XLINKS' MOROCCO-UK POWER PROJECT

Environmental Statement

Volume 2, Appendix 3.2: Onshore Water Framework Directive Assessment

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Glossary

Term	Meaning
Applicant	Xlinks 1 Limited
Converter Site	The Converter Site is proposed to be located to the immediate west of the existing Alverdiscott Substation Site in north Devon. The Converter Site would contain two converter stations (known as Bipole 1 and Bipole 2) and associated infrastructure, buildings and landscaping.
Converter station	Part of an electrical transmission and distribution system. Converter stations convert electricity from Direct Current to Alternating Current, or vice versa.
Drainage Board	Drainage Boards are an integral part of water level management in the UK. Each Drainage Board is a local public authority established in areas of special drainage need in England and Wales. They have permissive powers to manage water levels within their respective drainage districts. They undertake works to reduce flood risk to people and property and manage water levels to meet local needs.
Environmental Impact Assessment	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
Environmental Statement	The document presenting the results of the Environmental Impact Assessment process.
Heavily Modified Water Body	A body of surface water which, as a result of physical alterations by human activity, is substantially changed in character, as designated in accordance with the provisions of Annex II of the Water Framework Directive (WFD).
Horizontal Directional Drilling	Horizontal Directional Drilling (HDD) is a method of installing underground pipelines, cables and service conduit (or ducts) through trenchless methods to avoid obstacles and sensitive features (e.g. roads, watercourses, woodlands, etc.). The term HDD is used here interchangeably with other similar trenchless techniques but excluding micro tunnelling or direct pipe methods.
HVAC Cable Corridors	The proposed corridors (for each Bipole) within which the onshore High Voltage Alternating Current cables would be routed between the Converter Site and the Alverdiscott Substation Site.
HVAC Cables	The High Voltage Alternating Current cables which would bring electricity from the converter stations to the new Alverdiscott Substation Connection Development.
HVDC Cables	The High Voltage Direct Current cables which would bring electricity to the UK converter stations from the Moroccan converter stations.
Hydrological catchment	Areas of land where rainfall runoff collects to a specific zone.
Landfall	The proposed area in which the offshore cables make landfall in the United Kingdom (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Cornborough Range, Devon, between Mean Low Water Springs and the transition joint bays inclusive of all construction works, including the offshore and onshore cable routes, and landfall compound(s).
Lead Local Flood Authority	Lead Local Flood Authorities have responsibility for developing a Local Flood Risk Management Strategy for their area covering local sources of flooding. The local strategy produced must be consistent with the national strategy. It will set out the local organisations with responsibility for flood risk in the area, partnership arrangements to ensure co-ordination between these organisations, an assessment of the flood risk, and plans and actions for managing the risk.
Main river	The term used to describe a watercourse designated as a main river under the Water Resources Act 1991 and shown on the Main River Map. These are usually larger rivers or streams and are managed by the Environment Agency.

Term	Meaning
Maximum design scenario	The realistic worst-case scenario, selected on a topic-specific and impact specific basis, from a range of potential parameters for the Proposed Development.
Mean High Water Springs	The height of mean high water during spring tides in a year.
Mean Low Water Springs	The height of mean low water during spring tides in a year.
Onshore HVDC Cable Corridor	The proposed corridor within which the onshore High Voltage Direct Current cables would be located.
Onshore Infrastructure Area	The proposed infrastructure area within the Order Limits landward of Mean High Water Springs. The Onshore Infrastructure Area comprises the transition joint bays, onshore HVDC Cables, converter stations, HVAC Cables, highways improvements, utility diversions and associated temporary and permanent infrastructure including temporary compound areas and permanent accesses.
Ordinary Watercourse	Watercourses (such as a river, stream, ditch, cut, sluice, dyke or non-public sewer) that are not designated a Main River under the Water Resources Act (1991). Responsibility for management lies with the Lead Local Flood Authority, or Internal Drainage Board or some watercourses where there is an Internal Drainage District.
Proposed Development	The element of the Xlinks' Morocco-UK Power Project within the UK. The Proposed Development covers all works required to construct and operate the offshore cables (from the UK Exclusive Economic Zone to Landfall), Landfall, onshore Direct Current and Alternating Current cables, converter stations, and highways improvements.
River Basin District	Administrative area for coordinated water management, composed of multiple river basins (or catchments).
River Basin Management Plan	A collection of documents prepared by DEFRA which describe how waters are managed within each river basin district.
Site of Special Scientific Interest	A site designation specified and protected in the Wildlife and Countryside Act 1981. These sites are of particular scientific interest due to important biological (e.g. a rare species of fauna or flora), geological or physiological features.
Special Areas of Conservation	A site designation specified in the Conservation of Habitats and Species Regulations 2017. Each site is designated for one or more of the habitats and species listed in the Regulations. The legislation requires a management plan to be prepared and implemented for each Special Area of Conservation to ensure the favourable conservation status of the habitats or species for which it was designated. In combination with Special Protection Areas and Ramsar sites, these sites contribute to the national site network.
Special Protection Areas	A site designation specified in the Conservation of Habitats and Species Regulations 2017, classified for rare and vulnerable birds, and for regularly occurring migratory species. Special Protection Areas contribute to the national site network.
Study area	This is an area which is defined for each environmental topic which includes the Order Limits as well as potential spatial and temporal considerations of the impacts on relevant receptors. The study area for each topic is intended to cover the area within which an impact can be reasonably expected.
The national grid	The network of power transmission lines which connect substations and power stations across Great Britain to points of demand. The network ensures that electricity can be transmitted across the country to meet power demands.
Transition joint bay	A transition joint bay is an underground structure at the landfall area where the offshore cables are jointed to the onshore cables.
Utility diversions	Works required by statutory utility providers to re-route infrastructure around the Proposed Development.

