Fosse Green Energy

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EN010154

7.7 Framework Construction Environmental Management Plan (Tracked)

Planning Act 2008 (as amended)

Regulation 5(2)(q)

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Fosse Green Energy

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7.7 Framework Construction Environmental Management Plan

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1. Introduction

1.1 Background

1.1.1 Fosse Green Energy Limited (hereafter referred to as 'the Applicant') is seeking consent for the construction, operation and decommissioning of Fosse Green Energy (hereafter referred to as the 'Proposed Development'). This will require an application for a Development Consent Order (DCO), which has been 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 Environmental Statement (ES) **[EN010154/APP/6.1]** and presents a framework for environmental management during the construction phase of the Proposed Development, with the aim of providing a clear and consistent approach to environmental mitigation during construction.

1.1.3 If the DCO application is approved, a detailed CEMP will be produced for the Proposed Development, following the appointment of a Principal Contractor, and prior to commencement of construction in accordance with a Requirement of the DCO. The detailed CEMP will be required to be in accordance with the measures included in this Framework CEMP and approved by the Local Planning Authority.

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) [EN010154/APP/7.8]** and a **Framework Decommissioning Environmental Management Plan (DEMP) [EN010154/APP/7.9]** have been prepared to accompany the DCO application and will be secured through a Requirement of the DCO.

1.1.5 An Environmental Impact Assessment (EIA) has been undertaken for the Proposed Development and an ES **[EN010154/APP/6.1]** has been prepared in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations) (Ref 2). In accordance with the requirements of the EIA Regulations, the ES **[EN010154/APP/6.1]** contains the assessment of the likely significant effects on the environment that may be caused during the construction phase of the Proposed Development and describes a range of 'industry standard' or best practice mitigation and construction management measures.

1.1.6 This Framework CEMP outlines how the construction mitigation measures included within the ES will be implemented and sets out the monitoring and auditing activities designed to ensure that such mitigation measures are carried out, and that they are effective.

1.1.7 It is envisaged that a detailed CEMP would be prepared, approved, and implemented for individual parts of the Proposed Development. As a result, there could be multiple CEMPs prepared in accordance with the relevant parts of this Framework CEMP.

1.1.8 This document provides the likely structure of the CEMP(s) as well as outline information relevant to the CEMP(s). It indicates what additional information might be included under each sub-section within the CEMP(s). This Framework CEMP is designed with the objective of ensuring compliance with the relevant environmental mitigation measures set out within the ES.

1.1.9 The key elements of this Framework CEMP include:

a. Construction Environmental Management;
b. Mitigation and Monitoring;
c. Complementary Plans and Procedures;
d. Implementation and Operation; and
e. Checking and Corrective Action.

1.1.10 In summary, this Framework CEMP identifies how commitments made in the EIA will be translated into actions during the construction phase of the Proposed Development and includes a process from implementing the actions through allocation of key roles and responsibilities.

1.1.11 The Applicant and any appointed Principal Contractor(s) will be responsible for working in accordance with the environmental controls documented in the CEMP, which is required to be substantially in accordance with this Framework CEMP, pursuant to the DCO.

1.1.12 This Framework CEMP has been designed with the objective of compliance with the relevant environmental legislation and the mitigation measures set out within the ES **[EN010154/APP/6.1]**. Any additional licences, permits or approvals that are required will be listed in the CEMP(s), including any environmental information submitted in respect of them.

1.2 The Proposed Development

1.2.1 The Proposed Development will comprise the construction, operation and maintenance, and decommissioning of a solar photovoltaic (PV) electricity generating facility, with on-site Battery Energy Storage System (BESS) and other associated infrastructure, with a total capacity exceeding 50 megawatts (MW). The Proposed Development will export and import electricity to the national electricity transmission network via a buried 400 kilovolt (kV) import and export cable circuit of approximately 10km in length, connecting to the national electricity transmission network at the proposed National Grid substation near Navenby.

1.2.2 The ‘DCO Site’ within which the Proposed Development will be delivered is located approximately 9km to the south and south west of Lincoln City Centre, in proximity to the villages of Thorpe on the Hill, Witham St Hughs, Haddington, Thurlby, Navenby, and Bassingham.

1.2.3 The overall area of the DCO Site is approximately 1,368 hectares (ha) and comprises the following distinct elements:

a. 'the Principal Site', which comprises Solar PV Array Areas, Interconnecting Cable Corridors, on-site BESS, and associated infrastructure; and

b. 'the Cable Corridor', which is approximately 10km in length and will comprise the underground electrical infrastructure required to connect the Principal Site to the proposed National Grid substation near Navenby.

1.2.4 A full description of the Proposed Development is included in **Chapter 3: The Proposed Development** of the ES **[EN010154/APP/6.1].** An overview of the Proposed Development and its environmental impacts is provided in the ES **Non-Technical Summary [EN010154/APP/6.4].**

The Principal Site

1.2.5 The Principal Site covers an area of approximately 1,070ha and is centred on approximate National Grid Reference SK 90388 62514. It will comprise Solar PV Array Areas containing ground-mounted solar PV panels, BESS, and associated infrastructure such as a series of Interconnecting Cable Corridors, internal tracks, inverters, transformers, switchgear, and an Onsite Substation (which will include transformers, switchgear and metering equipment required to facilitate the import and export of electricity to the National Grid). The Interconnecting Cable Corridors comprise buried 33kV cables which will transport the electricity generated from the solar PV and stored in the BESS to the Onsite Substation, where it is gathered, and the voltage is stepped up to 400kV prior to transmission via the connecting cable. The Principal Site also includes substantial habitat and landscaping enhancement.

The Cable Corridor

1.2.6 The Cable Corridor partly overlaps with the Principal Site, whereby the Cable Corridor covers approximately 351ha in total, overlapping approximately 53ha of the Principal Site (which covers a total approximately 1,070ha) at its south eastern extent, resulting in a total DCO Site area of approximately 1,368ha. The Cable Corridor is the area within which the 400kV connecting cables will be installed, linking the Onsite Substation to the proposed National Grid substation near Navenby, approximately 10km south east of the Principal Site. The working width within the Cable Corridor will be approximately 40m in width following detailed design and refinement of the cable route at the post consent stage. The current Cable Corridor width, which varies along its length, is wider than the final working area to allow flexibility, should localised constraints such as new third party infrastructure be identified prior to commencement of construction.

Construction Compounds

1.2.7 There will be one main construction compound, located west of Haddington Lane south of the A46, and several secondary compounds, with indicative locations shown in **Figure 3-1** of the ES **[EN010154/APP/6.2]**. The main

compound would be up to 100m x 200m and the secondary compounds will be up to 100m x 100m and will contain a site office, mobile welfare units, canteen facility, a fenced area for storage and waste skips and space for short-term parking, storage, download and a turning area. The compounds will be converted to solar PV or landscaping and mitigation/enhancement planting at the end of their use.

1.2.8 In addition to the main compound and the secondary compounds, smaller short-term use construction compounds will be located across the DCO Site including the Cable Corridor. The indicative location of the temporary construction compounds for the Cable Corridor are shown in **Figure 3-1** of the ES **[EN010154/APP/6.2]**.

2. Construction Environmental Management

2.1 Roles and Responsibilities

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

a. **Principal Contractor** – Appointed by the Applicant to construct the Proposed Development.

b. **Site Manager** (may also be known as a **Construction Project Manager)** – Overall responsibility for activity onsite (will be based onsite full time) and responsibility for ensuring all elements in the DCO, CEMP(s), and all environmental legal and other requirements are implemented, and appropriately resourced, managed, reviewed and reported.

c. **Environment Manager** – Responsible for the overall management of environmental aspects on site, ensuring environmental legislation and good industry practices are complied with, and environmental mitigation and monitoring measures are implemented. The Environment Manager will oversee environmental monitoring onsite 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.

d. **Environmental Clerk of Works (EnvCoW)** – Responsible for overseeing the management of and providing advice about environmental risks during construction including, for example, management of protected species, surface water management, pollution, air quality and noise. This may be covered by the Environment Manager.

e. **Ecological Clerk of Works (ECoW)** – Responsible for the management of the risks to biodiversity on construction sites, advising on the protection of valued biodiversity features and providing practical solutions.

f. **Flood Warden** – There will be a dedicated responsibility to be prepared for, and to manage, the response to flood incidents and warnings. This may be covered by the Environment Manager, if the individual has adequate experience in flood matters.

g. **Health and Safety Manager** – Responsible for the monitoring and controlling of health and safety compliance and related rules and regulations onsite.

h. **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 Proposed Development 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.

2.1.2 These roles and responsibilities are indicative and will be confirmed in the detailed CEMP(s).

2.2 Construction Programme

2.2.1 The construction phase is anticipated to take 24 months if multiple construction teams are mobilised simultaneously, or up to 30 months if it is built out sequentially. Subject to being granted development consent, construction is anticipated to start in 2031 to enable completion for the agreed connection date of 2033. The assumed 2031 construction start date is based upon information currently available, including the construction of the proposed National Grid substation near Navenby, which allows for the connection of the Proposed Development to the national electricity transmission network. If construction of the proposed National Grid substation near Navenby Substation is progressed quicker than anticipated, the Proposed Development construction may commence sooner.

2.2.2 The potential for an earlier start date would be discussed with National Grid following receipt of development consent, in the event National Grid can facilitate connection earlier than the currently offered date.

~~2.2.2~~2.2.3 The Applicant will inform Lincolnshire County Council of the date of final commissioning once it has occurred.

~~2.2.3~~2.2.4 More details on the construction phasing will be provided within the detailed CEMP(s) to be agreed with the local planning authorities post consent.

2.3 Working Hours

2.3.1 Core construction working hours on-site will be as follows:

a. Monday to Friday: 07:00 to 19:00 – all activities. Any percussive piling works within 400m of residential properties will only occur for two periods of four hours (between 08:00 to 18:00) with at least one hour break between the two periods;

b. Saturday: 09:00 to 13:00 – all activities, except percussive piling within 400m of residential properties;

c. Saturday: 13:00 to 18:00 – all activities, except for HGV deliveries, works likely to generate substantial levels of noise (defines as activities generating more than 45dB L_{Aeq} at neighbouring dwellings), and percussive piling (unless agreed with the relevant local authority); and

d. Sundays, Bank Holidays and outside of the construction hours noted above (including nights): no activities except for Horizontal Directional Drilling (HDD) drilling which could be required subject to the restrictions stated in this Framework CEMP, future detailed CEMP(s), and any other restrictions agreed with the relevant planning authorities pursuant to the consent process under section 61 of the Control of Pollution Act 1974 (Ref 3).

2.3.2 Additionally, quiet non-intrusive works such as the installation of PV panels may take place over longer periods during the high summer and other quiet non-intrusive works such as electrical testing, commissioning and inspection may take place over longer periods throughout the year.

2.4 Control of Noise

2.4.1 Consents under Section 61 of the Control of Pollution Act 1974 would be voluntarily obtained for the Proposed Development 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.

2.4.2 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.

2.5 Control of Light

2.5.1 As far as practicable, construction works will be limited to daylight hours, with focussed task specific lighting provided where this is not practicable. In winter months, construction temporary site lighting, in the form of mobile lighting towers with a power output of 8 kilo volt-amperes (kVAs), may be required in areas where natural lighting is unable to reach (e.g. sheltered/confined areas). There will also be lighting at the main construction compounds while construction is underway during core working hours.

2.5.2 Artificial lighting would be provided to maintain sufficient security and health and safety for the DCO Site 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 DCO Site Boundary as far as reasonably practicable.

2.5.3 All construction lighting will be deployed in accordance with the following recommendations to prevent or reduce the impact on human and ecological receptors:

a. The use of lighting will be minimised to that required for safe site operations;

b. 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

c. Lighting will be directed towards the middle of the DCO Site Boundary rather than towards land outside of the boundaries.

2.6 Traffic Management

2.6.1 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 **Framework Construction Traffic Management Plan (CTMP) [EN010154/APP/7.18]** and **Framework Public Rights of Way Management Plan [EN010154/APP/7.14]** submitted as part of the DCO application.

2.6.2 The **Framework CTMP [EN010154/APP/7.18]** sets out the proposals to manage construction traffic during the construction of the Proposed Development and considers the management of all freight traffic (i.e. heavy goods vehicles (HGVs)), as well as staff traffic.

2.6.3 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.

2.7 Parking Provisions

2.7.1 The Principal Site will include provision for up to 225 car parking spaces for works related to the Principal Site. Further details on construction traffic movements are provided in the **Framework CTMP [EN010154/APP/7.18]**.

2.7.2 Construction workers will then be transported around the Proposed Development via shuttle buses (if required). The usage of the car parks will be monitored and the potential to introduce additional parking will be explored during peak construction if required, to ensure that parking does not occur anywhere outside of the Principal Site.

2.7.3 A total of 15 cycle parking spaces will also be provided within the construction compounds of the Principal Site, to accommodate any trips made to the Principal Site via sustainable modes of travel.

2.7.4 No car parking spaces will be provided for construction workers within the construction compounds serving the Cable Corridor, as staff will be transferred to and from this portion of the DCO Site via a shuttle bus service. All construction workers associated with working along the Cable Corridor will park within the construction compounds associated with the Principal Site access C-009, as set out in the **Framework CTMP [EN010154/APP/7.18]**.

2.7.5 A shuttle service will be provided to pick-up and drop-off construction staff to transport them to/from the Principal Site in line with the **Framework CTMP [EN010154/APP/7.18]**. If additional demand is identified by the monitoring carried out as part of the detailed CTMP then additional shuttle services will be provided to further reduce the number of construction staff vehicles on the network.

2.7.6 The **Framework CTMP [EN010154/APP/7.18]** ensures the proper management of construction related vehicles across the Proposed Development.

2.8 Recovery, Recycling and Disposal of Waste

2.8.1 The Principal Contractor will separate the main waste streams on-site, prior to transport to an approved, licensed third party waste management facility for recovery, recycling or disposal.

2.8.2 A Site Waste Management Plan (SWMP) will be prepared by the Principal Contractor, which will provide a waste estimate and specify key responsibilities, reporting and auditing requirements and waste recovery targets. The SWMP will be finalised with specific measures to be implemented prior to the start of construction.

