Outline Construction Environmental Plan

Colehill 110kV Substation and Grid Route

26/11/25

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INTRODUCTION

Background

7.1 Neo Environmental Ltd has been appointed by Renewable Energy Systems on behalf of Ballyteige Solar Limited (the "Applicant") to undertake an Outline Construction Environmental Plan (OCEMP) for a Strategic Infrastructure Development ("SID") Application for a new 110kV Substation ("Colehill 110kV Substation") and grid connection to the existing Thornsberry 110kV substation.

Development Description

7.2 "The Proposed Development" comprises of a 110kV substation, access road, interconnection cables and grid route. The Proposed Development is to facilitate the connection of Ballyteige (PA Ref: 2198) and Derrygrogan (PA Ref: 22378 and ABP 318041-23) solar farms to the national grid. The method of connection to the national grid for the new substation will be a 110kV tail-fed connection into the existing Thornsberry Substation.

7.3 The Proposed Development will consist of:

- 1No. substation compound comprising of No.3 work areas with CCTV and associated drainage which will be enclosed by 2.6m high palisade fencing and gates:
    - 1No. Eirgrid control building, 110kV bay arrangements, 4No. lightning poles, compound road,
    - Crane hardstand, 2No. transformers and 2. No auxiliary transformers, 110kV electrical equipment, back up generator,
    - 2No. Independent Power Purchaser (IPP) control buildings and compound including toilet, 2No. grid code compliance equipment, 2No. harmonic filters, car parking and telecoms pole),
- Property boundary fencing;
- Access tracks (upgraded existing and new);
- Temporary construction compound and temporary access track,
- Temporary and permanent road re-alignment of a section of O of Wood local road;
- c.7.5km of underground 110kV cabling with joint bays, over and under watercourse crossing and a potential horizontal directional drill on access track and local roads;

- c.610m of medium voltage underground interconnection cable with associated horizontal directional drill.

7.4 Please see **Figure 103** in **Volume 2** for a layout of the Proposed Development.

Site Description

7.5 The Proposed Development is situated within the townlands of Ballyteige Little, Wood of O, Corndarragh, Derrynagall or Ballydaly, Ardan and Puttaghan, Co. Offaly.

7.6 The Colehill 110kV Substation is proposed to be located in one relatively flat agriculture field. The proposed 7.5km grid route will run in a northeast direction from the proposed Colehill 110kV substation to the existing ESB Thornsberry 110kV substation via private land and local roads. Interconnection cables from the eastern sections of Derrygrogan Solar Farm will be installed via horizontal directional drilling on a section of an agricultural field underneath the dry canal into the proposed access and track of Colehill 110kV Substation.

7.7 The Proposed Development lies at an elevation of c. 71.7 to 77.8m AOD and covers a total area of c. 11.2 hectares. The approximate Irish Grid Reference points (ITM) of the proposed Colehill 110kV substation are X 639234 and Y 727175. Access to the proposed substation will be from the Wood of O road to the east of the Substation "Proposed Substation Site" which is the same entrance point for the consented Ballyteige Solar Farm (PA Ref: 2198).

7.8 The grid route and substation boundaries are approximately 250m and 5.8km northeast from Tullamore Town.

Scope of Report

7.9 This OCEMP has been produced in support of the planning application to the County Council and includes:

- Construction method statement which identifies works likely to impact upon water quality;
- Pollution prevention and mitigation measures;
- Drainage management plan; and
- Waste management.

7.10 The OCEMP has been prepared with reference to the environmental assessments which have been undertaken in support of the planning application, these include: Flood Risk and Drainage Impact Assessment (**Technical Appendix 4**) and the Ecological Impact Assessment (**Technical Appendix 2**). Following the approval of planning consent, this OCEMP will be revised by the contractor and amended where necessary.

7.11 The Applicant will appoint a main contractor who will be responsible for the construction of the Proposed Development. The contractor will ensure that all measures and mitigation identified within this OCEMP are taken into account and implemented during the construction. In addition, the OCEMP will be monitored regularly throughout the duration of the construction phase to ensure best practice is implemented.

7.12 A Site Manager will be appointed and will be in charge of activities on site, including personnel. They will ensure that all personnel on site follow and adhere to the procedures outlined within the OCEMP.

Statement of Authority

7.13 This OCEMP has been produced by Neo Environmental, with input from Kellie Kerr BSc (Hons) and Michael McGhee BSc TechIOA. Neo Environmental have produced detailed OCEMPs for a range of development types, including for over 1GW of solar farm developments across the UK and Ireland.

LEGISLATION

7.14 Current legislation has been taken into consideration during the production of this OCEMP. The legislation covers all relevant areas including; water pollution, wildlife species protection, waste and noise. In the case of the Proposed Development, the following legislation has been considered:

- The Local Government (Water Pollution) Act 1977[1]
- The Local Government (Water Pollution) (Amendment) Act 1990[2]
- EC (Water Policy) (Amendment) Regulations, 2003[3]
- The Wildlife Act 1976 (amended 2000)[4]
- EC (Birds and Natural Habitats) Regulations 2011 (amended 2015)[5]
- Protection of the Environment (POE) Act 2003[6]
- Environmental Noise Regulations 2006[7]
- Environmental Protection Agency Act 1992[8]
- Waste Management Acts (WMA) 1996 to 2005[9]
- Waste Management (Hazardous Waste) Regulations 1998[10]
- Carriage of Dangerous Good by Road Act 1998[11]

[1] Office of the Attorney General (1977). Local Government (Water Pollution) Act 1977. Available at www.irishstatutebook.ie

[2] Office of the Attorney General (1990). Local Government (Water Pollution) (Amendment) Act 1990. Available at www.irishstatutebook.ie

[3] Office of the Attorney General (2003) S.I. No. 722/2003 – European Communities (Water Policy) Regulations 2003, as amended 2014. Available at www.irishstatutebook.ie

[4] Office of the Attorney General (1976) Wildlife Act 1976 (amended 2000), available at www.irishstatutebook.ie

[5] Office of the Attorney General (2011) European Communities (Birds and Natural Habitats Regulations 2011 (amended 2015), available at www.irishstatutebook.ie

[6] Office of the Attorney General (2003) Protection of the Environment Act 2003. Available at www.irishstatutebook.ie

[7] Office of the Attorney General (2006) Environmental Noise Regulations 2003. Available at www.irishstatutebook.ie

[8] Office of the Attorney General (1992) Environmental Protection Agency Act 1992. Available at www.irishstatutebook.ie

