airborne particulate or dust deposition monitoring be required.

**Potential Impact Mitigation / Enhancement Measure**

**Monitoring  
Requirements**

**Responsibility**

- 
- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
  - Avoid dry sweeping of large areas.
  - Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
  - Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
  - Record all inspections of haul routes and any subsequent action in a site logbook.
  - Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
  - Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
  - Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
  - Access gates to be located at least 10m from receptors where possible.

**Table 3-2: Climate Change**

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Greenhouse Gas (GHG) emissions from construction traffic and equipment and use of natural resources in construction materials.	<p>Appropriate standard and best practice control measures will be included in the detailed CEMP(s), which may include, but not be limited to:</p> <ul style="list-style-type: none"> <li>• Increasing recyclability by segregating construction waste to be re-used and recycled where reasonably practicable;</li> <li>• Designing, constructing and implementing the Scheme in such a way as to minimise the creation of waste and maximise the use of alternative materials with lower embodied carbon, such as locally sourced products and materials with a higher recycled content where feasible;</li> <li>• Reusing suitable infrastructure and resources where possible to minimise the use of natural resources and unnecessary materials (e.g. reusing excavated soil for fill requirements);</li> <li>• Encouraging the use of lower carbon modes of transport by identifying and communicating local bus connections and pedestrian and cycle access routes to/ from the Scheme to all construction staff, and providing appropriate facilities for the safe storage of cycles;</li> <li>• Liaising with construction personnel to implement staff minibuses and car sharing options;</li> <li>• Implementing a Travel Plan to reduce the volume of construction staff and employee trips to the Scheme;</li> <li>• Switching vehicles and plant off when not in use and ensuring construction vehicles conform to current EU emissions standards; and</li> <li>• Conducting regular planned maintenance of the construction plant and machinery to optimise efficiency.</li> </ul>	Auditing during construction. To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).
Increased flood risk on-site due to climate change needing to be	<p>Appropriate standard and best practice control measures will be included in the detailed CEMP(s), which may include, but not be limited to:</p> <ul style="list-style-type: none"> <li>• Topsoil and other construction materials will be stored outside of the 1 in 100-year floodplain extent where feasible. If areas located within Flood Zone 2/3 are to be utilised</li> </ul>	Auditing during construction. To be confirmed in detailed CEMP(s).	The overall responsibility will be with the contractor. Specific responsibilities

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
considered in the design.	<p>for the storage of construction materials, this would be done in accordance with the applicable flood risk activity regulations, if required.</p> <ul style="list-style-type: none"> <li>• Connectivity will be maintained between the floodplain and the adjacent watercourses, with no changes in ground levels within the floodplain as far as practicable.</li> <li>• During the construction phase, the contractor will monitor weather forecasts on a monthly, weekly and daily basis, and plan works accordingly. For example, works in the channel of any watercourse will be avoided or halted were there to be a significant risk of high flows or flooding.</li> <li>• The construction laydown area site office and supervisor will be notified of any potential flood occurring by use of the Floodline Warnings Direct or equivalent service.</li> </ul>		will be confirmed in the detailed CEMP(s).



**Table 3-3: Cultural Heritage**

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
<p>Potential for impact upon archaeological deposits.</p> <p>Temporary impacts on the setting of below ground Scheduled monuments and other built heritage assets during construction associated with increased visual and noise intrusion.</p>	<p>Prior to construction, the following mitigation measures will be adopted to further inform the detailed design of the Scheme and to avoid or minimise impacts on archaeological deposits:</p> <ul style="list-style-type: none"> <li>• Avoidance – where possible, cultural heritage assets have been avoided by the Scheme in order to reduce or remove potential impacts upon them. These avoidance measures have been implemented in a staged, iterative manner as the potential impacts of the Scheme are understood.</li> <li>• Reduction – areas of soft landscaping around parts of the perimeter of the Scheme have been built into the design of the Principal Site. The aim is to screen the panel arrays and associated infrastructure from view and thus reduce impact upon the settings of sensitive heritage assets.</li> <li>• Investigation – a programme of geophysical survey of the Principal Site is ongoing. This will be followed by a proportionate programme of targeted trial trench evaluation across the extent of the area within the Scheme Boundary to further inform the design of the Scheme. This work will inform on the presence, extent, character and nature of any archaeological features and deposits present within the Scheme Boundary. The precise nature, extent and objectives of this work will be agreed in liaison with the heritage statutory stakeholders.</li> <li>• A programme of archaeological mitigation is anticipated following ES submission and will be set out in an Outline Mitigation Strategy. Other design mitigation during construction may include, but are not limited to, siting haulage and access routes away from sensitive receptors, use of low noise generators, placement of security and work lights to minimise light spill with sympathetic screening of works.</li> <li>• Appropriate setbacks have also been incorporated into the Scheme design, limiting visibility from key routes through the landscape. Buffer areas have been included around sensitive heritage assets where possible to ensure they are excluded from the Scheme footprint and are not directly impacted by the Scheme.</li> </ul>	<p>Site specific Written Schemes of Investigation (WSI) will be submitted and agreed with the LCC.</p> <p>All archaeological work will be undertaken in line with a Outline Mitigation Strategy (OMS).</p> <p>This will be written following the completion of a Mitigation Design Brief to be produced by the County Archaeologists.</p>	<p>The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s)</p>