2.8.3 All waste to be removed from the DCO Site will be undertaken by fully licensed waste carriers and taken to licensed waste facilities and managed in line with the requirements of the Waste (England and Wales) Regulations (2011) (Ref 4) and the Hazardous Waste (England and Wales) Regulations (2005) (Ref 5).

2.8.4 The Proposed Development will apply the waste hierarchy, in priority order; prevention, preparation for reuse, recycled, other recovery and disposal.

2.8.5 If required, a Materials Management Plan (MMP) would be developed by the Principal Contractor to support the reuse of excavated materials, minimise off-site disposal; and to demonstrate the necessary lines of evidence to support the proper reuse/offsite disposal of materials and ensure compliance with regulatory guidance.

2.9 Consents, Licences and Permits

2.9.1 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.

2.10 Good Practice

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

2.11 Security

2.11.1 Site security during construction will be managed by the contractor(s). A security perimeter fence will be implemented early in the construction phase to secure the Principal Site. The DCO 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).

2.11.2 There will be designated security staff during construction who will manage the DCO Site Boundary and patrol the perimeter.

2.12 Responding to Environmental Incidents and Emergencies

2.12.1 Prior to construction, the Principal Contractor will develop an Emergency Response Plan (ERP) in consultation with the relevant local authority emergency planning officer, emergency services including the local fire service, as well as the Environment Agency in relation to responding to flood warnings and events.

2.12.2 The ERP will detail the procedures for responding to incidents (such as spills, leaks or generation of silt laden runoff so as to prevent pollution) and emergencies (such as flooding) on site, and any reporting.

3. Mitigation and Monitoring

3.1 Purpose

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 reviewed and updated following consent when the Framework CEMP is updated to the detailed, final CEMP(s).

3.2 Climate Change

Table 1: Climate Change

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
CC-C1	Greenhouse Gas (GHG) emissions from construction traffic and equipment and use of natural resources in construction materials.	Appropriate standard and best practice control measures will be included in the detailed CEMP(s), which may include, but not be limited to: a. Increasing recyclability by segregating construction waste to be re-used and recycled where reasonably practicable; b. Designing, constructing and implementing the Proposed Development 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; c. 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); d. Liaising with construction personnel for the potential to implement staff minibuses and car sharing options; e. Implementing a Travel Plan within the CTMP to reduce the volume of construction staff and employee trips to the Proposed Development, while encouraging the use of lower carbon modes of transport by identifying and communicating local bus connections and pedestrian/cycle access routes to/ from the Proposed Development to all construction staff, and providing appropriate facilities for the safe storage of cycles; f. Switching vehicles and plant off when not in use and ensuring construction vehicles conform to current EU emissions standards; and g. Conducting regular planned maintenance of the construction plant and machinery to optimise efficiency.	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).
CC-C2	Increase in flood risk during construction	Appropriate standard and best practice control measures will be included in the detailed CEMP(s), which may include, but not be limited to:	Auditing during construction.	The overall responsibility will

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	as a result of Climate Change	a. Storing topsoil and other construction materials outside of the 1 in 100-year floodplain extent where feasible. If areas located within Flood Zone 2 (or 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; b. Conducting regular planned maintenance of the plant and machinery; c. Appointing named person(s) to monitor weather forecasts on a monthly, weekly and daily basis, and plan works accordingly. d. The construction laydown area site office and supervisor will be notified of any potential flood occurring by use of the Flood line Warnings Direct or equivalent service. e. Developing health and safety plans for construction activities to account for potential Climate Change impacts on workers, such as flooding and heatwaves. To include measures such as toolbox talks on training on dangers of extreme weather conditions. f. All temporary construction compounds will be located outside of areas of fluvial Flood Zone 2 and 3. g. Provision of temporary settlement and drainage measures (see **Table 4** for further information).	To be confirmed in detailed CEMP(s).	be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).
CC-C3	Extreme weather events as a result of climate change and climate change resilience	Contractors will be required to monitor weather forecasts and plan works accordingly with internal methodologies to manage workers and resources in extreme weather conditions. 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. Contractors will be required to sign up to receive the Environment Agency's flood alerts and plan works accordingly to manage extreme weather conditions such as storms and flooding. Consideration of future climate conditions when selecting planting species for use in green infrastructure.		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		Covering exposed soil with grass (where applicable) during construction works will reduce permeability and protect against increased soil erosion and degradation. Ensure all outdoor workers have access to indoor facilities, air conditioning, breaks in shaded areas and water breaks. Outdoor workers will have access to adequate PPE. Cease outdoor and non essential work if working conditions are too dangerous, and could result in injury to workers. Keep stored materials away from areas of the Proposed Development with potential flood risk.		

3.3 Cultural Heritage

Table 2: Cultural Heritage

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
CH-C1	Potential for impact upon buried archaeological remains	The Proposed Development aims to minimise impacts upon buried archaeological remains through preservation in situ, however, where impacts are not avoidable, mitigation through archaeological recording will be implemented. If deemed necessary, an Archaeological Clerk of Works can be agreed. Proposed and potential measures to minimise impacts on buried archaeological remains during construction include: a. Existing hedgerows and woodland will be retained wherever possible; b. Exclusion of areas of complex archaeological remains from development where feasible; c. Use of horizontal directional drilling (HDD); d. Use of low level piling and avoidance of archaeology from key areas of impact within Solar PV Areas (such as Solar stations or access tracks); e. Additional areas where preservation in situ is the preferred strategy will be informed through the ongoing and planned evaluation. These could include small exclusion zones (around remains of particular significance) or no-dig solutions such as ballast footings (to be discussed with the archaeological advisor) to avoid piling completely, or areas where cabling is excluded (to reduce any impacts to the low level piling only). When the	All archaeological work will be undertaken in line with the Framework WSI (secured by requirements of the DCO). Site specific Written Schemes of Investigation (WSI) will be submitted and agreed with the local authority.	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		detailed design determines that 'no-dig' solutions are not viable or warranted, small-scale and localised archaeological excavations will take place, to record the expected buried remains in advance of construction. These locations are more likely to be those where comprehensive ground disturbance from construction is anticipated (BESS, Onsite Substation, Solar Stations, trenching associated with cabling) and where there is less flexibility in the design (regarding the specific location of the works or the required construction methods). Where exclusion zones or non-intrusive methods are required, the detailed CEMP(s) will include a strategy which will detail appropriate good practice measures during construction (such as use of appropriate equipment or limiting avoiding heavy plant movements during inclement weather on sensitive areas to avoid damage to below ground remains etc.) and ways of monitoring of this. The detailed CEMP(s) will include an action plan detailing the required mitigation in the event that unplanned activities threaten the preservation of known buried archaeological remains. Where impacts to below ground archaeological remains as a result of the Proposed Development cannot be avoided, an appropriate programme of archaeological investigation and recording will be undertaken, with the objective of advancing the understanding of the significance of archaeological		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		remains within the DCO Site that may be disturbed or either wholly or partially lost. The fieldwork will be undertaken prior to the commencement of construction works but may also include monitoring and recording works during construction. The detailed CEMP(s) will reflect mitigation required during construction which will be set out in the WSI and include measures such as ensuring monitoring is in place where required.		
CH-C2	Temporary impacts on the setting of heritage assets during construction	Direct impacts to designated heritage assets are not anticipated during construction. Temporary impacts on the setting of heritage assets will be minimised by the retention of the existing hedgerows and woodland (where possible) and provision of landscape screening as set out in the **Framework LEMP [EN010154/APP/7.15]**. The Proposed Development will seek to retain any hedgerows deemed 'important' under the archaeology and history criteria of the Hedgerows Regulations 1997. With regards to any localised removal of Important Historic Hedgerows (as per the **Hedgerow Plan [EN010154/APP/2.9]** and **Appendix 7-E [EN010154/APP/6.3]**) to facilitate construction, where hedge removal is required for visibility splays only, where practical they will be trimmed down to a height to be agreed with County Highways, most likely 0.9m, so that it is not removed altogether and can regrow after construction.	None	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s)

3.4 Ecology and Nature Conservation

Table 3: Ecology and Nature Conservation

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
ECO-C1	Potential direct and indirect impacts to designated ecological sites, habitats (including ancient woodland and individual trees, arable field margins, swamp, neutral grassland and coastal and floodplain grazing marsh), and notable species (including aquatic macroinvertebrates and macrophytes, terrestrial invertebrates and non-breeding birds)	In addition to the good practice measures that will be implemented during construction of the Proposed Development to mitigate construction-related effects associated with dust deposition, air pollution, pollution incidents (including the safe storage of chemicals / other hazardous materials), water quality, lighting, noise and vibration detailed elsewhere in this Framework CEMP, the following measures to minimise impacts on designated sites, habitats and notable species include: a. River Witham, Aubourn to Beckingham Local Wildlife Site (LWS) ▪ A security perimeter fence will be implemented early in the construction phase to secure the Principal Site and prevent construction activity from intruding into the River Witham, Aubourn to Beckingham LWS. The fence design will include gaps to allow mammals, including small deer, Badger, Brown Hare and Hedgehog, to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these mammal passes will be determined following pre-commencement surveys. ▪ Any access that is required for construction of the connecting corridor will utilise existing access points either side of the LWS, such as those already used by agricultural machinery. Vegetation clearance in these areas will also be minimised as much as is practicable. ▪ The laying of cabling will be undertaken using non-intrusive methods, with launch and exit pits outside of designated sites to protect habitats. The setting back of these works will	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.

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

mitigate for potential hazards such as chemical spills, thus avoiding potential direct impacts to the LWS.

b. Navenby Green Man Road Verges LWS

- To limit disturbance to habitat inside the Navenby Green Man Road Verges LWS during construction, the working area will be kept to a minimum and no spoil, materials or vehicles will be stored within the Navenby Green Man Road Verges LWS.
- Vegetation clearance in these areas will be minimised as much as is practicable to facilitate the construction access track into the fields along Green Man Road. Post-construction habitat reinstatement will be undertaken soon after construction. This will comprise removing the soil and storing this, before re-instating this on completion of the cabling works, with re-seeding using locally sourced seed where practicable (potentially collected from other nearby higher quality calcareous grassland).
- A security perimeter fence will be implemented early in the construction phase to secure the DCO Site Boundary and prevent construction activity from intruding into the remainder of the LWS, which will prevent parking and driving on road verges.
- Vehicles/plant will be cleaned away from the water in dedicated vehicle washing areas to prevent potential pollutants entering the DCO Site (and in particular the LWS). Wheel washes will reduce the trafficking of soil onto adjacent highways, with prompt clearance as a remedial action.
- The spread of dust and sediment will be controlled through fine water spraying of vehicle routes.
- On-site plant will be regularly serviced, monitored and inspected for leaks to prevent construction spillages and to

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

ensure pollutants do not enter any waterways/spill onto adjacent habitats. Plant and machinery will be refuelled in dedicated refuelling areas, with drip-trays used routinely and spill kits available.

- Measures to reduce vehicle and mechanical plant noise (as required based on existing noise levels) will include turning off plant and machinery when not in use.
- Temporary access will be required during construction across a 30m section of Navenby, Green Man Road Verges LWS. Therefore, to limit the potential impacts to the LWS, vegetation clearance to facilitate access will ensure that turves will be taken for the working area and stored, managed, monitored and watered as needed, until they can be replaced back in the verge. Underlying verge topsoils and subsoils will also be stripped and stored off the LWS in adjacent fields (separately to soil from the fields), to retain the original soil profile and seed bank. Once construction is completed, the temporary access will be removed and the top and subsoil from the LWS will be backfilled. The turves will then be replaced appropriately. In addition, it may be possible to supplement the re-instated areas with seed collected from more diverse sections of the LWS, offering the opportunity to enhance these sections of the LWS, to a calcareous grassland community more representative of that identified in the LWS description and restore the LWS to a more favourable condition.

c. Any lighting used during construction, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats (including LWS) and watercourses. Artificial lighting of these habitats may impact habitats and disrupt species'