[9] Office of the Attorney General (1996) Waste Management Act 1996, as amended. Available at www.irishstatutebook.ie

[10] Office of the Attorney General (1998) S.I. No. 163/1998- Waste Management (Hazardous Waste) Regulations 1998. Available at www.irishstatutebook.ie

- EC Environmental Objectives (Surface Waters) Regulations 2009[12]
- EC Environmental Objectives (Groundwater) Regulations 2010[13]
- Article 4 of Waste Framework Directive (Directive 2008/98/EC)[14]
- Water Framework Directive (2000/60/EC)[15]

Guidance

7.15 The Environmental Protection Agency (EPA) has produced Pollution Prevention Guidelines (PPGs). The most relevant guidelines to the Proposed Development include:

- IPC Guidance Note – Guidance Note on Storage and Transfer of Materials for Scheduled Activities (EPA 2004) (amended 2012, 2013)[16]. This guidance note covers tanks, bunds and pipelines which store or transmit potentially polluting substances.
- National Hazardous and Waste Management Plan 2014-2020 (EPA 2014)[17]. The plan details guidance on how to prevent, reduce and collect hazardous waste.

7.16 Key guidance from other bodies that are relevant to the Proposed Development construction phase include:

- Best Practice Guide BPGCS005 – Oil Storage Guidelines[18].
- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects[19].

[11] Office of the Attorney General (1998) Carriage of Dangerous Goods by Road Act 1998. Available at www.irishstatutebook.ie

[12] Office of the Attorney General (2009) European Communities Environmental Objectives (Surface Waters) Regulations 2009. Available at www.irishstatutebook.ie

[13] Office of the Attorney General (2010) European Communities Environmental Objectives (Groundwater) Regulations 2010. Available at www.irishstatutebook.ie

[14] European Parliament and the Council (2008) Directive 2008/98/EC on waste and repealing certain directives. Available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0098

[15] European Parliament and the Council (2000) Directive 2000/60/EC, establishing a framework for community action in the field of water policy. Available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32000L0060

[16] Environmental Protection Agency, Ireland (EPA) (2004) IPC Guidance Note – Guidance Note on Storage and Transfer of Materials for Scheduled Activities. Available at www.epa.ie

[17] Environmental Protection Agency, Ireland (EPA) (2014) National Hazardous Waste Management Plan 2014-2020. Available at www.epa.ie

[18] Best Practice Guide BPGCS005 – Oil Storage Guidelines. Available at www.envirocentre.ie

- Construction and Demolition Waste Management – a handbook for Contractors and Site Managers[20].
- IEMA Environmental Impact Assessment Guide to: Delivering Quality Development[21].

7.17 UK Pollution Prevention Guidelines have also been considered in the production of this plan. The suite of Pollution Prevention Guidelines published by the Scottish Environmental Protection Agency (SEPA), the Environment Agency and the Northern Ireland Environment Agency (NIEA), are considered as a source of information on good practice only. Currently, a review for the PPGs is underway, and will result in a replacement guidance series. However, only some have been completed and therefore a mixture of guidelines and guidance documents are available. These documents provide a sound basis for any OCEMP and can be accessed online.[22] The PPGs/GGPs most relevant to the Proposed Development construction phase include:

- PPG1 'General Guide to the Prevention of Pollution'
- GPP2 'Above Ground Oil Storage'
- GGP5 'Works and Maintenance in or Near Water'
- PPG6 'Working at Construction and Demolition sites'
- PPG7 'Safe Storage – The Safe Operation of Refuelling Facilities'

7.18 These PPGs/GGPs provide guidance as to the various environmental considerations and potential mitigation and prevention measures.

Health and Safety Management

7.19 A site-specific Health and Safety plan should be implemented and followed during construction of the Proposed Development. All work should be carried out in accordance with the following health and safety regulations:

[19] Department of the Environment, Heritage and Local Government (2006) Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects. Available at www.envirocentre.ie

[20] FÁS and Construction Industry Federation (2002) Construction and Demolition Waste Management – A handbook for Contractors and Site Managers. Available at www.ncdwc.ie

[21] IEMA (2016) EIA Guide to: Delivering Quality Development. Available at: http://www.iema.net/assets/newbuild/documents/Delivering%20Quality%20Development.pdf

[22] Environmental Guidance (Wales, Scotland, and NI). Available online: http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/

- Safety, Health and Welfare at Work Act 2005[23]
- Safety, Health and Welfare at Work (Construction) Regulations 2013[24]
- Safety, Health and Welfare at Work (General Application) Regulations 2007[25]

[23] Office of the Attorney General, 2005. Safety, Health and Welfare Act 2005. Available at www.hsa.ie

[24] Office of the Attorney General, 2013. Safety, Health and Welfare at Work (Construction) Regulations 2013. Available at www.hsa.ie

[25]https://www.hsa.ie/eng/Legislation/Regulations_and_Orders/General_Application_Regulations_2007/General_Application_Regulations_2007_S_I_2007_.pdf

RESPONSIBILITIES

Key Contacts & Roles

7.20 The detailed OCEMP will need to confirm the details outlined in Table 6-1 below.

Table 6 - 1: Indicative Key Contacts & Responsibilities (governance subject to change)

	Name	Role	Address	Name & Contact Details
Developer	Ballyteige Solar Limited	To ensure all planning condition requirements are implemented	First Floor, The Hive, Carmanhall road, Sandyford Business Park, Dublin 18, Dublin, Ireland D18 Y2C9	TBC
Main Contractor	TBC	Responsible for the development of the CEMP in line with planning condition requirements	TBC	TBC
Site Manager	TBC	Responsible for the implementation of the CEMP with all site personnel	TBC	TBC
Environmental Compliance Officer	TBC	Responsible for the coordination and development	TBC	TBC
Consulting Engineers	TBC	Responsible for the development of method statements and design	TBC	TBC

ENVIRONMENTAL SENSITIVITIES

7.21 The environmental assessments which were undertaken in support of the planning application identified some sensitivities onsite.

7.22 The key potential environmental impacts associated with the site preparation and construction works are set out in Table 6-2. Relevant potential sensitive receptors to the works are identified. These potential sensitive receptors, the environmental considerations and potential impacts are to be considered as the basis for a future detailed CEMP.