Term	Meaning
Water Framework Directive	Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. The Water Framework Directive promotes water management through river basin planning. It covers inland surface waters, estuarine waters, coastal waters and groundwater.
Xlinks' Morocco UK Power Project	The overall scheme from Morocco to the national grid, including all onshore and offshore elements of the transmission network and the generation site in Morocco (referred to as the 'Project').

Acronyms

Acronym	Meaning
AC	Alternating Current
BGS	British Geological Survey
DC	Direct Current
Defra	Department for Environment, Food & Rural Affairs
DNRA	Does Not Require Assessment
EA	Environment Agency
EIA	Environmental Impact Assessment
ES	Environmental Statement
HDD	Horizontal Directional Drilling
HMWB	Heavily Modified Water bodies
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IAQM	Institute of Air Quality Management
IEMA	Institute for Environmental Management and Assessment
LLFA	Lead Local Flood Authority
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
NVZ	Nitrate Vulnerable Zone
OS	Ordnance Survey
PBDE	Polybrominated diphenyl ethers
PFOS	Perfluorooctane sulphonate
RBD	River Basin District
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TraC	Transitional and Coastal
UK	United Kingdom
WFD	Water Framework Directive
ZoI	Zone of Influence

Units

Units	Meaning
km	Kilometre
km^2	Square kilometres
m	Metre
m^2	Square metre
m^3	Cubic metre
m^3/s	Cubic metres per second

1 ONSHORE WATER FRAMEWORK DIRECTIVE

1.1 Introduction

1.1.1 This document forms Volume 2, Appendix 3.2: Onshore Water Framework Directive (WFD) Assessment of the Environmental Statement (ES) prepared for the United Kingdom (UK) elements of the Xlinks' Morocco-UK Power Project (the 'Project'). For ease of reference, the UK elements of the Project are referred to as the 'Proposed Development', which is the focus of the Environmental Statement (ES). The ES presents the findings of the Environmental Impact Assessment (EIA) process for the Proposed Development.

1.1.2 This document forms a screening assessment of the WFD compliance for the Proposed Development. Specifically, this document considers the potential impact of the Proposed Development landward of Mean Low Water Springs (MLWS), during the construction, operation and maintenance, and decommissioning. Further stages of the WFD assessment are to be provided within additional reports.

1.1.3 The aim of the onshore WFD assessment is to assess the potential impacts of the proposed works associated with the Proposed Development against the WFD parameters for the local waterbodies. The screening assessment includes a summary of the current local conditions. The assessment explores the potential for the Proposed Development to contribute towards WFD objectives and any likely alterations to the WFD classifications that could arise from the Proposed Development.

1.1.4 The onshore WFD assessment is required to demonstrate that the Proposed Development would not result in deterioration of the current quality status of the relevant WFD water body, and could provide improvements to the current status, in accordance with the objectives and measures set out in the South West River Basin Management Plan (RBMP).

1.1.5 Offshore elements of the Proposed Development are assessed within a separate report.

The Proposed Development

1.1.6 The Proposed Development forms the UK part of the Project proposed by the Applicant to develop a renewable energy generation facility in Morocco, connected via sub-sea electricity connection between north Africa and cables to the UK. The onshore elements of the Proposed Development comprise the UK infrastructure to be implemented onshore landward of MLWS. The key components of the onshore elements of the Proposed Development include:

- The area of land to be temporarily or permanently occupied during the construction, operation and maintenance, and decommissioning of the Onshore Infrastructure Area, including.
  - Converter stations: two independent converter stations, known as Bipole 1 and Bipole 2, to convert electricity from Direct Current (DC) to Alternating Current (AC) before transmission to the national grid.