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		movements. Therefore, any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Any requirements for task-specific lighting during construction will be designed to be downward directional and will only be used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage. d. A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats outside of the DCO Site. e. Any access that is required for construction will utilise existing access points where possible, such as those already used by agricultural machinery and will not intrude into any LWS outside of the DCO Site. Vegetation clearance in these areas will also be minimised as much as is practicable. f. Construction compounds will be setback from any LWS that is adjacent to the DCO Site, with set-backs applicable to habitats within LWS, e.g. 15m set-back from woodland habitats (Tunman Wood LWS (including Stocking Wood) and Tunman Wood North LWS) and a 10m set-back from Navenby Heath Road Verges LWS. Security fencing will be implemented at an early stage to ensure incursion into LWS's does not occur. g. Woodland and trees will be protected, in line with British Standard Recommendations (Ref 6) with undeveloped buffers of at least 15m from the boundary of woodlands and tree lines. These areas will be protected by clearly defined root protection areas, concordant with the requirements for each individual tree, to prevent		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		damage/compaction of roots by plant and other machinery and prevent direct or indirect impacts to trees. h. Should the detailed design route any cables through trees or woodland that are being retained, they will be installed via HDD at least 2m beneath the ground surface in order to protect the tree roots. i. The Proposed Development design includes undeveloped areas of at least 20m between standing water and the Proposed Development. j. Areas of cropland will be retained, particularly the arable margins, as much as is practicable, buffered and their quality improved through positive management. This habitat is readily re-created within arable field margins, through management such as annual cultivation and arable fields with pollen and nectar and, or, wild bird mix. These habitats will be managed through annual cultivation to provide suitable conditions for arable flora to grow. New areas of pollen and nectar and, or, wild bird mixes will be provided within non-developed areas. Retained arable field margins present within the DCO Site Boundary will be protected during construction, as the setbacks from watercourses (10m undeveloped area) and boundary habitats (such as 5m from hedgerows) will likely overlap with and include arable field margins. k. Accessible arable field margins within the DCO Site will be cultivated annually (outside the nesting bird season) to provide suitable conditions for germination. Prior to construction scarce arable flora seed from fields AF17, AF29 and AF72 (see **Figure 8-B-1** of the ES **[EN010106/APP/6.2]**) would be harvested by hand and seeded in cultivated field margins within retained arable fields close to these fields		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
ECO-C2	Impacts to running water habitat	a. A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into the riparian habitats of running water (a minimum 10m from the bank-top of the watercourse). The fence design will include gaps to allow mammals, including small deer, Badger, Brown Hare and Otter, to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these mammal passes will be determined following pre-commencement surveys. b. Any access that is required for construction of the Cable Corridor, where it crosses running water habitats, will utilise existing access points where possible, such as those already used by agricultural machinery. Vegetation clearance in these areas will also be minimised as much as is practicable. There will be no access over the River Witham or River Brant. c. The laying of cabling will be undertaken using non-intrusive methods, with launch and exit pits outside of Main Rivers (River Witham and River Brant). This will mitigate for potential hazards such as chemical and soil spills, thus avoiding potential direct impacts to running water. d. All cables will be installed at a minimum of 2m below minor/ordinary watercourses (except where minor/ordinary watercourses have minimal or no water flow and water management is easily managed), excluding the River Witham and River Brant (i.e. major watercourses) where cables will be installed by trenchless methods (e.g. HDD) at a minimum of 5m below the bed to prevent disturbance to fish species using running water habitats. The combination of sealed cabling and buried depth of at least 5m below the bed of the River Witham and River Brant is adequate to mitigate any potential impact of Electromagnetic Fields (EMFs) on fish	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).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		transiting along these rivers. Launch and exit pits will be located outside of Main Rivers (River Witham and River Brant). e. Construction compounds will be setback from running water habitats, with a minimum 10m from the bank-top of the watercourse (as described above), with security fencing implemented at an early stage to ensure incursion into the riparian habitats of running water does not occur. f. Where possible, surface water will drain from the Proposed Development's Sustainable Drainage Systems (SuDS) based drainage system to local receiving watercourses via a new ditch as this avoids the need to construct an engineered outfall. However, if engineered outfalls are required, the location, position and orientation of them will be carefully designed to minimise any adverse impacts on aquatic habitats. g. Any construction within the vicinity of watercourses may require temporary lighting, which has the potential to spill into adjacent watercourses. Artificial lighting of these habitats may disrupt species' movements. Therefore, any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance to species associated with these habitats. Any requirements for task-specific lighting during construction will be designed to be downward directional and will only be used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage.		
ECO-C3	Impacts to hedgerow habitat	h. Retained hedgerows and scrub along field or ditch boundaries and/ or woodland edges will be protected, in line with British Standard Recommendations (Ref 6) with undeveloped buffers of at least 5m	To be confirmed in	The overall responsibility will be with the

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		from the boundary of hedgerows without trees and a wider buffer, concordant with the requirements for each individual tree, for any hedgerows with trees. These areas will prevent damage/compaction of roots by plant and other machinery and prevent direct or indirect impacts to hedgerows. i. A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats as described above. The fence design will include gaps to allow fauna that may use these habitats, including Badger, to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these gaps will be determined following pre-commencement surveys. j. Any lighting used during construction, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats which may disrupt species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage. k. The Proposed Development will seek to retain any hedgerows deemed 'important' under the Wildlife and Landscape criteria of the Hedgerows Regulations where possible. With regards to any localised removal of Ecological Important Hedgerows (as per the **Hedgerow Plan [EN010154/APP/2.9]** and **Appendix 8-B:**	detailed CEMP(s).	Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		Terrestrial Habitats and Notable Flora of the ES **[EN010154/APP/6.3]**) to facilitate construction, where hedge removal is required for visibility splays only, where practical they will be trimmed down to a height to be agreed with County Highways, most likely 0.9m, so that it is not removed altogether and can regrow after construction. l. Construction compounds will be set back from hedgerows and scrub (as described above), with security fencing implemented at an early stage to ensure incursion into hedgerows does not occur.		
ECO-C4	Impacts to fish	a. For cable crossings, the avoidance of intrusive trenching techniques will minimise impacts on fish species and maintain connectivity of habitats for fish, e.g., Eels. However, fish rescue may be required under a FR2 permit granted by the Environment Agency during construction where de-watering or over-pumping is required. Where any over-pumping is required, Eels (England Wales) Regulations 2009 (Ref 23) compliant screens will be used on any pump used for drain-down or over pumping of watercourses b. During activities where there are direct impacts to watercourses or water bodies, for example through drain-down, culverting, or open-trenching, the following best practice methods will be followed: i. avoidance of key fish migration timings wherever practicable, including the avoidance of the coarse fish spawning season, which runs from 15th March to 15th June (inclusive); ii. where practicable, construction will be undertaken during daylight hours to avoid the need for artificial light; iii. all cables will be installed at a minimum of 2m below minor/ordinary watercourses (except where	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).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		minor/ordinary watercourses have minimal or no water flow and water management is easily managed), excluding the River Witham and River Brant (i.e. major watercourses (Main Rivers)) where cables will be installed by trenchless methods (e.g. HDD) at a minimum of 5m below the bed to prevent disturbance to fish species. The combination of sealed cabling and buried depth of at least 5m below the bed of the River Witham and River Brant is also adequate to mitigate any potential impact of EMFs on fish transiting along these rivers; and iv. if required, fish rescue and / or translocation during drain-down of watercourses or water bodies, and during over-pumping for open trenching through watercourses / ditches.		
ECO-C5	Impacts to grass snake and common toad	In addition to the best practice measures listed above, the following measures to minimise impacts to grass snake and common toad include: a. Pre-construction surveys will be undertaken to support the baseline survey findings, the purpose of which is to ensure mitigation during the construction phase is based on the latest protected species information and Proposed Development design. Should there have been any changes to the Proposed Development design which could impact upon Grass Snake and Common Toad, where found within the DCO Site, then mitigation measures will be updated accordingly. b. Vegetation clearance throughout the DCO Site 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 also Common	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).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		Toad), concordant with the requirements for other species, such as nesting birds and Brown Hare. Vegetation supporting reptiles will be cut in a phased approach, firstly cutting to 30cm, then, following a period of no less than 24 hours, to 15cm and then to ground level, after another 24 hours. In areas where Grass Snake (and Common Toad) have been identified, any habitat features within such areas which may conceal sheltering Grass Snake (and Common Toad) such as log piles, rubble mound bunds will not be dismantled during their inactive season (November to February inclusive). There will be no need to undertake any relocation of reptiles within the DCO Site. c. Any excavations will be covered, or a means of escape (such as a ramp) will be implemented to prevent reptiles and amphibians becoming trapped. No excavations will remain open overnight.		
ECO-C6	Impacts to breeding birds	In addition to the good practice measures listed above, the following measures to minimise impacts to breeding birds during construction will include: a. Pre-construction vegetation clearance will avoid the nesting bird period, where practicable i.e., March to August (inclusive). Should any vegetation clearance be required within the nesting bird period then this will be checked, prior to vegetation removal, for the presence of nesting birds, by a suitably qualified ornithologist. If active nests 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. b. Pre-construction surveys will be undertaken to support the baseline survey findings and identify the locations of specially protected bird species, the purpose of which is to ensure mitigation during the construction phase is based on the latest information. Should there have been any changes to the Proposed Development design	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).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		which could impact upon nesting Schedule 1 species, then mitigation measures will be updated accordingly. c. Any lighting used during construction will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance that could impact upon specially protected nocturnal bird species. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage.		
ECO-C7	Impacts to bats (foraging/commuting and roosting)	In addition to the best practice measures listed above, the following additional measures to minimise impacts to roosting and commuting/foraging bats will include: a. Pre-construction (ground-level inspection) surveys will be undertaken to support the baseline survey findings, the purpose of which is to ensure mitigation during the construction phase is based on the latest protected species information and Proposed Development design. Should there have been any changes to the design which could impact upon roosting bats (i.e. additional tree removal of trees with potential to support roosting bats), where found within the DCO Site, then further surveys will be undertaken as required (e.g. bat emergence surveys), then Natural England licences will be sought (if required) and mitigation measures updated accordingly. b. Where lighting is required, particularly in winter months when daylight hours are shorter, it will have a power output of 8kVA, be directed away from existing retained and sensitive habitats to minimise light disturbance, will be temporary in nature, and will conform to best practice guidelines with respect to minimising light	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).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		spill into retained habitats to prevent or reduce the impact on bats and will be minimised to that required for safe site operations and security and directed towards the middle of the DCO Site rather than towards the boundaries. c. Where any temporary work is required within 15m of any tree with the potential to support roosting bats, such as enabling works or clearance for construction, then a precautionary working method statement would be provided to avoid potential impacts. This would include the use of an Ecological Clerk of Works (ECoW).		
ECO-C8	Impacts to riparian mammals (Water Vole and Otter)	Undeveloped areas of a minimum of 10m from the bank-top of watercourses (extended to a minimum of 100m from the River Witham where the Interconnecting Cable Corridor is proposed) are also included within the design to protect riparian habitats, some of which (such as the River Witham) support Water Vole and Otter. These buffers and undeveloped zones will mitigate for potential hazards such as chemical and soils spills into watercourses and avoid potential direct impacts to watercourses and any protected species using them. In addition to the best practice measures listed above, the following measures to minimise impacts to riparian mammals will include: a. Pre-construction surveys will be undertaken to support the baseline survey findings where intrusive crossing methods of watercourses are proposed within the DCO Site. The purpose of these pre-construction surveys is to ensure mitigation during the construction phase is based on the latest protected species information. Where there have been any changes to Otter or Water Vole distribution within the DCO Site (or the status of the potential Otter holt), mitigation measures (such as non-intrusive crossing for cabling) will be updated accordingly and the relevant Natural England protected	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).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		species licence application would be applied for if disturbance to breeding Otter was unavoidable. b. The crossing of the River Witham and River Brant (i.e. major watercourses) will be undertaken using trenchless techniques (e.g. HDD) that would not disturb the watercourse, with the depth of the cable below the bed of these rivers to be a minimum of 5m, to avoid impacts to watercourses and bankside vegetation (riparian habitats) and also including launch and exit pits setback from the banktop of the watercourse to protect riparian habitats. c. Measures to avoid animals being injured or killed within construction working areas, through excluding them from such areas (e.g., fencing) will prevent animals from falling into and becoming trapped in excavations. Furthermore, any excavations will be covered, or a means of escape (such as a ramp) will be implemented. No excavations will remain open overnight. d. Construction in the Interconnecting Cable Corridor within 100m of the River Witham will only be undertaken during daylight hours and will avoid two hours after sunrise and two hours before sunset, reduced to one hour between November and February (inclusive) because of the limited daylight hours. This will prevent disturbance to any resting Otter in the River Witham. e. Any lighting used during construction, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats which may disrupt species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage.		
ECO-C9	Impacts to badger	The Proposed Development has been designed to avoid Badger setts within the DCO Site. Any setts within the Principal Site will have an appropriate exclusion zone of 30m around the sett to prevent disturbance and accidental damage. The Cable Corridor is sufficiently wide that the final route for the cable laying can be micro-sited to avoid any Badger setts, including a 30m exclusion zone around setts. In addition to the best practice measures listed above, the following measures to minimise impacts to badger will include: a. Pre-construction surveys will be undertaken to support 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. Should there have been any changes to Badger distribution within the DCO Site, Natural England licences will be sought (if required) and mitigation measures will be updated accordingly. b. Measures to avoid animals being injured or killed within construction working areas, through excluding them from such areas (e.g., fencing) will prevent animals from falling into and becoming trapped in excavations. Furthermore, any excavations will be covered, or a means of escape (such as a ramp) will be implemented. No excavations will remain open overnight.	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).
ECO-C10	Impacts to other mammals (brown hare, hedgehog and harvest mouse)	In addition to the good practice measures listed above, the following additional measures to minimise impacts to other mammals will include:	To be confirmed in	The overall responsibility will be with the

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		a. Vegetation clearance will be undertaken in advance of construction and at an appropriate time of year to avoid incidental injuring or killing of animals, such as Brown Hare and concordant with the requirements for other species such as nesting birds and reptiles. b. Any excavations will be covered, or a means of escape (such as a ramp) will be implemented. No excavations will remain open overnight.	detailed CEMP(s).	Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).
ECO-C11	Potential to introduce/spread invasive non-native species (INNS) beyond the DCO Site Boundary during construction of the Proposed Development.	Pre-construction surveys will be undertaken to provide an update on the presence and location of any Invasive Non-Native Species (INNS) plant and animal species, the findings of which will inform the implementation of measures to prevent their spread into the wild. These surveys will inform the production of a Biosecurity Management Plan which will set out procedures to ensure that no INNS species are brought onto the DCO Site (e.g., Wildlife and Countryside Act 1981 (as amended) (Ref 7 Schedule 9 species) and will be formalised in the detailed CEMP, secured through the DCO. In the event that any future infestations of INNS are identified prior to and or during the development process, exclusion zones will be established around them, and an ECoW contacted for advice as required. As noted in **Table 4**, management of wheel wash water will be implemented, which will avoid the spread of INNS. Equipment, vehicles and plant are to be washed out and cleaned in designated areas within the construction compounds where runoff can be isolated for treatment before disposal. Wash water will be prevented from passing untreated into watercourses.	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).
ECO-C12	Potential habitat loss.	The temporary construction compounds will not be greater than 2ha in size and will be located on existing Cropland habitat at a minimum distance of 4.5m from hedgerow habitats.	To be confirmed in	The overall responsibility will be with the

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
			detailed CEMP(s).	Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