Table 6 - 2: Environmental Considerations and Impacts

Environmental Issue	Potential Receptor	Potential Impacts
Protected Species	Badger	Disturbance, destruction of sett, accidental trapping, and the restriction of movement through the site (foraging habitat)
Protected Species	Otter	Disturbance, contamination of aquatic environment, accidental trapping, and the restriction of movement through the site
Protected Species	Bats	Disturbance / damage to roosts.
Protected Species	Breeding birds	Disturbance / damage to nests.
Water	Waterways adjacent to the Proposed Development	Contamination of aquatic environment
Water	Groundwater	Contamination of groundwater by additional pathways caused by piling Risk to aquifer recharge Risk to existing groundwater flow route
Soil	Soil on site	Contamination, compaction & soil degradation Reduced filtration

Ecology

Habitats

7.23 The extended phase 1 habitat survey of the Proposed Development undertaken on the 9th and 10th October 2024 identified nine habitat types.

7.24 A total of nine habitat types were noted within the ESA, comprising of;

- Treelines (WL2)
- Drainage Ditches (FW4)
- Depositing/Lowland Watercourses (FW2)
- Dry canals (FW3)
- Scrub (WS1)
- Hedgerow (WL1)
- Buildings and Artificial Surfaces (BL3)
- Mixed Broadleaved Woodland (WD1)
- Improved Agricultural Grassland (GA1)

7.25 Survey work was carried out in accordance with the Fossitt Guide to Habitats in Ireland (2000) in order to produce a habitat map.

7.26 The main impacts during the construction phase include the direct loss of habitat under the Proposed Development footprint and indirect loss of habitat due to disturbance and pollution. The loss of improved agricultural grassland is considered to be negligible to nature conservation within the local area.

7.27 Please refer to the supporting **Technical Appendix 2: Ecological Impact Assessment**[26] for full details on the habitats present within the Proposed Substation Site.

[26] Maloney. L. (2023) Technical appendix 2: *Ecological Impact Assessment. Colehill 110Kv Substation and Grid Route*. Neo Environmental Ltd.

Protected Species

7.28 As part of the Ecological Impact Assessment a desk-based data search was conducted through the National Biodiversity Data Centre (NBDC) to obtain information regarding protected/notable species within 2km of the Proposed Development Site boundary. In addition, the habitat survey included a species scoping survey to identify the potential of the Proposed Development Site to support protected and notable species. Please see the Ecological Impact Assessment (**Technical Appendix 2; Ecological Impact Assessment**) for details on the selection of study zones and ecology methodology.

7.29 Records of badger were identified within the 2km desk-study data search. No definitive signs of badger activity were noted during the survey. Suitable habitats for badgers were observed, including treeline, hedgerow and scrub for sett-building and improved agricultural grassland for foraging badgers.

7.30 There are records of Soprano pipistrelle in the 2km data search of the site. Soprano pipistrelle records are from grid square N32U, the Proposed Development is within grid square N32Y. Improved grassland forms the majority of this site, offering sub-optimal foraging habitat for bat species due to their limited prey abundance.

7.31 The woodlands, treelines and hedgerows provide more suitable foraging and roosting habitat, while the watercourse, drainage ditches and scrub will also provide some foraging opportunities.

7.32 One standalone mature ash tree (see **Table 2-8** & **Appendix 2A – Figure 2.2**) within a hedgerow was identified as having Low Bat Roost potential adjacent to the Proposed Development boundary.

7.33 In the event that Proposed Development necessitates the removal/trimming of the ash tree with Low Bat Roost Potential, soft felling techniques will be used, following the precautionary principle, if roost potential exists, to ensure that no cavities are cut through and branches or trunk sections with cavities are lowered carefully to the ground and left with the access hole upward-facing overnight to allow any bats potentially present to leave safely. Such works will also be overseen by a suitably qualified and experienced ECoW.

7.34 Records of otter were identified by the 2km desk-study data search.

7.35 No sightings or field signs of otter were noted during the site walkover. However, suitable habitat for foraging/commuting otter was noted in the survey area. The watercourse and drainage ditches within the Proposed Development Site may provide suitable habitat for foraging and commuting otters. However, most habitats within the Proposed Development Site are considered to be sub-optimal for otter, as these are predominantly Improved

Agricultural grassland, bounded by hedgerows and treelines. Therefore, the use of the Proposed Development Site by otter is likely to be restricted to foraging/commuting otter.

7.36 Records of pygmy shrew were identified within the 2km desk-study data search. This species is adapted to a wide range of habitats including improved grassland and hedgerows. No evidence of this species was identified during the walkover surveys.

7.37 Records of red squirrel were identified within the 2km desk-study data search. Mixed broadleaf forest in the ESA may provide suitable habitat for red squirrel. However, most habitats within the Proposed Development Site are considered to be sub-optimal, as these are predominantly Improved agricultural grassland, bounded by hedgerows and treelines. Therefore, the use of the Proposed Development Site by red squirrel is likely to be restricted to commuting along tree lines due to the abundance of optimal habitat outside of the Development Area.

7.38 Records of pine marten were identified within the 2km desk-study data search. Mixed broadleaf forest on the edge of the Proposed Development Site may provide suitable habitat for pine marten. However, most habitats within the Proposed Development Site are considered to be sub-optimal, as these are predominantly Improved grassland, bound by hedgerows and treelines.

7.39 Records of Greater, white-toothed shrew, House mouse, West European hedgehog were identified within the 2km desk-study data search. These species are adapted to a wide range of habitats. Treelines, mixed broadleaved woodland, hedgerow along the boundary of the site provide cover and foraging resources. No evidence of these species were identified during the walkover surveys.

Environmental Designations

7.40 The desk-based assessment identified six Special Areas of Conservation (SACs) within 15km of the Proposed Development Site: Clara Bog SAC, Raheenmore Bog SAC, Split Hills and Long Hill Esker SAC, Lough Ennell SAC, River Barrow and River Nore SAC and Charleville Wood SAC. There are two Ramsar Sites: Clara Bog and Raheenmore Bog. The desk study also identified one Natural Heritage Area (NHA), Daingean Bog NHA, and seven proposed Natural Heritage Areas (pNHA): Charleville Wood pNHA, Ballyduff Esker pNHA, Derrygolan Esker pNHA, Ballyduff Wood pNHA, Grand Canal pNHA, Murphy's Bridge Esker pNHA and Rahugh Ridge (Kiltober Esker) pNHA.

7.41 It has been concluded that hydrological connectivity exists between the Proposed Development Site and Charleville Wood SAC, ecological connectivity exists between the Proposed Development Site and the River Barrow and River Nore SAC, and potential ecological connectivity exists with The Grand Canal pNHA, although there will be no adverse effects on the integrity of any European sites or other non-statutory designated sites as a result of the Proposed Development. However, as a precaution, several measures have been

outlined within this EcIA to reduce any potential impacts of the Proposed Development on European sites.