**Table 3-4: Ecology and Nature Conservation**

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
<p>Potential for spillages to enter watercourses and impact ecology.  Dust deposition on sensitive ecological receptors.</p>	<p>Appropriate standard and best practice control measures will be included in the detailed CEMP(s), which may include, but not be limited to:</p> <ul style="list-style-type: none"> <li>• The design of the Scheme will comply with good practice and environmental protection legislation during construction e.g. prevention of surface and ground water pollution, fugitive dust management, noise prevention or amelioration.</li> <li>• Existing watercourse crossing points will be used for construction access, where practicable, to avoid additional watercourse crossings being required.</li> <li>• Within the Cable Route Corridor, the crossing of the River Trent will be undertaken using Horizontal Directional Drilling (HDD) methods to lay cabling, therefore avoiding impacts to watercourses, including the Coastal and Floodplain Grazing Marsh either side of the River Trent, with launch and exit pits located outside of this habitat, which is considered sufficient to mitigate for potential hazards such as chemical and soils spills into watercourses and avoid potential direct impacts to the River Trent, the Coastal and Floodplain Grazing Marsh and Otter, which potentially use the river for commuting and foraging.</li> <li>• This Framework CEMP specifies requirements for the safe storage of chemicals / other hazardous materials (e.g. fuel), to prevent them reaching standing and running waters through flood events during construction. A full list of crossing methods and an explanation of these techniques is provided in <b>PEI Report Volume I: Chapter 10: Flood Risk, Drainage and Surface Water</b> (which includes hydrology and water pollution).</li> </ul>	<p>Auditing of implementation and effectiveness during construction. To be confirmed in detailed CEMP(s).</p>	<p>The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).</p>
<p>Loss of an area of grassland within the Scheme Boundary which would be utilised as the construction laydown area, alongside removal of vegetation</p>	<p>Appropriate standard and best practice control measures will be included in the detailed CEMP(s), which may include, but not be limited to:</p> <ul style="list-style-type: none"> <li>• Implementation of measures to avoid animals being injured or killed within construction working areas, through excluding them from such areas and preventing them from falling into and becoming trapped in excavations. No excavations will remain open overnight and if excavations are required to be left open, ramps will be provided to allow animals a means of escape.</li> </ul>	<p>To be confirmed in detailed CEMP(s) or LEMP.</p>	<p>The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in</p>

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
<p>present within the Scheme Boundary.</p>	<ul style="list-style-type: none"> <li>• Throughout the Scheme Boundary, new habitats will be provided to increase the biodiversity of the Scheme and will include bare ground, grassland, ‘cover crops’, hedgerows, tree and scrub planting. These habitats will provide landscape scale benefits for wildlife through increased habitat provision and connectivity and will be of value to a wide range of fauna, including farmland birds such as Skylark and Yellowhammer. Habitat creation within the Principal Site will include: <ul style="list-style-type: none"> <li>— Grassland to be provided adjacent to and beneath the solar PV panels in the Principal Site, including in larger open fields, to increase the diversity of flora in comparison to existing intensive agriculture and provide new habitat niches to encourage other fauna such as invertebrates and birds, such as Skylark.</li> <li>— Vegetation would be established through natural regeneration or from seed collection from the grasslands identified within the Scheme Boundary and through a suitable long-term habitat management regime. Consideration will be paid to climatic conditions when identifying appropriate species.</li> <li>— Gaps in currently defunct hedges will be planted with suitable native species to improve the connectivity of habitats (such as between ancient and other broad-leaved woodland) within and adjacent to the Scheme Boundary.</li> <li>— New areas of tree planting will be provided to create screening from Scheme infrastructure, improve habitat connectivity and increase the area of hedgerow (and woodland habitat) within the Scheme Boundary. Tree planting will be avoided in any areas where there may be ecological features which require open landscapes.</li> <li>— Hedgerows and trees will be allowed to grow tall and wide to provide maximum benefits for biodiversity and this natural regeneration will encourage a mosaic of successional habitats, forming broad habitat corridors throughout the Scheme.</li> <li>— Planting of aquatic macrophyte and riparian species to enhance water bodies and riparian/marginal habitats. Removal of selected shrub will also be done to reduce shading in the channel and promote macrophyte growth.</li> </ul> </li> </ul>		<p>the detailed CEMP(s) or LEMP.</p>

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	<ul style="list-style-type: none"> <li>For the purposes of Biodiversity Net Gain, the habitat creation for the Scheme will seek to achieve at least 10% biodiversity net gain in habitat units and for river and hedgerow habitats. Whilst the majority of habitat potentially to be lost is of low ecological value and of no more than Local importance, e.g. arable farmland, embedded design measures described above will be used in the final assessment to ensure no net loss in important habitat types.</li> </ul>		
<p>Potential for obtrusive glare and light spill to impact on ecology.</p>	<p>Where lighting is required, it will conform to best practice guidelines with respect to minimising light spill into adjacent habitats and prevent disturbance to bats and other species. Temporary construction site lighting will need to be deployed in accordance with the following recommendations to prevent or reduce the impact on human and ecological receptors:</p> <ul style="list-style-type: none"> <li>The use of lighting will be minimised to that required for safe site operations and security;</li> <li>Lighting will be controlled by infrared settings;</li> <li>Lighting will utilise directional fittings to minimise outward light spill and glare (e.g. via the use of light hoods/cowls which direct light below the horizontal plane, preferably at an angle greater than 20° from horizontal); and</li> <li>Lighting will be directed towards the middle of the Scheme Boundary rather than towards the boundaries.</li> </ul>	<p>To be confirmed in detailed CEMP(s).</p>	<p>The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).</p>
<p>Clearance or damage of habitat to facilitate construction, resulting in temporary or permanent reduction in habitat extent and potential direct and indirect effects on associated species.</p>	<p>Appropriate standard and best practice control measures will be included in the detailed CEMP(s), which may include, but not be limited to:</p> <ul style="list-style-type: none"> <li>Pre-construction surveys will be undertaken to validate and, where necessary, update the baseline survey findings. The purpose of these pre-construction surveys is to ensure mitigation during the construction phase is based on the latest protected species information. This will also be required for any protected species licensing that may be identified as being necessary at detailed design stage.</li> <li>Vegetation clearance will avoid the nesting bird period, where practicable i.e. March to August (inclusive), however, should any vegetation clearance be required within the nesting bird period this will be checked, prior to vegetation removal, for the presence of nesting birds, by a suitably qualified ornithologist. If active nests</li> </ul>	<p>To be confirmed in detailed CEMP(s).</p>	<p>The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).</p>