3.5 Water Environment

Table 4: Water Environment

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
WAT-C1	Leakage or accidental spillage of construction materials and potential pollutants used onsite, migrating to nearby surface watercourses or infiltrating to groundwater. Any flooding during construction could flood construction equipment and/materials, causing release of pollutants to nearby surface watercourses or infiltrating to groundwater.	**General** No construction works will be undertaken within at least 10m of all watercourses and ponds (with the exception of watercourse cable crossings and access track crossings (and potentially drainage outfalls)), 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. The CEMP will be reviewed, revised and updated as the Proposed Development progresses to ensure all potential impacts and residual effects are considered and addressed as far as practicable, in keeping with available good practice at that point in time. The principles of the mitigation measures set out below are the minimum standards that will be implemented. However, it is acknowledged that for some issues, there are multiple ways in which they may be addressed and methods of dealing with pollutant risk will be continually reviewed and adapted as construction works progress (e.g. the management of construction site runoff containing excessive levels of fine sediments).	Temporary drainage will be monitored throughout construction. Specific details will be confirmed in the detailed CEMP(s). The Water Management Plan (WMP) (which will be produced post consent as part of the detailed CEMP(s)) will include details of pre, during and post-construction water quality monitoring.	Specific Responsibilities to be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
WAT-C2	Leakage or accidental spillage of construction materials and potential pollutants used onsite, migrating to nearby surface watercourses or infiltrating to groundwater. Any flooding during construction could flood construction equipment and/materials, causing release of pollutants to nearby surface watercourses or infiltrating to groundwater.	**Good Practice Guidance** The contractor will comply with the following Guidance for Pollution Prevention (GPP) (Ref 8): a. GPP 1: Understanding your environmental responsibilities – good environmental practices; b. GPP 2: Above ground oil storage; c. GPP 3: Use and design of oil separators in surface water drainage systems; d. GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer; e. GPP 5: Works and maintenance in or near water; f. GPP 6: Working on construction and demolition sites; g. GPP 8: Safe storage and disposal of used oils; h. GPP 13: Vehicle washing and cleaning; i. GPP 19: Vehicles: Service and Repair; j. GPP 20: Dewatering underground ducts and chambers; k. GPP 21: Pollution Incident Response Plans; l. GPP 22: Dealing with spills; and m. GPP 26: Safe storage – drums and intermediate bulk containers. n. GPP27: Installation, decommissioning and removal of underground storage tanks. Requirements in these guidance documents will be listed in or appended to the detailed CEMP(s).	Temporary drainage will be monitored throughout construction. Specific details will be confirmed in the detailed CEMP(s). The Water Management Plan (WMP) (which will be produced post consent as part of the detailed CEMP(s)) will include details of pre, during and post-construction water quality monitoring.	Specific Responsibilities to be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		Where new GPPs are yet to be published, the contractor will comply with the following Pollution Prevention Guidance (PPGs): a. PPG7: Safe storage – the safe operation of refuelling facilities (Ref 9); and b. PPG18: Managing fire water and major spillages (Ref 10). Additional good practice guidance to protect the water environment is detailed in the following key documents: a. British Standards Institute (2009) BS6031:2009 Code of Practice for Earth Works (Ref 11) b. British Standards Institute (2013) BS8582 Code of Practice for Surface Water Management of Development Sites (Ref 11); c. CIRIA C753 (2015) The SuDS Manual (second edition) (Ref 12); d. CIRIA C811d (2023) Environmental good practice on site guide (fifth edition) (Ref 13); e. C648 (2006) Control of water pollution from linear construction projects, technical guidance (Ref 14); f. C609 (2004) Sustainable Drainage Systems, hydraulic, structural and water quality advice (Ref 15); g. C532 (2001) Control of water pollution from construction sites – Guidance for consultants and contractors (Ref 16); and h. C736F Containment systems for prevention of pollution (Ref 17).		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
WAT-C3	Leakage or accidental spillage of construction materials and potential pollutants used onsite, migrating to nearby surface watercourses or infiltrating to groundwater.	**Management of Construction Site Runoff** a. 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 accord with the principles set out in industry guidelines including the CIRIA report 'C532: Control of water pollution from construction sites' (Ref 16) and CIRIA report 'C648 Control of water pollution from linear construction sites' (Ref 14). Measures may include use and maintenance of temporary lagoons, tanks, bunds and fabric silt fences or silt screens as well as consideration of the type of plant used; b. 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 DCO Site and ensuring that they are adequately protected using drain covers, sand bags, earth bunds, geotextile silt fences, straw bales, or proprietary treatment (e.g. lamella clarifiers). Any land drains damaged during the works would be reinstated as required; c. Where practical, earthworks will be undertaken during the drier months of the year. When undertaking earth moving works periods of very wet weather will be avoided, where practical, to minimise the risk of generating runoff contaminated with fine particulates.	Temporary drainage will be monitored throughout construction. Specific details will be confirmed in the detailed CEMP(s). The Water Management Plan (WMP) (which will be produced post consent as part of the detailed CEMP(s)) will include details of pre, during and post-construction water quality monitoring.	Specific Responsibilities to be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		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 Principal Contractor in accordance with the pollution prevention principles described in **Chapter 9: Water Environment** of the ES **[EN010154/APP/6.1]**; d. 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; e. Appropriately sized runoff storage areas for the settlement of excessive fine particulates in runoff will be provided; f. 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 removed from site for disposal at an appropriate and licensed waste facility; g. Equipment and plant are to be washed out and cleaned in designated areas within the Proposed Development construction compound where runoff		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		can be isolated for treatment before disposal as outlined above; h. Mud deposits will be controlled at entry and exit points to the DCO Site using wheel washing facilities and/or road sweepers operating during earthworks activities or other times as required. Potentially contaminated water from wheel washing facilities would be removed from site for disposal at an appropriate and licensed waste facility. Further details of how the wheel wash water would be isolated, treated and disposed of would be outlined within the detailed CEMP; i. 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; and j. Should the use of herbicide or other spray chemical be required, a method statement, operating procedure or similar will be prepared prior to the work commencing. This will include measures to protect ground and surface water, including that such work would not be undertaken during or before rainfall and high winds where practicable. Such work will only be carried out by competent personnel using products approved for UK use with adherence to manufacturer's instructions; and k. The Water Management Plan (WMP) (which will be produced post consent as part of the detailed CEMP(s)) will include details of pre, during and post-construction water quality monitoring. This will be based on a combination of visual observations and		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		sampling, and reviews of the Environment Agency's automatic water quality monitoring network.		
WAT-C4	Leakage or accidental spillage of construction materials and potential pollutants used onsite, migrating to nearby surface watercourses or infiltrating to groundwater.	**Management of Spillage risk:** a. Fuel will be stored and used in accordance with the Control of Substances Hazardous to Health Regulations 2002 (Ref 21), and the Control of Pollution (Oil Storage) (England) Regulations 2001 (Ref 20). Particular care will be taken with the delivery and use of concrete and cement as it is highly corrosive and alkaline; b. 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); c. 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 practicable or, if on site, only at designated areas within the Proposed Development site compound. Only construction equipment and vehicles free of all oil/fuel leaks will be permitted on-site. Drip trays will be placed below static mechanical plant; d. All washing down of vehicles and equipment will take place in designated areas and wash water will be prevented from passing untreated into watercourses;	Temporary drainage will be monitored throughout construction. Specific details will be confirmed in the detailed CEMP(s). The Water Management Plan (WMP) (which will be produced post consent as part of the detailed CEMP(s)) will include details of pre, during and post-construction water quality monitoring.	Specific Responsibilities to be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		e. All refuelling, oiling and greasing of plant will take place above drip trays or plant nappies, 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; f. As far as reasonably practicable, only biodegradable hydraulic oils will be used in equipment working in or over watercourses; g. All fixed plant used within the DCO Site will be self-bunded; h. Mobile plant is to be in good working order, kept clean, fitted with plant 'nappies' at all times and are to carry spill kits; i. The WMP (which will be produced post consent as part of the detailed CEMP(s)) will include details for pollution prevention and will be prepared and included alongside the detailed CEMP. Spill kits and oil absorbent material will be carried by mobile plant and located at high-risk locations across the DCO Site and regularly monitored and topped up. All construction workers will receive spill response training and tool-box talks; j. The DCO Site will be secure to prevent any vandalism that could lead to a pollution incident; k. Construction waste/debris are to be prevented from entering any surface water drainage or water body; l. 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 particulates or spillages could enter them, the drains		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		will be protected (e.g. using covers or sandbags) or the road regularly cleaned by road sweeper; m. Where practicable, concrete mixing and washing down of mixing plant is to be carried out by the suppliers and away from the DCO Site. Should on-site concrete washout be required, suitable facilities (e.g. geotextile wrapped sealed skip placed within a bunded area or specialist mobile concrete washout facility) will be provided to ensure that the high alkalinity wash water is adequately contained and prevented from entering surface or groundwater. Wash water will be removed from the DCO Site for appropriate disposal at a suitably licenced waste facility. Concrete washout is prohibited within a minimum of 20m of any body of water, including ditches and ponds, or surface water drains, and within 5m of a foul drain. Where practical, this will increase to 50m; and n. 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. Full monitoring details would be outlined in the detailed CEMP(s).		
WAT-C5	Any flooding during construction could flood construction equipment and/materials, causing release of pollutants to nearby surface	**Management of Flood Risk:** a. Construction works undertaken adjacent to, beneath and within watercourses will comply with relevant guidance, including Environment Agency and Defra guidance documents;	To be confirmed in detailed CEMP(s).	Specific Responsibilities to be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	watercourses or infiltrating to groundwater.	b. 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; c. Connectivity will be maintained between the floodplain and the adjacent watercourses, with no changes in ground levels within the floodplain as far as practicable; d. 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; and e. 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. The contractor will be required to produce an Emergency Response Plan following receipt of DCO consent and prior to construction, which will provide details of the response to an impending flood and will include: a. A 24-hour availability and ability to mobilise staff in the event of a flood warning; b. 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 DCO site may be flooded;		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		c. Details of the evacuation and site close down procedures; d. Arrangements for removing any potentially hazardous material and anything capable of becoming entrained in floodwaters, from the temporary works areas; e. 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; f. The temporary construction compounds proposed to be located on either side of the River Brant (illustrated on **Figure 3-1 [EN010154/APP/6.2]**), will be smaller 'HDD Camps'. These HDD Camps will be located around 20 – 40m from the HDD entry and exit points and will be specifically for the HDD activities; they will be smaller in size and shorter in duration (set up, used and demobilised again within 2-4 days). HDD camps will be located in Flood Zone 3b (land with a 3.33% chance of flooding each year) and 3a land with a 1% probability of flooding each year, including the impacts of climate change. Flood Zone 3b is associated with the Witham Washlands Flood Storage Area. Due to the short duration of each HDD camp (typically a few days for a small crossing) the Contractor is able to avoid this activity coinciding with a flood event with good confidence. The Contractor will check the ground conditions onsite, the water levels in the watercourse, and weather forecasts daily and postpone the HDD works if the HDD camp locations are already flooded or		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		if heavy rain is forecast in the few days before or during the HDD camp setup. Cleanup and demobilisation typically takes 0.5 -1 day for a HDD camp and therefore in the unlikely event that heavy rainfall occurs at the start of HDD, it should be possible to remove the camp before the location floods. g. In the instance of a relevant flood event (as notified in a flood warning alert from the Environment Agency), the HDD Camps either side of the River Brant within the Cable Corridor (within the Witham Washland Flood Storage Area) will be demobilised if required; h. Where trenching for cable installation is required within the Witham Washlands Flood Storage Area, plant can be demobilised and removed immediately in the event of a flood, as with the HDD Camps discussed above. No soil from trenching will be kept within the extents of the Witham Washlands FSA during the works; i. If water is encountered during below ground construction, suitable de-watering 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) (Ref 18) and the Environmental Permitting Regulations (2016) (Ref 19); and j. 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.		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
WAT-C6	Impact to Main Rivers	**Trenchless Crossings of the River Witham and River Brant (Horizontal Directional Drill)** The section of the Cable Corridor passing beneath the River Brant and a section of the Interconnecting Cabling beneath the River Witham will be installed using underground techniques such as horizontal directional drilling beneath the bed of the channel to avoid impacting the channel or bed. Mitigation measures would include: a. The cable would be installed a minimum of 5m beneath the bed in each case. A maximum depth would be finalised based on site specific risk assessment at each crossing location in order to minimise groundwater interactions where practicable; b. Information will be sought from the Environment Agency on the construction details of the flood defence embankments that may need to be crossed to inform the drilling approach for directional drilling beneath the Rivers Brant and Witham and associated flood defences. c. There will be a minimum 16m buffer between HDD send or receive pits from the landward toe of flood defences. Furthermore, in the case of the River Witham this distance is to be increased to 100m due to the presence of a potential Otter holt. d. A site-specific hydraulic fracture risk assessment including details of drilling fluid management would be developed prior to construction following further investigation of specific ground conditions at the crossing locations, and appropriate mitigation developed in line with best construction practice. There is also a need to manage drilling muds and	Temporary drainage will be monitored throughout construction. Specific details will be confirmed in the detailed CEMP(s). The Water Management Plan (WMP) (which will be produced post consent as part of the detailed CEMP(s)) will include details of pre, during and post-construction water quality monitoring.	Specific Responsibilities to be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		wastewater so that this would not pollute groundwater or surface water bodies. e. Directional drilling, or other trenchless techniques, would be undertaken by a specialist contractor and the water column above the drill path would be continuously monitored during drilling. Where there is an increased perceived risk of drill fluid leakage into a watercourse (i.e. lack of drilling mud returns) the drilling/boring operation would be suspended, remediation action implemented, and subsequently the methodology for that crossing re-evaluated. f. The drill fluids used within the drilling machine would be water based, such as naturally occurring bentonite clay. The fluid component of the drilling mud would be mains water, obtained from a nearby supply and tankered to site when required. There would be some recycling of drilling muds by the drilling plant used. g. The drilling fluid that returns to the drilling rig would be recycled within that drilling rig. h. Any wastewater/drilling products that are not recycled will be stored and removed from the DCO Site by a suitable waste management contractor and disposed of at a licenced wastewater facility; i. The send and receive pit excavations for drilling/boring will be located at least 10m from the watercourse edge, as measured from the top of bank (or 16m from the landward toe of flood defences) or 100m for the River Witham where the potential otter holt is located). This may require survey work (prior to construction) in some locations to adequately define		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		and agree the top of bank position with the Environment Agency. j. The exact dimensions of the send and receive pits would be determined by site and ground conditions but will be kept to a safe minimum in terms of length, width and depth. k. A shoring system appropriate to the ground conditions will be used as appropriate to minimise water ingress into the pits. l. The ingress of any groundwater will be carefully managed through design of the send or receive pit, shoring method, and a pumping and treatment system. Excessive ingress of water would make the pit unsafe and thus it is important that ingress is minimised and that a suitable system of managing that water is implemented. m. Once the cable is installed beneath the watercourse the pits and any cable trenches will be backfilled to the original ground level and seeded to reduce the risk of runoff and fine sediments entering the watercourse. n. Any bentonite pellets to be used in HDD activities will be PFAS (per-and poly fluoroalkyl substances) free.		
WAT-C7	Impact of trenchless crossings upon watercourses	**Watercourse crossings: Open cut installation** Where trenchless techniques are not feasible, watercourses would be crossed using open-cut trenching. Mitigation measures would include: a. A Pre-works Riparian and Morphology Survey of the channel of the watercourse to be crossed will be undertaken prior to construction. The pre-works	Temporary drainage will be monitored throughout construction. Specific details will be confirmed in the detailed CEMP(s). The Water Management Plan (WMP) (which will be	Specific Responsibilities to be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		survey will also ensure that there is a formal record of the condition of each watercourse prior to commencement of works to install cables beneath the channel. b. At this stage it is assumed that where open-cut crossings are required, water flow would be maintained by damming and over-pumping or fluming. Works will be carried out in the drier months where practicable as this would reduce the risk of pollution propagating downstream, particularly in the case of ephemeral watercourses; c. Once the watercourses are reinstated, silt fences, geotextile matting, or straw bales will be used initially to capture mobilised sediments until the watercourse has returned to a settled state; d. Watercourses will be reinstated as found and water quality monitoring will be undertaken prior to, during, and following on from the construction activity; and e. Regular observations of the watercourses will also be required post-works during vegetation re-establishment of the banks, especially following wet weather, to ensure that no adverse impacts have occurred; and f. Water quality monitoring will be undertaken prior to, during, and following on from the construction activity.	produced post consent as part of the detailed CEMP(s)) will include details of pre, during and post-construction water quality monitoring.	
WAT-C8	Impact of access track crossings	**Access Track Crossings of Watercourses** Access tracks will be constructed across the Principal Site. The access tracks will adhere to the appropriate	Temporary drainage will be monitored throughout construction. Specific details	Specific Responsibilities to be confirmed