7.42 All designated sites with a connection to the Proposed Development Site have been outlined and fully assessed within the supporting Natura Impact Assessment (NIS) (see **Volume 1**). The findings of the NIS conclude that the Proposed Development **will not lead to any significant adverse effects** upon any of the Natura 2000 sites within the study area.

Design and Best Practice Measures

7.43 Given the low levels of excavation and concrete required, the nature of the development and the dilution factor, it has been concluded that the Proposed Development would not have any significant direct or indirect impact on the conservation objectives of the European sites within the zone of interest. The findings of the NIS (see **Volume 1**) concluded that, with the implementation of the appropriate measures and mitigation, along with ongoing monitoring to ensure compliance, it is considered that the Proposed Development **will not have a significant effect upon any qualifying features, and therefore the integrity, of the European sites** connected with the Proposed Development Site.

7.44 Measures recommended within **Technical Appendix 2: Ecological Impact Assessment** include:

- Best practice pollution prevention measures implemented prior to and throughout the construction phase to prevent contaminants entering the aquatic environment;
- Pre-commencement otter survey;
- Pre-commencement badger survey;
- Pre-construction breeding bird survey on any trees or hedgerow to be removed (if works are to commence between March and August inclusive);
- All excavations to be securely covered, or a suitable means of escape provided (ramp at 45^0) at the end of each working day to prevent accidental trapping of otter and badger;
- Fencing to include mammal gates or a 10cm gap at base to allow free movement of mammals through the site.

Hydrology

7.45 According to the Environmental Protection Agency (EPA) Map[27] the proposed substation Site and the surrounding area lies within Hydrometric Area No.25, Lower Shannon (Water Framework Directive) Catchment Area and within the Tullamore sub catchment 'SC_010'.

7.46 The Proposed Substation Site is contained within the Tullamore_030 river sub basin.

Local River Network

7.47 The Ballyteige Little Watercourse starts in the southwest corner of the Proposed Development Site and flows in a western direction before converging with the Wood of O Stream approximately 0.4km west of the Proposed Development Site. Which confluences with the Corndarragh Stream approximately 1.8km west of the Proposed Development Site and this then connects to the Tullamore River approximately 5km southwest of the Proposed Development Site.

7.48 **Figure 4.1: Appendix A of Technical Appendix 4** shows these watercourses in relation the Proposed Development Site.

Internal Watercourses

7.49 Due to the relatively flat nature of the Proposed Substation Site, field drains bound most of the fields within the site to collect surface waters and convey to the Ballyteige Little Watercourse.

Groundwater Vulnerability

7.50 Groundwater Vulnerability refers to the intrinsic geological and hydrogeological characteristics that determine the ease at which groundwater may be contaminated by human activities. The more vulnerable the groundwater is, the more easily it can be contaminated by surface water. The GSI Groundwater Vulnerability maps are based upon the type and thickness of subsoils, and the presence of karst features.

7.51 According to the GSI map, the groundwater vulnerability across the Proposed Substation Site is considered to be 'Moderate'. The subsoil permeability is classed as 'Moderate' which indicates its thickness of over 10m.

27Environmental Protection Agency. EPA Map Viewer. Available at: http://gis.epa.ie/Envision

CONSTRUCTION METHOD STATEMENT

Introduction

7.52 This Construction Method Statement (CMS) outlines the management plan for the construction and decommissioning phases of the Proposed Development. Employed contractors will be instructed on compliance with the contents of this document prior to accessing the site for construction.

Construction Operations

7.53 The Proposed Development will be constructed in accordance with the drawings submitted in support of the planning application.

Construction Activities

7.54 The following activities will be undertaken during the construction phase:

- Erecting construction traffic signage;
- Creation of internal site tracks;
- Erecting security fence;
- Erecting temporary construction compound;
- Site preparation, including mowing and marking out if required;
- Constructing the permeable pad for the grid compound;
- Sustainable Drainage Systems (SuDS) installation;
- Cable route trenching and cable laying;
- Concrete base formation for the buildings and associated above ground infrastructure;
- Building of above ground infrastructure;
- Removal of construction compound; and
- Installation of ecological and landscape measures as outlined within the supporting Ecology and Landscape and Ecology Management Plan (LEMP), please see **Figure 1.10, Appendix 1A of Technical Appendix 1: Landscape and Visual Assessment.**

Trenching Methodology

- The Contractor, and their appointed Site Manager, will prepare a targeted Method Statement concisely outlining the construction methodology and incorporating all mitigation and control measures included within the Planning Application and accompanying reports;
- All existing underground services shall be identified on site prior to the commencement of construction works;
- The proposed grid connection is circa 7.5km in length (with the majority on public roads) and is to be installed along private agricultural land, public roads, and ESB owned land. The last section within ESB land will be a section 5 and is not included in this application.
- The excavated trench will be approximately 825mm in width and approximately 1315mm deep.
- The base of the excavated trench will be lined with Cement Bound Granular Mixture B (CBGM B). The UGC will consist of 3 No. 160mm diameter HDPE power cable ducts, 2 No. 125mm diameter HDPE communications duct and 1 no. 125mm diameter earth continuity duct. It is anticipated that this work along the public road will be carried out on the carriageway apart from the joint bays which will be situated within the verge and public road;
- At watercourse crossings, the contractor will be required to adhere to the proposed typical culvert undercrossing drawing **(051064-DR-117 P3)**, typical culvert overcrossing **(051064-DR-118 P2)**, **Figure 116** cable crossing over existing culverts, **Figure 117** Proposed open ditch crossings and **051064-DR-122** HDD Crossing details and environmental control measures outlined within the Planning Application and accompanying reports, the detailed Construction Environmental Management Plan (CEMP) to be prepared prior to the commencement of construction, and best practice construction methodologies;
- A HDD may also be required where the grid route intersects the Corndonagh Stream on the L1025 at Chainage 4180m shown on **Figure 103 (volume 2)** and indicative drilling options in **051064-DR-122 in Volume 2**.

- The proposed cable route may require a Horizontal Directional Drilling (HDD) crossing where the route intersects the Corndarragh Stream. In this case, the cable will cross under the watercourse using a trenchless HDD method, subject to detailed design and liaising with Offaly County Council.
- Where the cable route or cable interconnection intersects any small culverts, bridges or dry canals, the culvert, bridges or dry canals will remain in place and the ducting will be installed above/below it and provide minimum separation distances in accordance with ESB/ Eirgrid, Irish Water and Waterways Ireland specifications;
- The proposed development does not involve the draining or modifying of any of the minor or major tributary watercourses;
- No installation will take place during extreme weather warnings. No construction personnel, operation or maintenance personnel will be permitted to carry out any works during extreme flood events;
- No more than a 100m section of trench will be opened at any one time. The second 100m section will only be excavated once the majority of reinstatement has been completed on the first;
- The excavation, installation and reinstatement process will take an average of one day to complete a 100m section;
- Following the installation of ducting, pulling the cable will take approximately one day between each joint bay; and
- Where required, grass will be reinstated by either seeding or by replacing with grass turf.