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	<p>are found, then these will be avoided with appropriate buffer zones put in place and the area monitored until the young birds have fledged and, or the nesting attempt has ceased.</p> <ul style="list-style-type: none"><li>• Vegetation clearance will be undertaken in advance of construction and at an appropriate time of year so as to avoid incidental injuring or killing of reptiles and amphibians (if present), concordant with the requirements for other species, such as nesting birds and Brown Hare.</li><li>• In the case of any construction of watercourse crossings, culverting of water bodies, and the extension of existing culverts, construction should ensure that connectivity is maintained along watercourses to allow Eel passage and connectivity for other aquatic species. Fish rescues may be required if draw-down or over-pumping is required during construction. Open-trenching for pipeline crossings will be avoided and HDD methods undertaken, for all watercourse crossings and where practicable.</li></ul>		

**Table 3-5: Flood Risk, Drainage and Surface Water**

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
<p>Leakage or accidental spillage of construction materials and potential pollutants used on-site, migrating to nearby surface watercourses or infiltrating to groundwater.</p> <p>Any flooding during construction could flood construction equipment and/materials, causing release of pollutants to nearby surface watercourses or infiltrating to groundwater.</p>	<p><b>General</b></p> <p>No works will be undertaken within at least 10m of all watercourses, which is considered sufficient to mitigate for potential hazards such as chemical and soils spills into watercourses and avoid potential direct impacts to the watercourse and protected species.</p> <p>The contractor will comply with the following Guidance for Pollution Prevention (GPP):</p> <ul style="list-style-type: none"> <li>• GPP 1: Understanding your environmental responsibilities – good environmental practices (Ref. 2);</li> <li>• GPP 2: Above ground oil storage (Ref. 3);</li> <li>• GPP 3: Use and design of oil separators in surface water drainage systems (Ref. 4);</li> <li>• GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer (Ref. 5);</li> <li>• GPP 5: Works and maintenance in or near water (Ref. 6);</li> <li>• GPP 8: Safe storage and disposal of used oils (Ref. 7);</li> <li>• GPP 13: Vehicle washing and cleaning (Ref. 8);</li> <li>• GPP 19: Vehicles: Service and Repair (Ref. 9);</li> <li>• GPP 20: Dewatering underground ducts and chambers (Ref. 10);</li> <li>• GPP 21: Pollution Incident Response Plans (Ref. 11);</li> <li>• GPP22: Dealing with spills (Ref. 12); and</li> <li>• GPP26: Safe storage – drums and intermediate bulk containers (Ref. 13).</li> </ul> <p>Requirements in these guidance documents will be listed in or appended to the detailed CEMP(s).</p>	<p>Temporary drainage will be monitored throughout construction. Specific details will be confirmed in detailed CEMP(s)</p>	<p>Specific Responsibilities to be confirmed in detailed CEMP(s).</p>

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Where new GPPs are yet to be published, the contractor will comply with the following Pollution Prevention Guidelines (PPG), unless they are published during the production of the ES:

- PPG6: Working at construction and demolition sites (Ref. 14);
- PPG7: Safe storage – the safe operation of refuelling facilities (Ref. 15);  
and
- PPG18: Managing fire water and major spillages (Ref. 16).

Additional good practice to be followed is detailed in the following key documents:

- British Standards Institute (2009) BS6031:2009 Code of Practice for Earth Works (Ref. 17);
- British Standards Institute (2013) BS8582 Code of Practice for Surface Water Management of Development Sites (Ref. 18);
- C753 (2015) The SuDS Manual (second edition) (Ref. 19);
- C741 (2015) Environmental good practice on site guide (fourth edition) (Ref. 20);
- C648 (2006) Control of water pollution from linear construction projects, technical guidance (Ref. 21);
- C609 (2004) Sustainable Drainage Systems, hydraulic, structural and water quality advice (Ref. 22);
- C532 (2001) Control of water pollution from construction sites – Guidance for consultants and contractors (Ref. 23); and
- C736F (2014) Containment systems for prevention of pollution (Ref. 24).

The above guidance documents provide for the following measures:

### Management of Construction Runoff

- All reasonably practicable measures will be taken to prevent the deposition of fine sediment or other material in, and the pollution by sediment of, any existing watercourse, arising from construction activities. The measures will

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accord with the principles set out in industry guidelines including the CIRIA report 'C532: Control of water pollution from construction sites' and CIRIA report 'C648 Control of water pollution from linear construction sites'.

Measures may include use and maintenance of temporary lagoons, tanks, bunds and fabric silt fences etc. or silt screens as well as consideration of the type of plant used.

- A temporary drainage system will be developed to prevent runoff contaminated with fine particulates from entering surface water drains without treatment. This will include identifying all land drains and water features in the Scheme Boundary and ensuring that they are adequately protected using drain covers, sand bags, earth bunds, geotextile silt fences, straw bales etc., or proprietary treatment (e.g. lamella clarifiers).
- Where practical, earthworks will be undertaken during the drier months of the year and earth moving works will avoid periods of very wet weather, to minimise the risk of generating runoff contaminated with fine particulates. However, it is likely that some working during wet weather periods will be unavoidable, in which case other mitigation measures (see below) will be implemented to control fine sediment laden runoff. Water may also be required to dampen earthworks during dry weather to reduce dust impacts, and any runoff generated will need to be appropriately managed by the Contractor in accordance with the pollution prevention principles described in **PEI Report Volume I Chapter 10: Surface Water, Flood Risk and Drainage**.
- To protect watercourses from fine sediment runoff, topsoil/subsoil will be stored a minimum of 20m from watercourses on flat lying land. Where this is not practicable, and it is to be stockpiled for longer than a two-week period, the material will either be covered with geotextile mats, seeded to promote vegetation growth, or runoff prevented from draining to a watercourse without prior treatment.
- Appropriately sized runoff storage areas for the settlement of excessive fine particulates in runoff will be provided.