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		10m buffer from water features, except where crossings are required. Mitigation measures include: a. Where existing crossings are to be used, it is assumed as a worst case that some degree of strengthening or improvement of the structures may be required (which may require minor widening). Where such upgrades are required, they are assumed to be a maximum extension to the structure width of 2m as a worst case. Where a new drainage ditch crossing is required, an open span structure would be used. Bridge foundations would be set back from the edge of the channel; b. Length-for-length watercourse enhancements are required wherever existing culverts may require extension for strengthening, in order to mitigate the impacts and to ensure compliance against WFD objectives (see **Appendix 9-B: WFD Assessment [EN010154/APP/6.3]**). This length-for-length watercourse enhancement will be outlined in the WFD Mitigation and Enhancement Strategy (to be produced post consent); c. Depending on the design of any watercourse crossings, floodplain compensation may be required on a 'like for like' and 'level for level' basis. Alterations to surface water flow pathways will also need to be considered and, if necessary, mitigated. This will include consideration of the span and soffit height of any open span bridge works to ensure no increase in flood risk;	will be confirmed in the detailed CEMP(s). The Water Management Plan (WMP) (which will be produced post consent as part of the detailed CEMP(s)) will include details of pre, during and post-construction water quality monitoring.	in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		d. As with intrusive cable installation, it is assumed that during installation works flow would be maintained by damming and over pumping. The Water Management Plan (to be produced post-consent) will set out details of water quality monitoring to be undertaken during construction. Due to the low level of risk posed by the construction works, this monitoring will consist of visual and olfactory observations as well as in-situ testing using hand-held water quality meters only.		

3.6 Landscape and Visual

Table 5: Landscape and Visual

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
LV-C1	Loss of existing landscape features, e.g. vegetation Visibility of construction activities	The **Framework Landscape and Ecological Management Plan (LEMP) [EN010154/APP/7.15]** sets out the measures proposed to mitigate the potential impacts and effects on landscape (and biodiversity) features during construction, and to enhance the landscape and biodiversity value of land within the DCO Site Boundary (i.e. the green infrastructure), including: a. During construction the retained vegetation will be protected. Measures to be employed will include the use of clearly defined stand-offs, managing the structure and integrity of the retained vegetation, and undertaking any pruning outside of the bird breeding season and in accordance with hedgerow regulations. b. Retained trees will be periodically inspected by an arboriculturist during construction. Where construction works are adjacent to retained trees, works will be undertaken under a watching brief to record root loss and to recommend further arboricultural works where required. A grassland buffer will be maintained around retained individual trees. c. Removal of existing hedgerow or existing trees will only occur where access is required. These crossings will, wherever practical, be located at	To be confirmed in detailed CEMP(s) and LEMP.	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s) and the LEMP.

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		current field access locations or in areas where there are existing gaps in the hedgerow and no trees. d. Where hedgerows are present within visibility splays at access and egress points from the local highway network, vegetation management will be used to maintain safety during the period of construction. These hedgerows will be reduced in height to 0.9m to allow suitable visibility, whilst avoiding hedgerow removal. e. An Environmental Clerk of Works (EnvCoW) will be tasked with ensuring that construction-related environmental mitigation measures are properly implemented, monitored, and maintained. These measures will include, but are not limited to, vegetation clearance, species identification, and exclusion of protected or non-protected species. The EnvCoW's responsibilities will encompass activities that could impact biodiversity, such as providing advice on methods to prevent or minimise light spill, as well as delivering Toolbox Talks before starting any work that might affect habitats and species. f. The Contractor will be responsible for establishing, managing, and monitoring the implementation of landscape and ecological mitigation during the five-year establishment aftercare period. The Applicant will inspect and		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		record the success of this establishment during that time. A detailed LEMP, which takes into account and is prepared in accordance with the principles of the **Framework LEMP [EN010154/APP/7.15]**, will be submitted to and approved by the relevant planning authority (secured through DCO Requirement). During construction, as far as is practicable, construction works will be limited to daylight hours, with focussed task specific lighting provided where this is not practicable. In winter months, mobile lighting towers will be used in isolated work areas. There will be lighting at the main construction compounds while construction is underway.		

3.7 Noise and Vibration

Table 6: Noise and Vibration

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
NV-C1	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.	**Best Practice Measures** Best Practicable Means that would be implemented 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: a. Ensuring that all appropriate processes, procedures and measures are in place to minimise noise before works begin and throughout the construction programme. b. All contractors to be made familiar with current legislation and the guidance in BS 5228 (Parts 1 and 2) which should form a prerequisite of their appointment. c. Ensuring that, 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. d. Use of modern plant, complying with applicable UK noise emission requirements. e. Hydraulic techniques for breaking concrete or rocks to be used in preference to percussive techniques, where reasonably practicable. f. When piling, use of lower noise piling where reasonably practicable. g. Off-site pre-fabrication where reasonably practicable. h. Regular and effective maintenance by trained personnel will be undertaken to keep plant and equipment working to manufacturer's specifications.	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. The detailed CEMP would also	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		i. All construction plant and equipment to be properly maintained, silenced where appropriate, operated to prevent excessive noise, and switched off when not in use. j. Loading and unloading of vehicles, dismantling of site equipment or moving equipment or materials around the DCO Site to be conducted in such a manner as to minimise noise generation, as far as reasonably practicable. k. All vehicles used on-site shall incorporate broadband reversing warning devices as opposed to the typical tonal reversing alarms to minimise noise disturbance where reasonably practicable. l. Appropriate routing of construction traffic on public roads and along access tracks to avoid sensitive areas where practicable (as set out in the **Framework CTMP [EN010154/APP/7.18]**). m. Unnecessary revving of engines will be avoided, and equipment will be switched off when not in use. n. Drop heights of materials will be minimised. o. Plant and vehicles will be sequentially started up rather than all together. p. 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. q. Any percussive piling works within 400m of residential properties will only occur for two periods of four hours (between 08:00 to 18:00) with at least one hour break between the two periods. ~~q.~~r. Activities to take place between 18.00 and 19.00 would include deliveries, movement to/from place of work, unloading, maintenance and general preparation work. This will not include operation of plant	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.	

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

or machinery likely to cause a disturbance to local residents or businesses unless covered by an exemption

Working hours will be in line with **Section 2.3** of this Framework CEMP.

Monitoring

a. A construction noise monitoring scheme shall be developed following appointment of a Principal Contractor and prior to commencement of construction works. Consents will be sought from the relevant local authority under Section 61 of the Control of Pollution Act 1974 (Ref 3) 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.

Communication strategy

a. Prior to construction works being undertaken, liaison will be undertaken with occupiers of sensitive receptors that may be adversely affected by construction noise and vibration.
b. 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.
c. Where high noise generating works are required to be undertaken outside of core daytime working hours, they will comply with the

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

restrictions stated in above, and Section 61 consents will be sought from the relevant local authority for the proposed construction works, excluding non-intrusive surveys, as relevant. The Section 61 application will set out the specific method of working, calculations of noise levels at nearby receptors, the actual working hours required, noise monitoring locations, details of communication measures and the mitigation measures implemented to minimise noise and vibration impacts.

d. Specific liaison with St Michael and All Angels church regarding the preferred timing for piling works in proximity to the receptor in addition to informing the church of when construction will be taking place.

Horizontal Directional Drilling (HDD) Activity

To ensure that significant noise effects do not occur due to potential night-time works, and as requirements for HDD activity will not be finalised until a Principal Contractor is appointed, a hierarchy of mitigation measures for HDD activities is listed below:

a. Where practicable, HDD works will be avoided within 200m (the distance at which significant effects are predicted at night) of residential receptors (although this will depend on the results of the ground investigation survey).
b. Where HDD activities may occur within 200m of sensitive receptors, the option for open cut cable laying will be explored as an alternative to HDD. (This is not viable if HDD is a commitment in specific locations due to stakeholder requests or other environmental issues).
c. Where HDD activities may occur within 200m of sensitive receptors, the timing of the HDD activities will be delayed until after 10am to avoid more sensitive time periods.

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

d. The potential for the use of quieter equipment than listed in **Appendix 11-D: Construction and Operational Noise Modelling** of the ES (**[EN010154/APP/6.3]** will be explored by the Principal Contractor.

e. Depending on the location, plant and timing of works, temporary acoustic fencing will be installed around the HDD site boundary to screen receptors from noise emission if HDD works are required within 200m of a sensitive receptor. This mitigation could provide 10 dB of attenuation when the noise screen completely hides the sources from the receptor.

Risk Assessment

f. If driven piling is to be undertaken, a risk assessment identifying the probability of damage to underground services as a result of construction induced vibration will be undertaken. The risk assessment would be undertaken with reference to conservative criteria from section B.4.4 of BS 5228-2, which identifies the maximum level of vibration that underground services should be subjected to as:
    i. maximum PPV for intermittent or transient vibrations 30 mms^{-1};
    ii. maximum PPV for continuous vibrations 15mms^{-1}.

g. If driven piling is to be undertaken, a risk assessment identifying the probability of significant levels of vibration at residential properties (i.e. exceeding a PPV of 1mm/s) resulting from any proposed driven piling activities will also be undertaken. This risk assessment will identify techniques least likely to cause disturbance to occupants of surrounding residential properties. Should significant levels of vibration be unavoidable, details will be provided in the risk assessment covering how exposure would be limited as far as reasonably practicable. Furthermore, the timing of any driven piling within 60m to residential receptors will be delayed until after 10am to avoid more sensitive time periods.

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		h. Mobile acoustic screening will be applied using temporary barriers where any construction activities are proposed within 20m of a residential property. Noise mitigation in relation to traffic and transport is outlined in Table 8.		

3.8 Socio-Economics and Land Use

Table 7: Socio-Economics and Land Use

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
SOC-C1	Disruption to local residents, businesses and community facilities	Primary mitigation measures are embedded within the Proposed Development to reduce construction effects (such as noise, air quality, transport, and landscape and visual) which in turn will mitigate the effects on the local community and existing facilities from a socio-economic and land use perspective. This includes: • Measures to mitigate the effects of construction dust outlined in Table 9. • Measures to mitigate the effects of construction noise outlined Table 6. • Measures to mitigate the effects of visual impacts from construction outlined in Table 5. • Measures to mitigate the effects of construction traffic outlined in Table 8. Mitigation measures embedded into the design of the Proposed Development comprise the following: • Positioning the above ground infrastructure to avoid Best and Most Versatile (BMV) land as far as practicable; • PV panel arrangement designed to provide a minimum 0.8m ground clearance to facilitate sheep grazing under the panels; • Locating noise-emitting equipment away from residential receptors; • Providing additional planting to sympathetically integrate the Proposed Development into the local area;	To be included in the detailed CEMP(s)	To be included in the detailed CEMP(s)

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		• Avoiding closure of PRoW and existing permissive paths and keeping any PRoW diversions as localised as reasonably practicable. Additional permissive paths are proposed to further enhance the local connectivity (the **Framework PRoW Management Plan [EN010154/APP/7.14]** details mitigation measures to reduce impacts on PRoW); and • Developing an optimal access strategy for construction, operation, and decommissioning to mitigate effects relating to transport, which in turn will mitigate the effects on the local community and existing facilities from a socio-economic and land use perspective.		
SOC-C2	Disruption to users of Public Rights of Way (diversions, changes to journey times, local travel patterns and certainty of routes)	The siting of solar PV panels and associated infrastructure seeks to minimise instances of development on both sides of PRoW. As set out in **Chapter 10: Landscape and Visual Amenity** of the ES **[EN010154/APP/6.1],** where development is proposed adjacent to a PRoW, an offset of a minimum of 10m from the centre line has been incorporated. Where development is proposed on both sides of a PRoW, sections of wider offsets have also been integrated to vary the extent of views experienced across the Principal Site where practicable. A **Framework Public Rights of Way Management Plan (PRoWMP) [EN010154/APP/7.14]** is submitted as part of the DCO application which sets out how PRoW would be managed during the Proposed Development construction phase to ensure the safety of users and site staff.	None	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed Public Rights of Way Management Plan.
SOC-C3	Impacts on agricultural land and soils	The agricultural land within the Cable Corridor is only temporarily required during construction and will be restored to the current ALC grade. The development of a detailed Soil Management Plan will	To be included in the detailed Soil	To be included in the detailed Soil