Interconnection Trenching Methodology

- The Contractor, and their appointed Site Manager, will prepare a targeted Method Statement concisely outlining the construction methodology and incorporating all mitigation and control measures included within the Planning Application and accompanying reports;
- All existing underground services shall be identified on site prior to the commencement of construction works;

- The proposed interconnection route is circa 610m in length and is to be installed along private agricultural land/ track and public road. A HDD is required to cross the dry canal – please refer to **Figure 105 Volume 2** for the HDD location and **Figure 106 Volume 2** for the indicative drilling option.
- The excavated trench will be approximately 840mm in width and approximately c.1200mm deep and will contain 3 x 33kV circuits.

Horizontal Directional Drilling (HDD) Methodology

- A works area of circa 40m2 for the HDD entry side and circa 20m2 on the HDD exit side will be required for the HDD equipment and vehicles. These areas will be fenced off during the HDD implementation.
- The drilling rig and fluid handling units will be located on the entry side and will be appropriately bunded using sandbags, which will contain any fluid spills and stormwater run-off.
- Entry and exit pits (2m x 3m x 1m) will be excavated; the excavated material will be temporarily stored within the works area and used for reinstatement or disposed to a licensed facility.
- The HDD pilot bore will be undertaken using a wireline guidance system. Assembly will be set up by the drilling team and steering engineer.
- The pilot bore will be drilled to the pre-determined profile and alignment under the dry canal and Wood of O road.
- The steering engineer and drill team will monitor the drilling works to ensure that modelled stresses and pressures are not exceeded.
- The drilled cuttings will be flushed back by drilling fluid to the entry and exist pits and recycled for re-use.
- Once the first pilot hole has been completed a hole-opener or back reamer will be fitted in the exit side which will then be pulled back to the entry side as part of the pre-reaming/hole opening process to enlarge the hole to the correct size.

- When the pre-reaming/hole opening/hole cleaning has been completed, a reamer of slightly smaller diameter than the final cut will be installed on the drill string to which the ducts will be attached for installation.
- The drilling fluid will be disposed of to a licensed facility.
- The ducts will be cleaned and proven and their installed location surveyed.
- The entry and exit pits will be reinstated to the specification of ESB Networks and any requirements of Offlay County Council.
- During periods of forecasted rain, HDD will not be performed.

Schedule & Hours of Operation

7.55 The construction phase of the Proposed Development is anticipated to cover a period of up to 12-18 months. During this period, there will be a combination of HGVs (including for any abnormal loads) for the component deliveries and cars/vans for construction staff. HGV movements are expected to be most intense throughout the early stages of construction, tailing off towards the final weeks. Car/van movements are expected to be constant throughout.

7.56 All traffic movements will be carried out between the hours of 07.00 to 19.00 on Monday to Friday and 08.00 to 16.00 on Saturdays. Outside of these times works are limited to:

- Abnormal loads will likely be delivered outside of these times and will be subject to prior approval with the council;
- works which do not require significant noise eg, distribution of materials, assembly of structures and modules, commissioning and testing and
- Works required in an emergency where there is the potential of harm or damage to personnel, plant, equipment, or the environment, provided the developer retrospectively notifies the County Council of such works within 24 hours of their occurrence.

Staff

7.57 It is forecast that there will be a maximum of 30 staff on site at any one time during the construction periods, although this will vary subject to the overall programme of works.

Equipment

7.58 As outlined in **Table 6-3 below**, plant equipment required for the construction phase may include but not be limited to the following:

Table 6 - 3: Plant Equipment

Equipment	Function
JCB Diggers / cable trenching machines	Trenching for cables
Dump trucks	Earth distribution as required
Vibrating roller	Compacting access tracks and pads
Telehandler(s)	Distributing materials
Crane	Capable of lifting transformer and other infrastructure into place
Fuel bowser	Refuel plant as required
Concrete mixer	Foundations
HGV	Delivery of materials
Drilling Rig	HDD Drilling
Cut off saw	Setting out trenches on road surface
Tracked Excavator	Excavating trenches

WASTE MANAGEMENT

Introduction

7.59 Surplus or waste materials may arise from materials imported to the site, or those generated on site during the construction and decommissioning phases.

7.60 The Waste Management Plan follows the waste hierarchy, as outlined within Article 4 of the Waste Framework Directive 2008/98/EC. The waste hierarchy, as defined within the legislation, is detailed below:

- Prevention;
- Re-use;
- Recycling;
- Other recovery; and
- Disposal.

Identification of Waste

7.61 There will be limited waste generated during the construction phase of the Proposed Development.

7.62 The contractor on site during each phase will ensure that all waste will be disposed of responsibly from the site. Potential waste generated during the construction phase is likely to include:

- Wooden crates or cardboard boxes in which the materials will be packaged. These will be removed from the site and recycled appropriately at regular intervals.
- Packaging materials from various components including cabling, etc. These will also be removed regularly and recycled.
- Aggregate and substrate from groundworks – soil will be excavated for the construction of the access tracks, construction slabs, etc. most of which is expected to be reused on site with some waste being removed.
- Site office waste will be collected separately in order to maximise the potential for recycling.

- Any kitchen waste will be taken off site in refuse containers and disposed of off-site.
- Oils/fuels, paints, solvents or other chemicals will be stored at the temporary site compound and disposed of appropriately.
- Burning of waste on site will be prohibited.

Waste Segregation and Storage

7.63 A specific segregation area within the temporary site construction compound will be identified where the separation of materials will take place during the construction phase. This area will allow for the separation of materials into those which can be reused, recycled or disposed.

7.64 All waste containers should be appropriate to the nature of the substances stored and should be secure to ensure no waste can escape. In addition, all waste containers should be appropriately labelled to ensure that it is clear to all construction staff what types of waste can be stored in each container. These containers should be located appropriately to reduce any potential hazards and to ensure no waste is released into the external environment.