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- Construction site runoff will either be treated on-site and discharged under a Water Discharge Activity Permit from the Environment Agency to Controlled Waters (potentially also including infiltration to ground) or to the nearest public sewer with sufficient capacity for treatment following discussions with Anglian Water, or removed from site for disposal at an appropriate and licensed waste facility.
- Equipment and plant are to be washed out and cleaned in designated areas within the Scheme Boundary only, where runoff can be isolated for treatment before disposal as outlined above.
- Mud deposits will be controlled at entry and exit points to the Scheme Boundary using wheel washing facilities and/or road sweepers operating during earthworks activities or other times as required.
- Debris and other material will be prevented from entering surface water drainage, through maintenance of a clean and tidy site, provision of clearly labelled waste receptacles, grid covers and the presence of site security fencing.
- The Water Management Plan (WMP) (which will be produced post consent) will include details of pre, during and post-construction water quality monitoring. This will be based on a combination of visual observations and reviews of the Environment Agency's automatic water quality monitoring network.

### Management of Spillage Risk

- Fuel will be stored and used in accordance with the Control of Substances Hazardous to Health Regulations 2002 (Ref. 25), and the Control of Pollution (Oil Storage) (England) Regulations 2001 (Ref. 26). Particular care will be taken with the delivery and use of concrete and cement as it is highly corrosive and alkaline.
- Fuel and other potentially polluting chemicals will either be in self-bunded leak proof containers or stored in a secure impermeable and bunded area (minimum capacity of 110% of the capacity of the containers, which includes 10% more capacity than is needed).

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- Any plant, machinery or vehicles will be inspected before every use and maintained to ensure they are in good working order and clean for use in a sensitive environment. This maintenance is to take place off site if possible or only at designated areas within the site compound. Only construction equipment and vehicles free of all oil/fuel leaks will be permitted on the Site. Drip trays will be placed below static mechanical plant.
- All washing down of vehicles and equipment will take place in designated areas and wash water will be prevented from passing untreated into watercourses.
- All refuelling, oiling and greasing of plant will take place above drip trays or on an impermeable surface which provides protection to underground strata and watercourses, and away from drains as far as reasonably practicable. Vehicles will not be left unattended during refuelling.
- As far as reasonably practicable, only biodegradable hydraulic oils will be used in equipment working in or over watercourses.
- All fixed plant used during construction will be self-bunded.
- Mobile plant is to be in good working order, kept clean, fitted with plant 'nappies' (spill containment liners) at all times and are to carry spill kits.
- The WMP (which will be produced post consent) will include details for pollution prevention and will be prepared and included alongside the final detailed CEMP. Spill kits and oil absorbent material will be carried by mobile plant and located at high-risk locations across the Scheme Boundary and regularly topped up. All construction workers will receive spill response training and toolbox talks.
- The Scheme Boundary will be secure to prevent any vandalism that could lead to a pollution incident.
- Construction waste/debris are to be prevented from entering any surface water drainage or water body.
- Surface water drains on public roads trafficked by plant or within the construction compound will be identified and, where there is a risk that fine

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particulates or spillages could enter them, the drains will be protected (e.g. using covers or sand bags) or the road regularly cleaned by road sweeper.

- Suitable facilities for concrete wash water (e.g. geotextile wrapped sealed skip, container or earth bunded area) will be adequately contained, prevented from entering any drain, and removed for appropriate disposal at a suitably licenced waste facility.
- Water quality monitoring of potentially impacted watercourses will be undertaken to ensure that pollution events can be detected against baseline conditions and can be dealt with effectively.
- In addition, any site welfare facilities will be appropriately managed, and all foul waste disposed of by an appropriate contractor to a suitably licensed facility if it is not possible to connect to the public sewer.

### Management of Flood Risk

- Topsoil and other construction materials will be stored outside of the 1 in 100-year floodplain extent where feasible. If areas located within Flood Zone 2/3 are to be utilised for the storage of construction materials, this would be done in accordance with the applicable flood risk activity regulations, if required.
- Connectivity will be maintained between the floodplain and the adjacent watercourses, with no changes in ground levels within the floodplain as far as practicable.
- During the construction phase, the contractor will monitor weather forecasts on a monthly, weekly and daily basis, and plan works accordingly. For example, works in the channel of any watercourse will be avoided or halted were there to be a significant risk of high flows or flooding.
- The construction laydown area site office and supervisor will be notified of any potential flood occurring by use of the Floodline Warnings Direct or equivalent service.
- All temporary construction compounds will be located outside of areas of fluvial flood zones 2 and 3 including allowances for climate change.

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- A 24-hour availability and ability to mobilise staff in the event of a flood warning.
- The removal of all plant, machinery and material capable of being mobilised in a flood for the duration of any holiday close down period where there is a forecast risk that the site may be flooded.
- Details of the evacuation and site close down procedures.
- Arrangements for removing any potentially hazardous material and anything capable of becoming entrained in floodwaters, from the temporary works areas.
- The contractor will sign up to Environment Agency flood warning alerts and describe in the Emergency Response Plan the actions it will take in the event of a flood event occurring. These actions will be hierarchical meaning that as the risk increases the contractor will implement more stringent protection measures.
- If water is encountered during below ground construction, suitable dewatering methods will be used. Any groundwater dewatering required in excess of the exemption thresholds will be undertaken in line with the requirements of the Environment Agency (under the Water Resources Act 1991 as amended) and the Environmental Permitting Regulations (2016).
- Safe egress and exits are to be maintained at all times when working in excavations. When working in excavations a banksman is to be present at all times.

### Silt Management

- A Silt Management Plan will be produced as part of the detailed CEMP as part of a Requirement in the DCO.