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		document good practice requirements for soil handling and protection during cabling. Agriculture use above the cable route will continue during operation, with cabling below the depth of agricultural cultivations. The soil survey of a defined cable route is to be undertaken post-consent The soil resource will be restored to pre-construction condition. Good practice recommendations on soil handling and protection within the Principal Site will be established within the detailed Soil Management Plan and the ALC grade will be unaltered through operation and decommissioning. A **Framework Soil Management Plan** has been prepared and is submitted with the DCO application **[EN010154/APP/7.10]**.	Management Plan	Management Plan

3.9 Traffic and Transport

Table 8: Traffic and Transport

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
TT-C1	Increased traffic flows, including HGVs on the roads leading to the DCO Site. Severance and intimidation associated with increased construction traffic and abnormal loads.	A **Framework CTMP [EN010154/APP/7.18]** is submitted with the DCO application and forms the framework for a detailed CTMP produced prior to construction (secured through DCO Requirement). Details to mitigate impacts from increased construction traffic include: a. Providing suitable points of access for construction vehicles with adequate visibility, with any supporting improvements (e.g. vegetation clearance) to take place within the highway boundary and the DCO Site Boundary if required; b. Delivering internal construction routes through the Principal Site, to allow vehicles to access all areas via the DCO Site access points; c. Maintaining access to and along PRoW and the existing permissive paths, or otherwise providing temporary or permanent PRoW and permissive path diversion routes where necessary to avoid any closures or potential conflicts with the Proposed Development where possible. The diversion routes will be agreed with the local authorities prior to construction, and a Framework PRoWMP **[EN010154/APP/7.14]** is submitted as part of the DCO application which contains further measures for PRoW and permissive path management; d. Managing areas where the proposed construction route crosses any existing local access roads, including by maximising visibility between construction vehicles and other users (including pedestrians and road users), implementing traffic management e.g. advanced signage to advise other users of the works, as well as manned controls at each crossing point (marshals/ banksmen), with a default priority that construction traffic will give-way to other users;	None	Named person as Travel Plan Co-ordinator (to be confirmed in detailed CEMP) to oversee management, monitoring and implementation of the individual measures within the detailed CTMP. Other responsibilities are to be confirmed in the detailed CEMP.

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		e. Restricting HGV movements to certain routes (see HGV routing plan in **Figure 13-4** of the ES **[EN010154/APP/6.2]**); f. Reducing HGV deliveries during certain times of the day (e.g. between 07:00 and 09:00, as well as between 17:00 and 19:00), to avoid increasing traffic levels on the surrounding highway network during the traditional weekday peak hours; g. Implementing a Delivery Management System to control the bookings of HGV deliveries from the start of the construction period. This will be used to regulate the arrival times of HGVs via timed delivery slots, as well as to monitor compliance of HGV routing; h. Implementing a monitoring system to record the route of all HGVs travelling to and from the Proposed Development, to record any non-compliance with the agreed routing plan/ delivery hours and to communicate any issues to the relevant suppliers to ensure the correct routes are followed; i. Developing a communications strategy including regular meetings with contractors to review and address any issues associated with travel to/ from the Proposed Development, as well as to relay information including any restrictions and requirements which should be followed; j. Implementing Temporary Traffic Management (TTM) where required during the period when the Grid Connection Cables are installed to connect the Proposed Navenby Substation with the Proposed Development. Further details with respect to any TTM arrangements and timeframes for installing the cables are set out within the **Framework CTMP [EN010154/APP/7.18]**; k. Encouraging local construction staff to car share to reduce single occupancy car trips, by promoting the benefits of car sharing such as reduced fuel costs and by providing dedicated parking spaces within the compounds for those car sharing. A Car Share scheme will be		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		implemented to match potential sharers and to help staff identify any colleagues who could potentially be collected along their route to/ from site; l. Implementing a shuttle service to transfer staff to/ from nearby catchment areas to reduce vehicle trips on the surrounding highway network. At this stage it is expected that the majority of shuttle services would travel to/ from Lincoln (northeast), with the remainder travelling to/ from Newark on Trent (southwest), Grantham and Sleaford (south) and Retford and Worksop (northwest) to collect/ drop off construction staff from 'hubs' at each of these six locations. Up to eight shuttle buses will be provided, each with a capacity of 50 staff, to transfer the expected peak demand (330 construction workers) to the DCO Site compounds. m. Implementing shuttle bus services to transfer staff internally within the Principal Site as required, e.g. between/across the different land parcels (where possible) to minimise external trips on the surrounding highway network, where utilising trips on the surround highway network, consolidating the trips to minimise the number of trips undertaken by construction workers; n. Providing sufficient on-site car parking within the construction compounds across the DCO Site to accommodate the expected peak parking demand of construction staff within the Principal Site. Construction workers will also be able to access other areas of the Principal Site using the shuttle bus service if required; o. Positioning of suitably qualified banksmen at the proposed accesses for the Principal Site and Cable Corridor, to allow all vehicle arrivals and departures to be safely controlled during the construction period; p. Vegetation clearance at the proposed access points where required to achieve appropriate levels of visibility at these locations;		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		q. Providing sufficient cycle parking spaces within the Principal Site to encourage construction staff to travel by bicycle where viable; r. A specialised haulage service will be employed to allow abnormal loads to transport components with the necessary escort, permits and traffic management, with the contractor consulting with the relevant highways authorities to ensure the correct permits are obtained. The police will also be given advanced notification under the Road Vehicle Authorisation of Special Types Order 2003; s. A Stage 1 Road Safety Audit (RSA) will be carried out; and t. Where the DCO Site adjoins the A46, any proposed fencing will be located behind the existing hedgerows which adjoin the A46.		

3.10 Air Quality

Table 9: Air Quality

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
AQ-C1	Increased nitrogen dioxide (NO_2) and particulate matter (PM_{10}) from on-site and off-site construction vehicle/plant emissions. Increased particulates and deposited dust from Site activities, materials transportation, storage and handling, including use of haul roads.	**Communications** a. Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. b. Display the name and contact details of person(s) accountable for air quality and dust issues on the DCO Site boundary. This may be the environment manager/engineer or the Site Manager. c. Display the head or regional office contact information. d. Develop and implement a Dust Management Plan (DMP) as part of the detailed CEMP, which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures for a Institute of Air Quality Management (IAQM) "High Risk Site" from the IAQM *Guidance on the assessment of dust from demolition and construction* (Ref 24). The desirable measures should be included as appropriate for the DCO Site. The DMP may include monitoring of dust deposition, dust flux, real-time PM_{10} continuous monitoring and/or visual inspections. **Site Management** a. 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. b. Make the complaints log available to the local authority when asked. c. Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book.	Measures in the detailed CEMP will include the implementation of: 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 the DCO Site boundary, with cleaning to be provided if necessary. Regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked. Increase the frequency of site inspections by the person	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		d. Hold regular liaison meetings with other high risk construction sites within 500m of the DCO Site Boundary, 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. **Monitoring** a. Undertake daily on-site and off-site visual 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 visual dust soiling checks of surfaces (for example, street furniture) within 100m of the DCO Site Boundary. b. Carry 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. c. Increase 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 **Preparing and Maintaining the DCO Site** a. Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is practicable. b. Fully enclose specific operations where there is a high potential for dust production and the DCO Site is active for an extensive period where operations are within 100m of receptors. c. Fully enclose site or specific operations where there is a high potential for dust production and the DCO Site is actives for an extensive period. d. Avoid site runoff of water or mud. e. Keep site fencing, barriers and scaffolding clean using wet methods.	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 Agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with the Local Authority.	

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		f. Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. g. Cover, seed or fence stockpiles to prevent wind whipping. h. Ensure all vehicles switch off engines when stationary - no idling vehicles i. Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable. j. Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph 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). k. Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. l. Implement a Travel Plan within the CTMP that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). m. 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. **Operations** a. Ensure an adequate water supply on the DCO Site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate. b. Ensure vehicles are inspected and cleaned as required, prior to accessing the public highway. c. Use enclosed chutes and conveyors and covered skips.		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		d. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. e. 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. f. Avoid bonfires and burning of waste materials. **Waste Management** a. Ensure effective water suppression is used during demolition operations. 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. **Earthworks** a. Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. b. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. c. Only remove the cover in small areas during work and not all at once. d. Avoid scabbling (roughening of concrete surfaces) if possible. **Construction** a. 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.		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		b. 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. c. For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. **Trackout** a. Avoid dry sweeping of large areas. b. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport c. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. d. Record all inspections of haul routes and any subsequent action in a site log book. e. Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. f. Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the DCO Site where reasonably practicable). g. Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the DCO Site exit, wherever site size and layout permits. h. Access gates to be located at least 10m from receptors where possible.		

3.11 Ground Conditions

Table 10: Ground Conditions

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
GC-C1	Potential for risks to human health associated with waste generation, land contamination, airborne contamination, and groundwater contamination. The discovery of ground contamination during groundworks. Levelling of the DCO Site including the possible introduction of new fill materials.	Ground investigation works will be undertaken prior to commencing construction. The scope of the ground investigation will be discussed and approved with the LPA and the Environment Agency prior to commencement. This will be in accordance with BS10175:2026 Investigation of Potentially Contaminated Sites: Code of Practice, BS 5930:2015+A1:2020 Code of Practice for Ground Investigations, the Environment Agency's Land contamination risk management (LCRM) guidance, and any other relevant industry guidance for site investigation works. Results would be reviewed by the appointed Principal Contractor, including any additional investigation or mitigation measures beyond the impact avoidance measures stated here. Best practice avoidance and mitigation measures proposed include: a. All workers would be required to wear Personal Protective Equipment (PPE) such as dust masks as applicable; b. 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; c. All plant and machinery would be kept away from surface water bodies wherever possible, checked regularly and, where necessary, the use of drip trays would be employed. Refuelling and delivery areas would be located away from surface water drains; d. An emergency spillage action plan (or similar title) will be produced, which staff would have read and understood, and provisions made to contain any leak/spill; e. Should any potentially contaminated ground, including isolated 'hotspots' of contamination and/or potential deposits of asbestos containing materials	To be included in the detailed CEMP.	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		(ACM), be encountered, works will be stopped in the affected area and the contractor would be required to investigate the areas and assess the need for containment or disposal of the material. Liaison with the Local Planning Authority and the Environment Agency would be undertaken if necessary. The contractor would also be required to assess whether any additional health and safety measures are required; f. 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; g. In the event that contamination is identified (including groundwater), works will be stopped in the affected area and appropriate remediation measures would be agreed with the appropriate authorities and undertaken to protect construction workers, future site users, water resources, structures, and services; h. 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; i. The risk to surface water and groundwater from run-off from any contaminated stockpiles during construction works would 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 would be designed in line with current good practice, follow appropriate guidelines and all relevant licences/permits; j. The contractor would ensure that all material is suitable for its proposed use and would not result in an increase in contamination-related risks on identified receptors, including any landscaped areas and underlying groundwater; k. Any waters removed from excavations by dewatering would be discharged appropriately, subject to the relevant permits being obtained from the Environment Agency;		

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		l. 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 m. Piling design and construction works will be completed following the preparation of a piling risk assessment. Prior to work commencing, a health and safety risk assessment will be undertaken by the appointed Principal Contractor and developed in accordance with current health and safety regulations. This assessment should cover potential risks to construction staff, permanent site staff and the local population. Based on the findings of this risk assessment, appropriate mitigation measures should be implemented during the construction period. Dust generation should be kept to a minimum in accordance with general industry good practice, as outlined in, for example, 'Environmental Good Practice on Site Guide', CIRIA Publication C811 5th Edition (Ref 26). Where the placement of the cables and piles takes place in land affected by contamination, the management of the waste material will be carefully managed. A detailed Unexploded Ordnance (UXO) Assessment will be undertaken prior to the commencement of any intrusive works to assess and potentially zone the UXO hazard level at the DCO Site. During construction, work will be undertaken in accordance with Construction Design and Management (CDM) 2015 Regulations (Ref 25). Mitigation to prevent surface runoff, discharge into watercourses and dust generation will be implemented, as set out in **Table 4** and **Table 9**.		

3.12 Materials and Waste

Table 11: Materials and Waste

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
MW-C1	Potential to impact on sensitive receptors (humans, wildlife and controlled waters) if waste not stored and managed appropriately.	The Proposed Development will aim to prioritise waste prevention, followed by preparing for reuse, recycling and recovery and lastly disposal to landfill as per the waste hierarchy. This would be achieved by a combination of measures, including: a. A Site Waste Management Plan (SWMP) will be produced by the Principal Contractor, which will set out: i. The waste streams that will be generated; ii. How the waste hierarchy will be applied to these wastes; iii. Good practice measures for managing waste; iv. Roles and responsibilities for waste management; and v. Provide information on waste classification. b. All management of waste will be in accordance with the relevant regulations and waste will be transported by licensed waste carriers to waste management sites which hold the necessary regulatory authorisation and/or permits for those wastes consigned to them. c. If required, a Materials Management Plan (MMP) would be developed under the CL:AIRE Definition of Waste: Development Industry Code of Practice (Ref 22) by the appointed	The types, quantities and final destination of waste generated during the construction phase would be identified, measured and recorded through the SWMP to be produced by the Principal Contractor in accordance with a Requirement of the DCO. A register of all waste loads leaving the DCO Site would be maintained to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities and	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		Principal Contractor to support the reuse of excavated materials, minimise off-site disposal; and to demonstrate the necessary lines of evidence to support the proper reuse/off-site disposal of materials and ensure compliance with regulatory guidance. d. The Principal Contractor will determine whether excavated material use will be undertaken via a waste framework directive exclusion, exemption, CL:AIRE DoW CoP Materials Management Plan or Environmental Permit. To reduce the potential impacts from materials and waste, and to achieve high levels of sustainability in the Proposed Development as a whole, the Principal Contractor will apply the principles of the waste hierarchy and adopt best practice measures (BPM) which go beyond statutory compliance. This may include BPMs set out in construction industry guidance for example, guidance from the Considerate Constructors Scheme (CCS), Waste & Resources Action Programme (WRAP) and Construction Industry Research and Information Association (CIRIA). The following approaches will be implemented, where practicable, to minimise the quantity of waste arising and requiring disposal: a. Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;	management methods.	