7.65 Relevant waste and resource management procedures will be communicated to all construction operatives during the initial site induction, which is mandatory for all staff working on site. This will include instruction on the segregation, handling, re-use and return methods to be used by all parties at all appropriate stages of development. Where possible, waste will be eliminated, re-used or recycled as per the requirements of the waste hierarchy.

Storage of Fuels and Chemicals

7.66 As per Best Practice Guidance (BPGCS005),[28] all fuels, oils and chemicals on site will have a secondary containment system of 110% capacity and be located more than 20m from any watercourse (i.e. outside of the water course buffer).

7.67 A bunded diesel bowser will be located inside a fenced off area within the temporary construction compound. Any other chemicals will be stored within a storage container with an accompanying Control of Substances Hazardous to Health ("COSHH") Datasheet in accordance with health and safety regulations. If generators are used on site, these shall be bunded (the bund shall be capable of containing 110% of the fuel tank's capacity). The bund shall be kept empty of water.

[28] Best Practice Guide BPGCS005 - Oil Storage Guidelines. Available at:

http://www.envirocentre.ie/includes/documents/OilStorageBPG.pdf;

7.68 Where chemicals are required on site, they must be placed in an appropriate bund to prevent ground contamination. All chemicals must be stored in a correctly marked container clearly identifying the contents. Where labels are worn off, they must have a new label placed on them or the contents transferred to a correctly marked container. All safety data sheets for all chemicals should be filed on site as part of the CEMP.

7.69 Spill kits will be on site and, for ease of access, located in the site office. Contingency plans will be in place for dealing with a spillage should a spillage occur.

Refuelling

7.70 During construction, fuel and oil deliveries shall take place within the designated refuelling area within the temporary construction compound, the location of this area falls outside the watercourse buffers (discussed subsequently). The Contractor shall supervise site deliveries to ensure that the correct amount of material is delivered to the correct tank and the level is checked prior to refilling to avoid spillage.

7.71 Where refuelling of vehicles on site is necessary, the following guidelines will be strictly adhered to:

- Mobile plant will be filled in a designated area, on an impermeable surface well away from any drains or watercourses;
- A spill kit will be stored (and clearly marked) near refuelling areas;
- A bunded tank / bowser will be used with capacity of the bund to be 110% of the fuel storage capacity;
- Vehicles will never be left unattended during refuelling and drip trays should be located under all static plant vehicles;
- Hoses and valves will be checked regularly for signs of wear, and will be turned off and securely locked when not in use;
- Vehicles will not be left running unnecessarily and low emission fuels will be used where possible; and
- Diesel pumps and similar equipment will be checked regularly and any accumulated oil removed for appropriate disposal.

Excavation and Earthworks

7.72 All excavation and earthworks will be carried out in accordance with BS6031:2009 Code of Practice for Earthworks.[29] Soil handling, extraction and management will be undertaken with regard to best practice guidelines such as Guidance on the Waste Management (Management of Waste from the Extractive Industries) Regulations 2012.[30]

7.73 The following practices will be followed in relation to the excavation of cable trenches, topsoil stripping and any other earthworks:

- Any excavated material will be stored and re-used to infill excavations. Where the soil is to be re-used, this will be side casted. All side casted soil to be kept a minimum of 20m from any watercourse.
- Although unlikely, if any contaminated earth is uncovered, this will be stored separately and disposed of accordingly once the contaminant has been identified.
- Efforts will be made to ensure that water does not accumulate in excavated areas.
- All topsoil and subsoil will be stored separately, and care will be given to ensure the structure and quality of the soil is not damaged.
- The amount of exposed ground and soil stockpiles will be kept to a minimum and any stockpiles in place for an extended period of time will be allowed to re-vegetate naturally.
- Earthworks shall not occur during unsuitable weather conditions, including when soils are waterlogged or very dry.
- The substation is expected to be built in line with an overage of the existing ground level across the footprint of the Proposed Development.
- Any excavated soil which is not re-used or dispersed across the site and shall be stored on the impermeable surface at the construction compound and covered to prevent silt runoff and dust creation.

[29] British Standards Institute (BSI), 2009. BS 6031:2009 Code of Practice for Earthworks

[30] Environmental Protection Agency (EPA) 2012. Guidance on the Waste Management (Management of Waste from the Extractive Industries) Regulations 2012. Available at www.epa.ie

HDD

7.74 The following best-practice measures will be implemented along areas of HDD where appropriate:

- Drill entry and exit pits will be located a minimum of 10m from dry channels, with all excavated spoil also stockpiled at least 10m away to reduce the risk of runoff or sediment transport.
- Silt barriers, consisting of fencing fitted with geotextile fabric, will be constructed along the base of any spoil stockpiles and positioned on sloped ground to prevent surface water runoff.
- Filter fabric will be trenched into the ground to trap coarse particles in surface water, particularly during periods of heavy rainfall.
- The drill path will be designed to maintain a depth of at least 3m beneath the canal bed, to minimise the risk of ground fracture (frac-out) and to ensure the cable remains protected from any future re-watering or natural erosion.
- Although the canal is dry, an Ecological Clerk of works will be assigned to monitor the HDD alignment during drilling activities to detect any potential frac-out or surface migration of drilling fluid. If any signs are observed, all drilling will cease immediately.
- A precautionary containment boom will be placed downslope (if applicable) to intercept any accidental spills or drilling residues.
- Any groundwater or drilling fluid extracted from the pits will be temporarily stored in baffled settlement tanks and discharged to adjacent grassed areas, avoiding direct discharge into drainage channels or the canal bed.
- Excess drilling lubricant will be tankered off-site for recycling, with a tractor and tanker on standby at the entry pit throughout operations.

Concrete

7.75 Concrete will not be allowed to enter watercourses under any circumstances, and drainage from excavations in which concrete is being poured will not be discharged directly into existing watercourses without appropriate treatment and consent from the relevant authority. Delivery trucks, tools and equipment will be cleaned at the wheel wash facility located at the temporary site compound.

7.76 Buffers from the site drainage ditches of 2m, as well as 10m to OPW managed watercourse, have been incorporated into the design of the Proposed Development and therefore there will be no concrete being used within the immediate vicinity of a watercourse.

Monitoring

7.77 Operations and activities that have the potential to impact on the water environment will be regularly monitored throughout the construction of the Development. This is to ensure compliance with planning conditions and environmental regulations.

7.78 The Site Manager is responsible for ensuring that all monitoring is carried out according to the Environmental Monitoring Programme, summarised in Table 6-4 below.