### Table 3-6: Human Health

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
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Human health risks during construction are covered in the following tables: Table 3-1 Air Quality, Table 3-8 Noise and Vibration, Table 3-5 Flood Risk, Drainage and Surface Water, Table 3-9 Socioeconomics and Land Use, Table 3-10 Transport and Access and Table 3-11 Other Environmental Topics.

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**Table 3-7: Landscape and Visual Amenity**

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
<p>Loss of existing landscape features, e.g. vegetation  Visibility of construction activities</p>	<p>The Landscape and Ecology Management Plan (LEMP) will set out the measures proposed to mitigate the potential impacts and effects on landscape (and biodiversity) features, and to enhance the landscape and biodiversity value of land within the Scheme Boundary (i.e. the green infrastructure).</p> <p>The Outline LEMP will be updated and submitted with the DCO application. A draft of the Outline LEMP is included in <b>PEI Report Volume II Appendix 3-2</b>.</p> <p>The detailed CEMP(s) will be required to take into account measures contained within the Outline and the preliminary parameters set out in the illustrative design (see <b>PEI Report Volume III: Figure 3-1</b>),</p> <p>Measures proposed for inclusion in the LEMP include:</p> <ul style="list-style-type: none"> <li>• To protect and retain existing trees and vegetation via construction exclusion zones and tree protective fencing (see below Tree Works);</li> <li>• Lighting at the minimal levels of lux and luminance as necessary during the temporary construction lighting (see below);</li> <li>• Landscape and biodiversity management and enhancement measures including replacement tree planting;</li> <li>• Landscape, arborists and ecological clerk of works to ensure that the landscape and ecology requirements of the detailed CEMP(s) are adhered too and that the construction works are monitored;</li> <li>• The perimeter security fence around the Scheme will be implemented early in the construction phase to secure the Scheme Boundary; and</li> <li>• An implementation timetable for maintenance and management proposals will be developed, including an annual landscaping maintenance plan.</li> </ul> <p><b>Tree Works</b></p> <ul style="list-style-type: none"> <li>• The findings of the pre-construction tree survey and Arboricultural Report, accompanied by an Arboricultural Method Statements, where construction works are likely to affect trees, will be taken into account by the appointed contractor;</li> </ul>	<p>An arboricultural survey in line with BS5837:2012 (Ref. 29) will be undertaken concurrently with detailed design of the Scheme, to identify where trees are likely to be affected by the construction works and to inform the development of the detailed design. Such preconstruction surveys would be undertaken in accordance with the LEMP.</p> <p>Additional surveys may be required during the advance works, site clearance and construction phase as advised as necessary by the appointed contractor's arboricultural specialist, based on the findings of the tree</p>	<p>The Outline LEMP sets out roles and responsibilities for implementation.</p>

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	<ul style="list-style-type: none"> <li>Where works in close proximity to retained trees cannot be practically avoided, these works will be undertaken in accordance with current best practice, defined in British Standard (BS) 5837: 2012 Trees in relation to design, demolition and construction – Recommendations and National Joint Utilities Group (NJUG) Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Ref. 30); and</li> <li>All necessary protective fencing will be installed prior to the commencement of any site clearance or construction works.</li> </ul>	<p>survey, or otherwise as identified as appropriate by the Applicant or their appointed Principal Contractor.</p>	
	<p><b>Lighting Strategy</b>  Temporary site lighting during construction required to enable safe working during construction in hours of darkness will be designed as far as reasonably practical so as not to cause a nuisance outside of the Scheme Boundary. Standard best practice measures will be employed to minimise light spill, including glare during construction.</p> <p><b>Screening</b>  Existing vegetation along the perimeter of the Scheme Boundary will be retained and managed where practicable to ensure its continued presence and to aid the screening of low-level views.</p>		

**Table 3-8: Noise and Vibration**

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
<p>Vibration due to construction activities causing annoyance at Noise Sensitive Receptors (NSR) and damage to building structures. Construction traffic, plant and machinery noise at nearby NSR.</p>	<p>Best Practicable Means (BPM) will be applied, as far as reasonably practicable, during construction works to minimise noise and vibration at NSRs, including, neighbouring residential properties and other sensitive receptors arising from construction activities, including, as appropriate:</p> <ul style="list-style-type: none"> <li>• Ensuring that all appropriate processes, procedures and measures are in place to minimise noise before works begin and throughout the construction programme.</li> <li>• All contractors to be made familiar with current legislation and the guidance in BS 5228 (Parts 1 and 2) (Ref. 31) which should form a prerequisite of their appointment.</li> <li>• Where reasonably practicable, noise and vibration are controlled at source (e.g. the selection of inherently quiet plant and low vibration equipment), review of the construction programme and methodology to consider quieter methods, consideration of the location of equipment on-site and control of working hours.</li> <li>• Use of modern plant, complying with applicable UK noise emission requirements.</li> <li>• Hydraulic techniques for breaking concrete or rocks to be used in preference to percussive techniques, where reasonably practicable.</li> <li>• Drop heights of materials will be minimised.</li> <li>• Plant and vehicles will be sequentially started up rather than all together.</li> <li>• Off-site pre-fabrication where reasonably practicable.</li> <li>• Use of screening locally around significant noise producing plant and activities.</li> <li>• Regular and effective maintenance by trained personnel will be undertaken to keep plant and equipment working to manufacturer’s specifications.</li> <li>• All construction plant and equipment to be properly maintained, silenced where appropriate, operated to prevent excessive noise and switched off when not in use.</li> </ul>	<p>Section 61 consents would be obtained where noise works are anticipated by the appointed contractor or work outside of core hours is required. The Section 61 would form the basis of noise limits and monitoring requirements including monitoring locations, noise monitoring methods and frequency, and the noise control measures to be employed.</p> <p>The detailed CEMP would also set out a scheme for the provision of monthly reporting information during construction to and local residents to advise of potential noisy works that are due to take place and for monitoring of noise complaints and reporting to the Applicant for immediate investigation and action.</p>	<p>The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).</p>



Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	<ul style="list-style-type: none"> <li>• Loading and unloading of vehicles, dismantling of site equipment or moving equipment or materials around the Scheme Boundary to be conducted in such a manner as to minimise noise generation, as far as reasonably practicable.</li> <li>• All vehicles used on-site shall incorporate reversing warning devices as opposed to the typical tonal reversing alarms to minimise noise disturbance were reasonably practicable.</li> <li>• Provision of information to the relevant local authority and local residents to advise of potential noisy works that are due to take place.</li> <li>• Unnecessary revving of engines will be avoided, and equipment will be switched off when not in use.</li> <li>• Plant will always be used in accordance with manufacturers' instructions. Care will be taken to site equipment away from noise-sensitive areas. Where possible, loading and unloading will also be carried out away from such areas.</li> <li>• The majority of works activities would be completed under core working hours, as per the CTMP:  Monday to Friday: 07:00 – 19:00 and Saturday: 07:00-13:00.  Sundays and Bank Holidays: No works.</li> </ul>	<p>Noise complaints will be monitored and reported to the Applicant for immediate investigation and action. A display board will be installed on-site, and a website will be set up. These will include contact details for the Community Liaison Officer or alternative with whom nuisance or complaints can be lodged. A logbook of complaints will be prepared and managed by the Site Manager.</p> <p>Further details are to be confirmed in the detailed CEMP(s).</p>	

**Table 3-9: Socio-economics and Land Use**

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
<p>Temporary loss of agricultural land</p> <p>Loss of trees and other vegetation</p> <p>Impacts on soil</p> <p>Disruption to users of Public Rights of Way.</p>	<p>The following measures will be implemented to address impacts on land use:</p> <ul style="list-style-type: none"> <li>• Agricultural soils will be managed, preserved, retained and reinstated in accordance with Department for Environment, Food and Rural Affairs (Defra) guidance. Key mitigation measures from this guidance will be included in the detailed CEMP(s).</li> <li>• Further measures to mitigate effects on agricultural land during construction will be set out in the detailed CEMP(s).</li> </ul> <p>Temporary diversions of PRowWs during the construction phase will be put in place monitored to ensure they are suitable and well maintained for use. All diversions would be sign-posted accordingly, and closures will be advertised in advance. Further details will be included in the detailed CEMP(s).</p>	<p>Monitor temporary diversions of PRowWs during the construction phase to ensure they are suitable and well maintained for use.</p>	<p>To be included in the detailed CEMP(s).</p>
<p>Disruption to local residents, businesses and community facilities.</p>	<p>Measures to mitigate the effects of construction dust are outlined in Table 3-1.</p> <p>Measures to mitigate the effects of construction noise are outlined in Table 3-8.</p> <p>Measures to mitigate the effects of visual impacts from construction are outlined in Table 3-7.</p> <p>Measures to mitigate the effects of construction traffic are outlined in Table 3-10.</p>	<p>To be included in the detailed CEMP(s).</p>	<p>To be included in the detailed CEMP(s).</p>
<p>Potential for damage to soil.</p> <p>Causing soil compaction by carrying out works in inappropriate (wet) conditions could reduce</p>	<p>Prior to commencement of works a Soil Resource Management Plan (SRMP) will be prepared. The SRMP will detail the management of soil on areas such as temporary working compounds, temporary and permanent tracks and sites of temporary and permanent buildings. The SRMP will include details of topsoil and subsoil stripping depths, how and where soils will be stored, conditions under which soil stripping and</p>	<p>To be included in the detailed CEMP(s).</p>	<p>To be included in the detailed CEMP(s).</p>

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
infiltration potentially enhancing any run-off and/or erosion issues. If compacted the land maybe of lower quality on decommissioning.	reinstatement will be carried out and how the reinstatement will be carried out. The Outline SRMP and SRMP will follow the principles of best practice including the Defra (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Ref. 32). and The Institute of Quarrying (2021) Good Practice Guide for Handling Soils in Mineral Workings (Ref. 33).		

### Table 3-10: Transport and Access

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
<p>The Framework CTMP within <b>PEI Report Volume II Appendix 15-2</b> sets out measures to manage construction traffic within the vicinity of the Order limits along the local highway network during the construction period of the works, in order to limit any potential disruptions and implications on the wider transport network, as well as for the existing road users. It identifies the management of freight traffic i.e. Heavy Goods Vehicles (HGVs), as well as staff vehicles. Full details will be provided in the final CTMP which will be secured by a DCO Requirement.</p>			

**Table 3-11: Other Environmental Topics**

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
<b>Ground Conditions</b>			
<p>Potential for risks to human health associated with waste generation, land contamination, airborne contamination and groundwater contamination.</p> <p>The discovery of ground contamination during groundworks.</p> <p>Levelling of the Scheme Boundary including the possible introduction of new fill materials.</p>	<p>Ground investigation works will be undertaken prior to commencing construction. Results will be reviewed by the appointed contractor, including any additional investigation or mitigation measures beyond the impact avoidance measures stated here.</p> <p>Best practice avoidance and mitigation measures proposed include:</p> <ul style="list-style-type: none"> <li>• All plant (i.e. inverters, transformers and switchgear) will be installed on concrete bases with suitable bunding where appropriate;</li> <li>• The detailed operational drainage design will be carried out pre-construction with the objective of ensuring that drainage of the land to the present level is maintained.</li> <li>• It will follow either the design of a new drainage system taking into account the proposed new infrastructure (access tracks, cable trenches, structure foundations) to be constructed, or, if during the construction of any of the infrastructure, there is any interruption to existing schemes of land drainage, then new sections of drainage will be constructed. The surface water drainage strategy will be submitted with the DCO application. Infiltration drainage design will be in accordance with BRE 365 and infrastructure will be placed at least 10m away from watercourses;</li> <li>• All workers would be required to wear Personal Protective Equipment (PPE) such as dust masks as applicable;</li> <li>• Containment measures would be implemented, including drip trays, bunding or double-skinned tanks of fuels and oils; all chemicals would be stored in accordance with their COSHH guidelines, whilst spill kits would be provided in areas of fuel/oil storage;</li> <li>• All plant and machinery would be kept away from surface water bodies wherever possible, checked regularly and, where necessary,</li> </ul>	<p>To be included in the detailed CEMP(s)</p>	<p>To be included in the detailed CEMP(s)</p>