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		b. Implementation of a 'just-in-time' material delivery system where practicable to avoid materials being stockpiled, which can increase the risk of damage and subsequent disposal as waste; c. Attention to material quantity requirements to avoid overordering and the generation of waste materials due to surplus; d. Reuse of materials on-site wherever feasible, e.g. reuse of excavated soil for landscaping; e. Off-site prefabrication, where practical, including the use of prefabricated structural elements; f. Segregation of waste at source, where practical, to facilitate a high proportion and high-quality recycling; and g. Off-site reuse, recycling and recovery of materials and waste where reuse on-site is not practical, e.g. through use of an off-site waste segregation or treatment facility or for direct reuse or reprocessing off-site.		

3.13 Glint and Glare

Table 12: Glint and Glare

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
GG-C1	Potential to impact on residential receptors	Native hedgerows will be planted/infilled and maintained to deliver a minimum height at least the same as the upper edge of the panels, which is currently proposed to be 3.5m, along panel boundaries, field boundaries and bridleway boundaries where the glint and glare assessment identifies mitigation as required. The proposed planting in the Landscape Mitigation Plan (within the **Framework LEMP [EN010154/APP/7.15]**) achieves the required mitigation, and the design will be carried out in accordance with this. The glint and glare assessment is presented in **Appendix 14-D: Glint and Glare Assessment** of the ES **[EN010154/APP/6.3]**.	Monitoring of hedgerows are described in the **Framework LEMP [EN010154/APP/7.15]**.	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s) and LEMP.

3.14 Major Accidents and Disasters

Table 13: Major Accidents and Disasters

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
MAD-C1		All works will be undertaken in accordance with relevant Health and Safety legislation and guidance and plans will be put in place. Details of fire, police, emergency services and hospitals will be publicised and included in the DCO Site induction. A Biosecurity Management Plan will be prepared prior to construction, which will include measures such as appropriate cleaning and or/ disinfection of machinery and equipment in areas considered to be at high risk. Measures to mitigate the risks of major accidents and disasters are covered in the following tables: Table 1: Climate; Table 3: Ecology and Nature Conservation; Table 4: Water Environment; Table 8: Traffic and Transport; Table 11: Materials and Waste, Table 14: Telecommunications, Television Reception and Utilities. A **Framework Battery Safety Management Plan (FBSMP) [EN010154/APP/7.17]** is submitted with the DCO application and a detailed Battery Safety Management Plan will be prepared prior to construction (secured through DCO Requirement). The management strategy for battery fire safety is provided in the **FBSMP [EN010154/APP/7.17]**. The BESS containers will include an internal fire suppression system. As stated in the **FBSMP [EN010154/APP/7.17]**, internal BESS water based fixed suppression systems will have a separate water containment system because water runoff is likely to contain higher levels of pollution. The expected Hydrogen Fluoride emissions will be checked against the assumptions in **Appendix 14-G Unplanned Emissions Assessment [EN010154/APP/6.3]** at detailed design stage once the make, model and layout of the BESS is known and confirmed, and, if necessary, consequence modelling will be undertaken to demonstrate that the impacts associated with an unplanned fire would not exceed the effects outlined in this report or cause any significance adverse health effects to the local community. To identify any existing infrastructure constraints, both consultation and a desk-based study will be undertaken prior to construction so that appropriate mitigation such as buffers can be incorporated into the design. Cable Avoidance Tool (CAT) scans will also be used by Contractors to check for buried utilities prior to earth breaking site activities. The Applicant will endeavour to engage with utilities providers as appropriate. Undertake a risk assessment of potential damage to underground services due to construction induced vibration which could arise as a result of driven piling or Horizontal Directional Drilling (HDD). Prior to the detailed design of the Proposed Development, further discussions will be held with Anglian Water to confirm aspects of the Proposed Development that have the potential to interact with utilities, such as trenchless crossings, ducting and open cut locations. The relevant risk assessments for safety will be required and produced by the Principal Contractor prior to construction, which will be implemented to minimise the risk of accidents and disasters on-site.		

The Civil Aviation Authority (CAA), Ministry of Defence (MoD) and aerodromes whose perimeters are within 10 Nautical Miles (NM) (18.5 km) of the crane will be given at least eight weeks (40 working days) notice before the erection of any cranes onsite for long term planned works, and a minimum 5 working days' notice for ad-hoc or unforeseen works requiring cranes.

3.15 Telecommunications, Television Reception and Utilities

Table 14: Telecommunications, Television Reception and Utilities

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
TEL-C1	Potential to affect existing utility infrastructure above and below ground as a result of excavation and engineering operations.	Precautionary measures will be included as part of the embedded mitigation for the Proposed Development, including: a. Locating the Proposed Development outside of utilities protected zones; b. The use of ground penetrating radar before excavation to identify any unknown utilities; and c. Consultation and agreement with relevant utility operators regarding construction/demobilising methods prior to works commencing Additionally, measures in relation to safe working beneath overhead lines will be in place at all stages of the Proposed Development, for example ensuring adequate clearances are in place when plant and equipment is being moved beneath the overhead lines. The **draft DCO [EN010154/APP/3.1]** includes protective provisions for the protection of electronic communication networks and utilities.	To be included in the detailed CEMP(s).	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

3.16 Electric and Electromagnetic Fields

Table 15: Electric and Electromagnetic Fields

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
EMF-C1	Potential to EMF impact.	The electricity export cable will be located at least 10m from permanent receptors due to the need for construction vehicles to manoeuvre both sides of the trench within the working width. Where the cables associated with the Proposed Development are proposed to cross watercourses, the cables will be installed a minimum of 2m below minor/ordinary watercourses (except where minor/ordinary watercourses have minimal or no water flow and water management is easily managed) and 5m beneath Main Rivers, which will provide sufficient distance to attenuate EMF and avoid impacts on river species such as fish. The assets associated with the Proposed Development would be fully compliant with the relevant Government policy. Specifically, all the EMFs produced would be below the relevant exposure limits.	To be included in the detailed CEMP(s).	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

3.17 Arboriculture

Table 16: Arboriculture

ID	Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
ARB-C1	Potential to impact trees.	The **Arboricultural Impact Assessment** (**Appendix 10-H** of the ES **[EN01054/APP/6.3]**) sets out a number of measures to be implemented, including: a. A pre-construction a check of ash trees within the DCO Site Boundary will be undertaken and trees removed where appropriate (e.g. where they pose an unacceptable risk to people or property). Trees will be monitored annually in summer during full leaf flush during the construction period where trees may pose a risk to infrastructure constructed as part of the Proposed Development. Ash trees showing late-stage symptoms of ash dieback may become embrittled, either due to degradation/dysfunction of the wood substrate from ash dieback or from secondary pathogens. The subsequent removal of trees in the late stages of ash dieback may become hazardous to contractors undertaking tree removal. Removal of ash trees prior to this stage is therefore recommended. b. Where practicable the detailed design will be further developed to avoid or minimise impacts to trees. The final level of arboricultural impacts will be assessed and recorded as part of an Arboricultural Method Statement which will be produced as part of the detailed CEMP(s). c. At the detailed design stage the final alignment of the export connection cable will be positioned to minimise tree related impacts where feasible and the final extent of tree loss will be detailed within the Arboricultural Method Statement which will be produced as part of the detailed CEMP(s).	To be included in the detailed CEMP(s).	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

d. A pre-construction check will be undertaken of trees within the DCO Site and remedial works actioned where appropriate (e.g. where they pose an unacceptable risk to people or property). Trees will be monitored during the construction period, and during operation where they pose a risk to infrastructure constructed as part of the Proposed Development. All staff operating on the DCO Site are to be made aware of the need to look out for obvious signs of tree defects and to report them to the Site Manager who will seek further advice as necessary.

e. No veteran or ancient trees or ancient woodland are to be removed.

f. No trees subject to TPO or within a CA are to be removed.

g. The impacts of tree removals will be compensated by the proposed tree planting and associated landscaping works as detailed in the **Framework LEMP [EN010154/APP/7.15]**.

h. Where possible, tree groups and especially windward edges should be retained intact. Where partial removal of tree groups and/or woodlands is to be undertaken, trees at the new edge should be assessed for retention suitability by a qualified arboriculturist to determine the final extent of tree loss (noting that this cannot generally be confirmed until initial site clearance works have been completed).

i. One tree (T167 – see **Appendix 10-H**: **Arboricultural Impact Assessment** of the ES **[EN01054/APP/6.3]**) has been identified to require a significant crown reduction (monolith) to circa 4-5m. This is a dead standing tree that is located within falling distance of a proposed access road. Therefore, to mitigate this safety risk the tree should be pruned prior to the commencement of site works. This tree is located beyond the DCO Site Boundary and therefore prior consent from the tree owner should be obtained in writing before any tree works

outside those permitted under established rights in common law are carried out. No additional pruning has been identified at this stage. The requirement for any pruning will be reviewed and confirmed at the detailed design stage as part of an Arboricultural Method Statement. The final extent of pruning will be the minimum feasible and will be agreed on site with the Proposed Development arboriculturist.

j. All tree work is to follow the principles of BS3998: 2010 Treework – Recommendations and must be carried out by suitably qualified contractors. The Arboricultural Association provides a list of contractors who meet these requirements. Tree works and/or stump removal or stump treatment will be carried out in a way that avoids damage to any nearby trees that are being retained. The methodology for tree works will be described in the detailed CEMP. Should the requirement for additional tree works be identified, this will be discussed with the Proposed Development arboriculturist and no works will be undertaken without the consent of the NKDC.

k. Significant pruning works are best undertaken when trees are dormant or outside periods of high functional activity to reduce the overall impact on energy available to the tree for growth and processes. In general, the optimum period for works is between November to February and July to August (subject to the presence of protected species) when the tree is less active and better placed to respond to wounding and a reduction in leaf area.

Soils

The advice of a suitably qualified engineer must be obtained to inform any potential issue of heave.

Access Roads

The Proposed Development will require the construction of a number of new access tracks across the DCO Site. New access tracks have predominantly been positioned outside of Root Protection Areas (RPAs), however where access tracks cannot avoid the RPAs of retained trees specialist construction measures will be implemented.

Within RPAs, new hard surfacing will be constructed utilising a proprietary three-dimensional cellular raft system (such as Cellweb) or equivalent, filled with washed angular stone and installed on the existing ground level and specified to the highest expected load. The raft then acts as a subbase for any new hard surfacing, mitigating the requirement for excavation and reducing compaction. This methodology is likely to increase the final level of the hard surfacing and this must be taken into consideration. Soil levels should not be increased within RPAs. Where level increases are unavoidable it may be possible to increase levels (where this would not result a change to drainage or aeration) within discrete sections of an RPA through the use of compaction resistant materials, such as sharp sand, three-dimensional cellular rafts or equivalent. Extensive level changes are less likely to be acceptable and any change in levels should avoid the area immediately surrounding the base of the tree and its buttressing.

Alternatively, hand excavated trial pits (agreed in advance with the NKDC Tree Officer) may be utilised to determine the presence or absence of significant roots (>25mm in diameter) which could justify standard construction techniques in cases where only the very outer extent of the RPA is impacted (such as for T7, T449, T519, T668, W990 (TPO), G997 (TPO), W1011 and T1425), where the ground is currently subject to disturbance or where existing levels and tie in requirements may make raised surfacing less viable (e.g. bellmouths for T668 and T1425) - see **Appendix 10-H**: **Arboricultural Impact Assessment** of the ES **[EN01054/APP/6.3]**). Where roots present

are under 25mm in diameter, these typically may be severed back to the face of an excavation with a sharp hand-tool (preferably 100 mm beyond the face of the excavation to a lateral root, but no further). Construction works may then utilise standard installation methods. Where significant roots (>25mm in diameter) or bundles of smaller roots are present, roots must be preserved (e.g., by back filling the trial hole to match the original soil profile and structure and utilising a three-dimensional cellular raft system on the existing ground level). All works within RPAs must be supervised by the project arboriculturist. The final specification for mitigation measures will be detailed in the Arboricultural Method Statement. The detailed design will seek to further reduce the impacts from proposed access roads on retained trees.

Existing Access Roads

The Proposed Development proposes to utilise a number of existing access roads where present. Existing access roads vary in condition from formal road surfaces to gravel tracks and are predominantly used for agricultural purposes. Where existing access roads are to be utilised for the Proposed Development but no change from the existing use is required (e.g. no change in width, height or ground loading from vehicle use) these situations are not considered to require any mitigation measures and are unlikely to negatively impact the physiological or structural condition of the trees.

Where the use of existing roads is expected to change there will be a requirement to implement mitigation measures to ensure that trees are not negatively impacted. Mitigation measures are likely to include the use of a three-dimensional cellular raft system (such as Cellweb or equivalent), specified to the highest expected load in accordance with Appendix D Outline Tree Protection Measures of **Appendix 10-**

H: **Arboricultural Impact Assessment** of the ES **[EN01054/APP/6.3]**.

The final specification for mitigation measures will be detailed in the Arboricultural Method Statement.

Existing access roads are proposed to be used where they are within the RPAs of veteran trees.

Security Fencing

The Proposed Development will require extensive security fencing across the DCO Site and is currently shown on the TPP to be within the RPAs of numerous retained trees. The detailed design will seek to reduce these impacts and the final location of security fencing will be amended to avoid the RPAs of retained trees or positioned as far from tree stems as possible.

Where security fencing cannot avoid the RPAs of retained trees fence posts will be driven, to reduce the total footprint and requirement for any potential excavation within RPAs.

Where posts may not be driven within the RPAs of retained trees, post hole excavations are to be undertaken by hand-dig techniques only (such as using compressed air and a soil vacuum or hand tools). Significant roots (greater than 25mm in diameter or clumps of roots <25mm in diameter) are to be retained and protected; fence post positions are to be sensitively positioned/adjusted as to avoid significant roots of retained trees. Roots under 25mm in diameter may be severed with a sharp hand tool (such as a sharp knife or secateurs) back to the face of the excavation (or preferably up to 100mm beyond). Spoil from excavations must be stored on appropriate ground protection where within RPAs. Excavations are to be lined with

impermeable sheeting to prevent the leaching of any toxic chemicals into the surrounding soil.