Table 6 - 4: Environmental Monitoring

Environmental Aspect	Monitoring Location	Monitoring Frequency	Monitoring Arrangements
Site housekeeping	Entire site	Daily	Visual inspection
Surface watercourses	All watercourses	After periods of rain Weekly, if no rain	Visual inspection
Fuels and chemicals – appropriate storage	Entire site	Daily	Visual inspection

7.79 These records and results will be maintained by the Site Manager and will be stored on site during the construction phase.

Site Office Waste

7.80 The proposed site layout includes for a temporary construction compound and all site waste will be stored in this area.

- A Project Supervisor will be employed to ensure that welfare facilities in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013, Statutory Instrument No. 291 are located at the proposed site for the duration of the construction. Welfare facilities will be provided within the construction compound to cater for the required staff members at any one time. The welfare facilities will include:
  - The provision of toilet, washing and changing facilities;
  - Clothing Storage;

  - Facilities for eating;
  - Rest room; and
  - Car Parking.
- Water will be held within a holding tank within the temporary welfare facility. There will also be a separate tank for waste. The Project Supervisor will be responsible for organising the tanks to be emptied/filled by an approved local contractor as and when required.

POLLUTION PREVENTION

Introduction

7.81 Given the low levels of excavation and concrete required, the nature of the development and the dilution factor, it can be concluded that the Proposed Development would not have any significant direct or indirect impact on watercourses. As outlined in the Natura Impact Statement (NIS) (see Volume 1), no significant effects will occur for the qualifying interests or features of the European sites hydrologically or ecologically connected to the Proposed Development Site. No reliance is placed on 'mitigation measures' intended to avoid or reduce the likelihood of significant effects on any European site. General pollution prevention measures are not considered to be mitigation.

7.82 Notwithstanding this, this OCEMP sets out general pollution prevention measures.

Best Practice Measures

7.83 Suitable protection for watercourses potentially affected by the works will be installed prior to relevant works proceeding. These measures will be in-line with Environmental Protection Agency (EPA) Pollution Prevention Guidelines. Protection measures will include:

- Plant and equipment will be stored on dedicated hardstandings within the construction compound. This will minimise the risk of pollution caused by leakages occurring out of hours. Drip trays will be used where appropriate.
- Plant and equipment will be regularly checked to ensure their correct operation and verify no leakages.
- All plant and equipment will utilise biodegradable hydraulic oil.
- Spill kits will be readily available to all personnel. The spill kits will be of an appropriate size and type for the materials held on site.
- Diesel fuel will be stored in a bunded diesel bowser which will be located within a fenced off area in the construction compound.
- Refuelling and maintenance of vehicles and plant will take place in designated areas of hardstanding.
- All other chemicals will be stored in a secure area with an accompanying COSHH Datasheet.

- Wastewater from the temporary staff toilets and washing facilities will be discharged to sealed containment systems and disposed via licensed contractors.

7.84 All staff on site will be made aware of the pollution prevention measures being implemented throughout the construction appropriate toolbox talks and the site induction.

Noise and Vibration

7.85 Operating plant noise will be kept within the standards and time periods dictated for the site. Any noncomplying plant will be stopped and stood down until it can be rectified or removed from the site.

7.86 The British Standard which gives guidance on noise from construction and mineral working sites is BS 5228. This document does not specify absolute noise limits relating to construction activities; however, it does provide detailed guidance on the steps that can be taken to minimise potential noise & vibration effects. Reasonable mitigating measures are as follows:

- Vehicles and machinery will be switched off when not in use.
- Operation of plant, including fitting and proper maintenance of silencers and/or enclosures, avoiding excessive and unnecessary revving of engines and parking of equipment in locations which avoid possible effects on residential properties.
- Deliveries limited to:

– 07.00 to 19.00 Monday to Friday.

– 08.00 to 16.00 Saturdays.

– Abnormal loads will likely be delivered outside of these times and will be subject to prior approval with the council.

– Public holidays will be observed unless otherwise agreed with the local planning authority.

– When loading and unloading material, attempts shall be made not to drop material from a height.

7.87 Any noise complaints shall immediately be directed to the site manager. Depending on the nature of the complaint remedial action may need to be undertaken.

Dust

7.88 In order to control, prevent and minimise dirt on the access route and emissions of dust and other airborne contaminants during the construction works, the following measures will be implemented:

- Wheel washing equipment will be available and used on-site (where judged necessary), as required to prevent the transfer of dirt and stones onto the public highway. All drivers will be required to check that their vehicle is free of dirt, stones and dust prior to departing from the site. Wheel washing will likely be a water bowser and power spray. It will not have any cleaning additives and will drain into the temporary drainage feature at the site compound.
- During windy conditions, any dust generating activities will be avoided or minimised, where practical.
- Any soil stockpiles will be covered when left for extended periods of time.
- Driving practices which minimise dust generation will be adopted.
- Loads into and out of the site will be covered where required.

Water Crossings

7.89 The proposed cable route will require cross culverts. Whether the crossing will be done underneath or over the culvert will depend on the depth of the existing crossings. Where the cable route intersects with existing watercourses, a detailed construction method statement will be prepared by the Contractor before the commencement of construction and is to be approved by the relevant environmental agency. Inland Fisheries Ireland has published guidelines relating to construction works along water bodies entitled 'Requirements for the Protection of Fisheries Habitats during Construction and Development Works at River Sites", and these guidelines will be adhered to during the construction of the proposed development.

7.90 Run off from site roads and river crossings can contain high levels of silt, especially during the construction phase. Road drains typically drain to the local water environment so are a pathway for pollution. At all the stages of culvert construction, the contractor will be contractually bound to follow the relevant pollution prevention guidelines which will include the following mitigation measures:

- Track culvert will be pre cast and not poured in situ.

- brushing or scraping roads to reduce dust and mud deposits, appropriately disposing of material collected;
- Excavated material should be kept well away from watercourses;
- Putting small dams or silt fencing in artificial roadside ditches to retain silt;
- Working from the bank where possible (taking steps to stabilise the bank during and after works), avoiding working in the river; and
- Divert run-off to settlement lagoons.

DRAINAGE MANAGEMENT PLAN

Introduction

7.91 The measures described in this section will be adopted during the construction phase in order to manage on-site drainage in accordance with current best practice and legislation.

Monitoring Records and Emergency Spill Response

Monitoring

7.92 To ensure compliance with the detailed Drainage Management Plan ("DMP"), drainage management works will be supervised by the site engineer.