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	<p>the use of drip trays would be employed. Refuelling and delivery areas would be located away from surface water drains;</p> <ul style="list-style-type: none"><li>• An emergency spillage action plan will be produced, which staff will be required to have read and understood prior to commencement of work, and provisions made to contain any leak/spill;</li><li>• Should any potentially contaminated ground, including isolated 'hotspots' of contamination and/or potential deposits of asbestos containing materials (ACM), be encountered, the contractor would be required to investigate the areas and assess the need for containment or disposal of the material. The contractor would also be required to assess whether any additional health and safety measures are required;</li><li>• To further minimise the risks of contaminants being transferred and contaminating other soils or water, construction workers would be briefed as to the possibility of the presence of such materials;</li><li>• In the event that contamination is identified, appropriate remediation measures would be taken to protect construction workers, future site users, water resources, structures and services;</li><li>• The contractor would be required to place arisings and temporary stockpiles away from watercourses and drainage systems, whilst surface water would be directed away from stockpiles to prevent erosion;</li><li>• The risk to surface water and groundwater from run-off from any contaminated stockpiles during construction works will be reduced by implementing suitable measures to minimise rainwater infiltration and/or capture runoff and leachates, through use of bunding and/or temporary drainage systems. These mitigation measures will be designed in line with current good practice, follow appropriate guidelines and all relevant licences/permits;</li><li>• The contractor will ensure that all material is suitable for its proposed use and would not result in an increase in contamination-</li></ul>		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	<p>related risks on identified receptors, including any landscaped areas and underlying groundwater;</p> <ul style="list-style-type: none"> <li>Any waters removed from excavations by dewatering would be discharged appropriately, subject to the relevant permits being obtained from the Environment Agency;</li> <li>The contractor will implement a dust suppression/management system in order to control the potential risk from airborne contamination migrating off-site to adjacent sites; and</li> <li>Piling design and construction works will be completed following the preparation of a piling risk assessment.</li> </ul>		
<b>Waste</b>			
<p>Potential to impact on sensitive receptors (humans, wildlife and controlled waters) if waste not stored and managed appropriately.</p>	<p>The contractor(s) will consider the objectives of sustainable resource and waste management and seek to use material resources efficiently, reduce waste at source, reduce waste that requires final disposal to landfill and apply the principles of the waste hierarchy. This would include, where reasonably practicable, working towards a cut and fill balance for excavations; segregation of construction materials on-site for appropriate re-use, recycling and recovery, with landfill as a last resort. This would be achieved by a combination of measures, including:</p> <ul style="list-style-type: none"> <li>The contractor(s) will prepare and implement a Construction Resource Management Plan (CRMP) (which will be produced post consent);</li> <li>All waste transported off site will be delivered to appropriately licenced receivers of such materials; and</li> <li>As part of the CRMP, the contractor(s) will segregate construction waste to be re-used and recycled where reasonably practicable.</li> </ul>	<p>A register of all waste loads leaving the Scheme Boundary will be maintained to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities and management methods.</p>	<p>To be included in the detailed CEMP(s).</p>

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	<p>The types, quantities and final destination of waste generated during the construction phase would be identified, measured and recorded through the CRMP.</p>		
<p><b>Major Accidents and Disasters</b></p>			
<p>All works will be undertaken in accordance with relevant Health and Safety legislation and guidance. Details of fire, police, emergency services and hospitals will be publicised and included in the site induction. Further risks of major accidents and disasters are covered in Table 3-5: , Table 3-10: Transport and Access, as well as the Ground Conditions and Waste sections of this Table.</p>			
<p><b>Glint and Glare</b></p>			
<p>Glint and Glare risks are covered in Table 3-7: Landscape and Visual Amenity.</p>			
<p><b>Utilities and Telecoms</b></p>			
<p>Interference with utilities and telecommunication infrastructure in close proximity to the Scheme.</p>	<p>Measures to include:</p> <ul style="list-style-type: none"> <li>- Locating the Scheme outside of utilities' protected zones;</li> <li>- The use of ground penetrating radar or other appropriate techniques before excavation to identify any unknown utilities.</li> <li>- Consultation and agreement of construction/demobilisation methods will be undertaken prior to works commencing (this would be covered by the protective provisions included in the DCO).</li> <li>- Infrastructure that crosses the Scheme will be mapped and avoided through the design.</li> </ul>	<p>No further monitoring required.</p>	<p>N/A</p>



## 4. Complementary Plans and Procedures

4.1.1 A suite of complementary environmental plans and procedures for the construction phase will be developed alongside the CEMP, including a CRMP, as discussed in the tables above. These plans and procedures will build on the principles and procedures set out in this Framework CEMP and described in the PEI Report and subsequent ES. These supporting and supplementary plans and procedures will be clearly outlined in the detailed CEMP(s) and cross referenced.

## 5. Implementation and Operation

5.1.1 The detailed CEMP(s) will set out all roles, responsibilities and actions required in respect of implementation of the measures described in this Framework CEMP, including:

- An organogram showing team roles, names and responsibilities;
- Training requirements for relevant personnel on environmental topics;
- Information on-site briefings and toolbox talks that will be used to equip relevant staff with the necessary level of knowledge to follow environmental control procedures;
- Measures to advise employees of changing circumstances as work progresses;
- Communication methods;
- Document control; and
- Environmental emergency procedures.