All works within the RPAs of retained trees must be supervised by the Proposed Development arboriculturist.

Veteran and Ancient Trees

A total of five RPA incursions will be required for veteran trees to facilitate the use of existing access roads for construction traffic. Existing access roads vary in condition from formal road surfaces to gravel tracks and are predominantly used for agricultural purposes.

Where existing access roads are to be utilised for the Proposed Development but no change from the existing use is required (e.g. no change in width, height or ground loading from vehicle use) these situations are not considered to require any mitigation measures. This is likely to apply to trees T708, T709, T1004 and T1120 see **Appendix 10-H**: **Arboricultural Impact Assessment** of the ES **[EN01054/APP/6.3]**).

The existing access road adjacent to T572 (see **Appendix 10-H**: **Arboricultural Impact Assessment** of the ES **[EN01054/APP/6.3]**) is considered to be an informal grass track and due to the anticipated high frequency of use from construction traffic mitigation measures will be required. Mitigation measures are likely to include the use of a three-dimensional cellular raft system to prevent negative impacts to the structure of the soil within the RPA. The Arboricultural Method Statement will set out any requirements with regards to the monitoring of T572 as relevant.

Where existing access roads are utilised or where appropriate mitigation measures are utilised soil structure will be maintained,

resulting in no likely adverse impact on the physiological or structural condition of the trees.

The final specification for mitigation measures will be detailed in the Arboricultural Method Statement.

New Services within RPAs

Where existing services become redundant within the RPA of a retained tree, the default position must be that they be decommissioned and left in situ. Where this is not feasible the following principles are to be observed;

a. Existing services are to be removed by winching out from an access/inspection chamber located outside of an RPA. It may be acceptable to fill redundant pipe work with an inert material or undertake pipe bursting where necessary within the RPA of retained trees; and
b. Excavation to install services has the potential to result in unacceptable root severance which could result in instability, dysfunction or the death of trees. Repeated incursions are particularly damaging and must be avoided by bundling services wherever possible. The default position will therefore be that all services be routed outside of the RPA of retained trees.

The following general principles will apply and where services must be routed within the RPA of a retained tree this process will be subject to a detailed method statement with approval from NKDC. The principles of NJUG Volume 4 guidance must be adhered to.

All services must be bundled as far as possible and installed within RPAs using hand/compressed air excavation (e.g., for shallow service runs where all roots >25mm diameter can be retained and worked around) or trenchless techniques such as Horizontal Directional

Drilling (HDD) or impact moling (thrust boring) with all access pits and inspection chambers being located outside of the RPA. The route must run as far from the main stem of a retained tree as possible and must be at a minimum depth so that the upper 2m of the soil profile is undisturbed. The depth of the run may need to be adjusted to account for soil type and species variation and this must be determined subject to the advice of the Proposed Development arboriculturist.

Services must be constructed so as to be resistant to ingress by tree roots (both existing trees, and newly planted trees) which could include the use of root barriers where appropriate.

These works must take place as specified in an Arboricultural Method Statement.

Tree Planting

Existing areas of unsurfaced ground must be protected during the construction phase if they are to be re-used for new plantings. Protection can be achieved using fit for purpose ground protection measures as set out in BS5837:2012 Section 6.2.3 or by creating a fenced exclusion zone. Where protection is not feasible, soil amelioration or replacement works will be required to ensure suitable growing conditions for new trees to fully establish.

Where new trees are to be planted, the minimum planting distances detailed in Table A.1 of BS5837:2012 (British Standards Institute, 2012) must be adhered to along with Proposed Development specific offsets to prevent direct damage to services and structures from future tree growth.

New tree planting should be implemented in accordance with the guidance set out in BS8545:2014 (British Standards Institute, 2014)

Trees: from nursery to establishment in the landscape – Recommendations.

The UK Forest Standard (2023) recommends that no more than 65% of a forest management unit area is allocated to a single species, with a minimum of 5% native broadleaved trees or shrubs, 10% of other tree species and 10% open ground, or ground managed for biodiversity as the primary objective is utilised for new tree planting.

Tree Protection

Retained trees are vulnerable to damage from construction activities which can include physical damage to stems and branches following impacts with plant, root severance following trenching, root death or dysfunction following damage to soil structure (caused by the movement of people or machinery on unsurfaced ground) or via the spillage of materials toxic to tree health. The default position is that the RPA and canopy spread of trees to be retained will form an effective Construction Exclusion Zone, secured with robust fencing where no access will be permitted. Where access is necessary within this area special measures such as the use of ground protection and arboricultural supervision are generally required.

Outline tree protection measures are considered in **Appendix D** of **Appendix 10-H**: **Arboricultural Impact Assessment** of the ES **[EN01054/APP/6.3]**. The Arboricultural Method Statement will set out the phasing of site operations, the finalised tree protection measures for the DCO Site and provide detail on how sensitive elements of work are to be achieved in proximity to retained trees. The final specification for tree protection measures will be detailed in the Arboricultural Method Statement.

Site Organisation, Storage and Use of Materials, Plant and Machinery

All construction site facilities including site huts, staff and contractor parking and areas for storage will be located outside of the RPA or crown spread of retained trees, including those not specifically covered in this report. Space is likely to be constrained within the DCO Site Boundary at some locations and so the construction compounds set up will need to be carefully considered. The Construction Exclusion Zones identified on the Tree Protection Plans must be fully respected and their location and significance is to be highlighted to all site staff and contractors during the formal site briefing. This will be addressed in the Arboricultural Method Statement.

The use, mixing and washing of materials can lead to run off or inadvertent spillage into tree root zones. Many substances often used on construction sites can be toxic to tree roots (such as concrete, fuels, salts, builders' sand and herbicides) and can result in the death of tree roots and beneficial soil organisms and can have a significant impact on the future health and appearance of the tree.

The storage of materials and arising's can result in an effective raised soil level. This buries tree roots at depths where air and water are less available and can lead to the decline or death of the tree.

For these reasons the storage of materials and any washing, mixing or refuelling will take place in agreed allocated areas at least 5m from the edge of the RPA of retained trees and at least 5m from the edge of an ancient woodland buffer zone.

Any slope effect must be taken into account and where there is a potential for run off, heavy duty polythene sheeting and sandbags

must be in place as bunding to prevent toxic materials reaching RPAs and/or ancient woodland and its buffer zone.

Particular care is required where high sided vehicles, long reach machinery and plant with jibs, booms and counterweights are to operate with in proximity to retained trees. A banksman will be used where the movement of plant or long reach machinery occurs within 5m of any part of a retained tree to ensure no damage is sustained.

4. Complementary Plans and Procedures

4.1.1 A suite of complementary environmental plans and procedures are included as part of the DCO application. These plans and procedures build on the principles and procedures set out in this Framework CEMP and described in the ES **[EN010154/APP/6.1]**. These set out proposed mitigation for the construction phase, and in some cases the operation and maintenance phase, and include the following:

a. **Framework LEMP [EN010154/APP/7.15]**;

b. **Framework CTMP [EN010154/APP/7.18]**;

c. **Framework Battery Safety Management Plan [EN010154/APP/7.17]**;

d. **Framework Public Right of Way Management Plan (PRoWMP) [EN010154/APP/7.14]**;

e. **Framework Soil Management Plan [EN010154/APP/7.10]**;

f. **Framework Skills, Supply Chain and Employment Plan (FSSCEP) [EN010154/APP/7.16]**; and

g. **Framework Surface Water Drainage Strategy (Appendix 9-D** of the ES **[EN010154/APP/6.3]**).

4.1.2 Alongside the detailed CEMP, a suite of complementary environmental plans and procedures for the construction phase will be developed, as discussed in the sections above:

a. Emergency Response Plan (secured by this Framework CEMP and will be produced as part of the detailed CEMP);

b. Dust Management Plan (secured by this Framework CEMP and will be produced as part of the detailed CEMP);

c. LEMP (secured by Requirement)

d. Water Management Plan (secured by this Framework CEMP and will be produced as part of the detailed CEMP);

e. Biosecurity Management Plan (secured by the Framework LEMP and will be produced as part of the detailed LEMP);

f. CTMP, including Travel Plan (secured by Requirement);

g. Arboricultural Method Statement (secured by this Framework CEMP and will be produced as part of the detailed CEMP);

h. SWMP (secured by this Framework CEMP and will be produced as part of the detailed CEMP); and

i. Materials Management Plan (if required) (secured by this Framework CEMP and will be produced as part of the detailed CEMP).

4.1.3 These plans and procedures will build on the principles and procedures set out in this Framework CEMP and described in the **ES [EN010154/APP/6.1]**. 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 will set out all roles, responsibilities and actions required in respect of implementation of the measures described in this Framework CEMP, including:

a. An organogram showing team roles, names and responsibilities;

b. Training requirements for relevant personnel on environmental topics;

c. 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;

d. Measures to advise employees of changing circumstances as work progresses;

e. Communication methods;

f. Document control;

g. Monitoring, inspections and audits of site operations[1]; and

h. 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 Proposed Development and its impacts will be undertaken throughout the construction phase. This will be undertaken to demonstrate the effectiveness of the measures set out in the detailed CEMP(s) and related constriction controls and allow for corrective action to be taken where necessary.

6.1.2 As part of the monitoring process the Principal 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

[1] The Construction Project Manager and Environmental Manager have responsibility for ensuring compliance with this Framework CEMP and detailed CEMP(s).

from the detailed CEMP(s) at the earliest opportunity following identification of such deviations. 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 regular 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 (or similar), discussed with the Site Project Manager for programming requirements and issued weekly for actioning.

6.1.4 The Environment Manager and/or Site Project Manager will arrange regular formal inspections to ensure the requirements of the detailed CEMP(s) are being met. Details of monitoring, inspection, and audits to be undertaken will be provided in the detailed CEMP(s). A final review will be undertaken following completion of the works.

6.2 Records

6.2.1 The Environment Manager or Site 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:

a. Environmental Action Schedule;

b. Licences and approvals;

c. Results of inspections by Environment Manager/Site Project Manager;

d. Other environmental surveys and investigations;

e. Environmental equipment test records; and

f. Corrective actions taken in response to incidents, breaches of the detailed CEMP(s) or complaints received from a third party.

6.2.2 The detailed CEMP(s) will be a live document and be updated as and when required, such as when there are changes to the team or when additional information becomes available (for example through detailed civil design or additional data supply or surveys such as pre-construction ecological surveys).

6.2.3 A full review of the detailed CEMP(s) will be undertaken as required (at least quarterly) throughout the construction phase, with a brief report summarising the monitoring process, observed deviations from the detailed CEMP(s) and the corrective actions taken (as relevant) submitted to the relevant local authorities.

6.3 Management Review

6.3.1 The detailed CEMP(s) will be signed off on completion of the construction works. The detailed CEMP(s) may be referred to in the future detailed Operational Environmental Management Plan, which will be used to manage the environmental performance of the Proposed Development through operation.

7. References

Ref 1 The Planning Act 2008, Available at: https://www.legislation.gov.uk/ukpga/2008/29/pdfs/ukpga_20080029_en.pdf

Ref 2 HMSO (2009) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009. Available at: https://www.legislation.gov.uk/uksi/2009/2264/contents/made.

Ref 3 Control of Pollution Act 1974. Available at https://www.legislation.gov.uk/ukpga/1974/40

Ref 4 HMSO (2011). The Waste (England and Wales) Regulations 2011. Available at: https://www.legislation.gov.uk/uksi/2011/988/contents/made [Accessed 13/03/2024]

Ref 5 HMSO (2005). The Hazardous Waste (England and Wales) Regulations 2005. Available at https://www.legislation.gov.uk/uksi/2005/894/contents/made [Accessed 13/03/2024]

Ref 6 British Standards Institute (BSI) (2012). BS 5837:2012 Trees in relation to design, demolition and construction – recommendations

Ref 7 Wildlife & Countryside Act 1981 (as amended). Available at: https://www.legislation.gov.uk/ukpga/1981/6

Ref 8 NetRegs. NetRegs – Environmental guidance for your business in Northern Ireland and Scotland.

Ref 9 Environment Agency (2011). Pollution Prevention Guidance. Safe storage – the safe operation of refuelling: PPG7. Available at: https://www.netregs.org.uk/media/1673/ppg-7.pdf

Ref 10 Environment Agency. Pollution Prevention Guidance. Managing fire water and major spillages: PPG18. Available at: https://www.netregs.org.uk/media/1674/ppg-18.pdf

Ref 11 British Standards Institute (2009) BS6031:2009 Code of Practice for Earth Works

Ref 12 CIRIA (2015) The SuDS Manual (C753F).

Ref 13 CIRIA C741. (2023). Environmental good practice on site guide (fifth edition).

Ref 14 CIRIA C648. (2006). Control of water pollution from linear construction projects, technical guidance.

Ref 15 CIRIA C609. (2004). Sustainable Drainage Systems, hydraulic, structural and water quality advice.

Ref 16 CIRIA C532. (2001). Control of water pollution from construction sites – Guidance for consultants and contractors.

Ref 17 CIRIA C736F. (2014). Containment systems for prevention of pollution.

Ref 18 Water Resources Act 1991. Available at: https://www.legislation.gov.uk/ukpga/1991/57

Ref 19 The Environmental Permitting (England and Wales) Regulations 2016 Available at: https://www.legislation.gov.uk/uksi/2016/1154/contents

Ref 20 Control of Pollution (Oil Storage) (England) Regulations 2001. https://www.legislation.gov.uk/uksi/2001/2954/contents

Ref 21 The Control of Substances Hazardous to Health (Amendment) Regulations 2004. https://www.legislation.gov.uk/uksi/2004/3386/contents

Ref 22 Contaminated Land: Applications in Real Environments (CL:AIRE) (2011). Definition of Waste: Development Industry Code of Practice.

Ref 23 HMSO (2009). The Eels (England and Wales) Regulations 2009. [online] Available at: https://www.legislation.gov.uk/uksi/2009/3344.

Ref 24 Institute of Air Quality Management (2023) Guidance on the assessment of dust from demolition and construction.

Ref 25 HMSO (2015). The Construction (Design and Management) Regulations.

Ref 26 CIRIA (2023). PUB C811 Environmental good practice on site guide. 5th edition