Emergency Spill or Pollution Response

7.93 In the event of a liquid spill occurring on a construction site, the Contractor shall cease work immediately in the vicinity. Contractor's trained personnel shall have appropriate PPE and do as follows:

- Locate the source of the pollution and stop/contain any further flow if possible;
- If spillage is flammable, extinguish all ignition sources;
- Immediately deploy the spill kit in accordance with the manufacturer's instructions;
- Clean up the spill; and
- All used spill kit materials should be disposed of in the proper manner as outlined in spill summary procedures.

7.94 The Site Manager shall contact:

- The Client;
- Environmental Protection Agency ("EPA") 24-hour emergency incident line 1890 33 55 99; and
- Inland Fisheries 24-hour pollution line 1890 34 74 24. The pollution hotline number shall be referenced in the construction site rules and displayed in the Site Office and in the Emergency preparedness & response plan.

7.95 Each Contractor working with controlled substances shall supply appropriate spill kits which shall be kept on site. The spill kits shall be made accessible at all times to all site personnel.

7.96 In the event of a fire, all personnel must evacuate the site and assemble at the site entrance. The Site Manager is responsible for calling the Fire Service, who will handle the emergency.

Proposed Drainage Arrangements

7.97 As outlined within the supporting **Technical Appendix 4: Flood Risk & Drainage Impact Assessment**, SuDS will be installed as part of the site preliminary works prior to the main equipment deliveries. The layout of the drainage design is indicated within **Figure 4.4**, **Appendix 4A** of **Technical Appendix 4**.[31]

Construction Phase

7.98 The construction phase will utilise the construction compound on the Proposed Substation future extension area.

Operational Phase

7.99 It is proposed to construct a network of rainwater harvesting tanks and a soakaway pit within the Proposed Substation Site. The idea is to capture any overland flow in the SuDS device before infiltrating into the surrounding soils.

7.100 The underground piped system connect the Eirgrid building and IPP switchroom to rainwater harvesting tanks, which overflow into a soakaway pit. As the transformer will hold a volume of oil, the system will include a class 1 full retention separator. The soakaway pit and rainwater harvesting tanks will be designed to hold a total volume of 111m^3 with the detailed design of the structure being submitted to the council for review prior to the construction period.

7.101 A permanent toilet is proposed within the Eirgrid building and IPP compound and will be utilised by maintenance staff of substation. Each toilet will be off grid toilet with a foul holding tank which will be emptied when required by an approved contractor.

Drainage Mitigation

Clean Water Diversion

7.102 Where feasible, clean water (e.g. water that has yet to come into contact with any disturbed construction or working areas), will be kept separate from the watershed or intercepted by the construction drainage.

[31] McGhee, M (2020) Technical Appendix 4 - Flood Risk Assessment – Fieldstown Solar Farm

7.103 Up-gradient cut-off ditches and water diversion measures will be installed, where required, in order to intercept and divert clean water around construction compound area. These measures will be installed ahead of the main construction works. This will reduce or prevent the amount of potential silt-laden or polluted water that might require treatment.

7.104 Clean runoff that has been diverted around an area of working should be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques.

7.105 Sediment control measures, such as silt traps, gravel, sand bags, anchored straw bales or silt fencing might be required at the discharge point to prevent erosion at the outlet and aid dispersion of the diverted water.

Silt Control

7.106 Silt-laden runoff should be expected from any areas of recently exposed soil or rock. There is also potential for pollution to occur from machinery used in the construction of the Proposed Development.

7.107 Any introduced or artificial materials required (e.g. silt fencing, straw bales, sand bags etc.) that might need to be deployed onsite, will be removed on completion of the works.

7.108 Discharge from the silt control measures will be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques or discharged into the existing drainage network within the Proposed Substation Site.

7.109 Additional Mitigation Measures

- The contractor shall ensure that silt fences are regularly inspected and maintained during the construction phase.
- If very wet ground must be accessed during the construction process bog mats/aluminium panel tracks will be used to enable access to these areas by machinery. However, works will be scheduled to minimise access requirements during very wet periods and predominantly aiming to carry out works during the summer season.
- The contractor will carry out visual examinations of local watercourses from the proposed works during the construction phase to ensure that sediment is not above baseline conditions. In the unlikely event of water quality concerns, the Environmental Manager and ECoW will be consulted.
- Excavations will be left open for minimal periods to avoid acting as a conduit for surface water flows.

- Entry by plant equipment, machinery, vehicles, and construction personnel into watercourses or wet drainage ditches shall not be permitted. All routes used for construction traffic shall be protected against migration of soil or wastewater into watercourses.
- Cabins, containers, workshops, plant, materials storage, and storage tanks shall not be located near any surface water channels.

SUMMARY & CONCLUSIONS

7.110 The best practice and design measures identified throughout this OCEMP have been summarised in Table 6-5 below.

Table 6 - 5: OCEMP Best Practice and Design Measures

Potential Receptor	Potential Impact	Recommended Measures
Ecology		
Badger	Disturbance, destruction of sett, accidental trapping, and the restriction of movement through the site (foraging habitat)	All excavations should be securely covered, or a suitable means of escape provided at the end of each working day Implementation of mammal access in perimeter fencing to allow the free movement of badgers through the site.
Otter	Disturbance and the restriction of movement through the site	All excavations should be securely covered, or a suitable means of escape provided at the end of each working day Implementation of mammal access in the perimeter fencing to allow the free movement of otter through the site.
Water		
Streams and Rivers outside the Proposed Development Site boundary where surface water runoff will be discharged to on exit from the site via field drains.	Pollution	Implementation of pollution prevention measures detailed within this OCEMP. 2m field drain buffer zone. 10m buffer to OPW watercourse.

	Increased surface water runoff	Implementation of Drainage Management Plan outlined within this OCEMP
Groundwater contamination	Pollution	Implementation of pollution prevention measures detailed within this OCEMP
Soil		
Soil	Pollution	Implementation of pollution prevention measures detailed within this OCEMP

Table 8-6: Recommended Mitigation Measures

Potential Receptor	Potential Impact	Recommended Mitigation
Ecology		
Badger	Disturbance, destruction of sett, accidental trapping, and the restriction of movement through the site (foraging habitat)	Pre-construction badger survey (Measures dependant on survey findings).
Otter	Disturbance and the restriction of movement through the site	Pre-commencement survey (Measures dependant on survey findings).
Breeding birds	Disturbance / damage to nest	Pre-construction breeding bird survey (if works are to commence between March and August inclusive)
Bats	Disturbance, destruction of roosts	Pre-commencement survey (Only where works directly affecting trees are required)

7.111 The overall objective of this OCEMP is to reduce the potential impact on the environment during the construction phase of the Proposed Development. As outlined previously, the appointed contractor will need to follow the measures identified within this document.

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