## 6. Checking and Corrective Action

### 6.1 Monitoring

6.1.1 To meet the requirement of the detailed CEMP(s), environmental monitoring of the Scheme and its impacts will be undertaken throughout the construction phase.

6.1.2 As part of the monitoring process the contractor will allocate a designated Environment Manager, who will be present on Site throughout the construction process and when new activities are commencing. The Environment Manager will observe site activities and report any deviations from the detailed CEMP(s) in a logbook, along with the action taken and general conditions at the time. The Applicant will be informed of any deviations from the detailed CEMP(s) as soon as possible following identification of such issues. The Environment

Manager would also act as day-to-day contact with relevant local authorities and other regulatory agencies such as the Environment Agency.

- 6.1.3 During construction, the Environment Manager will conduct walkover surveys to ensure all requirements of the detailed CEMP(s) are being met. Action from these surveys will be documented on an Environmental Action Schedule, discussed with the Site Manager for programming requirements and issued weekly for actioning.
- 6.1.4 The Environmental Manager/ Project Manager will arrange regular formal inspections to ensure the requirements of the detailed CEMP(s) are being met. After completion of the works, the Environment Manager will conduct a final review.

## 6.2 Records

- 6.2.1 The Environmental Manager/ Project Manager will retain records of environmental monitoring and implementation of the detailed CEMP(s). This will allow provision of evidence that the detailed CEMP(s) is being implemented effectively. These records will include:
- Environmental Action Schedule;
  - Licences and approvals;
  - Results of inspections by Environmental Manager/ Project Manager;
  - Other environmental surveys and investigations; and
  - Environmental equipment test records.
- 6.2.2 The detailed CEMP(s) will be updated as necessary, with a full review as required (at least quarterly) throughout the construction period.
- 6.2.3 A brief report will be produced and submitted to the relevant local authorities on a quarterly basis and following completion of commissioning. This will summarise the monitoring process, observed deviations from the detailed CEMP(s) and the corrective actions taken.

## 7. Management Review

- 7.1.1 The detailed CEMP(s) will be signed off on completion of the construction works and will form the basis of the OEMP, which will be used to manage the environmental performance of the project through operation.

## 8. References

- Ref. 1 HMSO (2008) The Planning Act 2008, Available at:  
[https://www.legislation.gov.uk/ukpga/2008/29/pdfs/ukpga\\_20080029\\_en.pdf](https://www.legislation.gov.uk/ukpga/2008/29/pdfs/ukpga_20080029_en.pdf)
- Ref. 2 Northern Ireland Environment Agency (NIEA) (2021). Understanding your environmental responsibilities – good environmental practices: GPP 1.
- Ref. 3 NIEA (2021). Above ground oil storage tanks: GPP 2.
- Ref. 4 NIEA (2022). Use and design of oil separators in surface water drainage systems: GPP 3.
- Ref. 5 NIEA (2017). Treatment and disposal of wastewater where there is no connection to the public foul sewer: GPP 4.
- Ref. 6 NIEA (2018). Works and maintenance in or near water: GPP 5.
- Ref. 7 NIEA (2021). Safe storage and disposal of used oils: GPP 8.
- Ref. 8 NIEA (2021). Vehicle Washing and Cleaning: GPP 13.
- Ref. 9 NIEA (2021). Vehicle: Servicing and Repairs: GPP 19.
- Ref. 10 NIEA (2021). Dewatering underground ducts and chambers: GPP 20.
- Ref. 11 NIEA (2021). Pollution incident response planning: GPP 21.
- Ref. 12 NIEA (2018). Dealing with spills: GPP 22.
- Ref. 13 NIEA (2021). Safe Storage of Drums and Intermediate Bulk Containers (IBCs): GPP 26.
- Ref. 14 Environment Agency (EA) (2012). Working at construction and demolition sites: PPG6.
- Ref. 15 EA (2011). The safe operation of refuelling facilities: PPG 7.
- Ref. 16 EA (n.d.). Managing Fire Water and Major Spillages: PPG 18.
- Ref. 17 BSI (2009). BS6031:2009 Code of Practice for Earth Works.
- Ref. 18 BSI (2013). BS8582 Code of Practice for Surface Water Management of Development Sites.
- Ref. 19 Construction Industry Research and Information Association (CIRIA) (2015). C753: the SuDS Manual (second edition).
- Ref. 20 CIRIA (2015). C741 Environmental good practice on site guide (fourth edition).
- Ref. 21 CIRIA (2006). C648: Control of water pollution from linear construction projects, technical guidance.
- Ref. 22 CIRIA (2004). C609: Sustainable Drainage Systems, hydraulic, structural and water quality advice.
- Ref. 23 CIRIA (2001). C532: Control of water pollution from construction sites – Guidance for consultants and contractors.
- Ref. 24 CIRIA (2014). C736F: Containment systems for prevention of pollution.
- Ref. 25 Her Majesty's Stationary Office (HMSO) (2002). Control of Substances Hazardous to Health Regulations 2002.
- Ref. 26 HMSO (2003). Control of Pollution (Oil Storage) (England) Regulations 2001.
- Ref. 27 HMSO (1991). Water Resources Act 1991 (as amended).
- Ref. 28 HMSO (2016). Environmental Permitting Regulations (2016).
- Ref. 29 BSI (2012). BS 5837:2012 Trees in Relation to Design, Demolition and Construction.
- Ref. 30 The National Joint Utilities Group (NJUG) (2007). Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.
- Ref. 31 BSI (2014). Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration.

Ref. 32 Department for Environment, Food and Rural Affairs (DEFRA) (2009).  
Construction Code of Practice for the Sustainable Use of Soils on  
Construction Sites.

Ref. 33 The Institute for Quarrying (2021). Good Practice Guide for Handling Soils in  
Mineral Workings.