  - HVAC Cables: these cables would connect the proposed converter stations to the national grid.
  - Onshore HVDC Cables: these cables would link the converter stations to the landfall site.
  - Highways improvements: improvements to the existing road network to facilitate access during construction and operation and maintenance, including road widening, and new or improved junctions.
  - Temporary and permanent utility connections: temporary and permanent utility connections to the construction compounds and the Converter Site.
  - Permanent utility diversions: permanent diversion of existing utility services within and adjacent to the Onshore Infrastructure Area.
- Landfall:
  - Landfall: the site at Cornborough Range where the offshore cables are jointed to the onshore cables. This term applies to the entire landfall area between MLWS and the transition joint bays. This includes all construction works, including the offshore and onshore cable routes, and Landfall compound.

1.1.7 For the purpose of the WFD assessment, the maximum design scenario for the Proposed Development is identified within Volume 1, Chapter 3: Project Description of the ES, and summarised below within **Table 1.1**.

Table 1.1: **Maximum design scenario considered for onshore WFD**

Construction phase	
Landfall	• Construction works at the Landfall comprise an initial 18 months of works, with a space between the second phase of works. The second phase of works at the Landfall would continue for a further six months.
	• Offshore and onshore HVDC cables are to come ashore via HDD and jointed together at TJBs. The Landfall Horizontal Directional Drilling (HDD) has a maximum length of 2,110 m from the exit pit to the TJBs. There is a maximum of 2 TJBs, each with a construction area of 750m^2 and a depth of 2.5 m. The HDD has 4 entry pits (located onshore) each with an area of 25 m^2 and a depth of 3 m. The volume of excavated material per entry pit will be 75 m^3. There would also be 4 exit pits (located offshore), each with dimensions of 15 m x 15 m.
	• A 10,000 m^2 Landfall compound is expected to be present for a duration of 36 months.
Onshore Cable Corridors	• The temporary and permanent Onshore HVDC Cable Corridor width is 65 m, with a length of up to 14.5 km. The temporary width of the HVAC Cable Corridors would be 32.5 m each, with a length of up to 1.2 km.
	• The expected construction duration for the Onshore HVDC Cable Corridor is up to 36 months. The expected construction period for the Onshore HVAC Cables is a total of 12 months, split into two separate phases.
	• The maximum number of cable trenches for Onshore HVDC Cable Corridor will be 2 with an approximate trench width at ground level of 4.3 m and depth of 1.4 m. The maximum number of cable trenches for the Onshore HVAC Cable Corridor will be 4 with an approximate trench width at ground level of 4.9 m and a depth of 1.4 m.
	• In regard to HDD, The maximum number of HDD locations will be 6 (including Landfall) along the Onshore HVDC Cable Corridor with two compounds per HDD, each with an area of up to 10,000 m^2. Duration of installation of up to 36 months.

Construction phase	
	• Within the Onshore HVDC Cable Corridor, there will be up to 34 joint bays, each with an area of 100 m^2 and a depth of 1.4 m. The distance between jointing bays would be between 800 and 1,100 m.
	• Within the Onshore HVDC Cable Corridor, there will be up to 34 link boxes each with an area of 2.25 m^2 and a depth of 1.4 m. The distance between link boxes would be between 800 and 1,100 m.
	• The main construction compound at Gammaton Road is to have an area up to 63,000 m^2 and is expected to be present for a duration of 72 months.
	• A secondary construction compound (A39 compound) is to have an area up to 48,000 m^2 and is expected to be present for a duration of 36 months.
	• Dimensions of temporary culvert/bridge crossings for the haul road will be a maximum 3 m in diameter and 10 m in length.
Converter Site	• The Converter Site would have a total footprint of 395,000 m^2 (including landscaping, drainage and internal access) and would include two converter stations and associated buildings with a combined footprint 130,000 m^2.
	• A 20,000 m^2 converter compound is expected to be present for a duration of 72 months.
Highways Improvements	• Road improvements to local highways and road networks including lane widening, new lanes and junctions.
Operation and maintenance	
Landfall	• Two TJBs: 300 m^2 (150 m^2 each).
Onshore cable corridor	• 34 Joint bays: An area of 100 m^2 per joint bay.
	• 34 Link boxes: An area of 2.25 m^2 per link box.
Converter Site	• The Converter Site would have a total footprint of 395,000 m^2 and would include two converter stations with a combined footprint 130,000 m^2.
Decommissioning	
Landfall	• The cables within the Landfall HDD will be pulled out at the landward end and recycled.
Onshore HVDC and HVAC cables	• HVDC and HVAC cables may be recovered and removed by pulling the cables through the ducts (e.g., for recycling). Otherwise, they will be left in place in the ground with the cable ends cut, sealed and securely buried as a precautionary measure.
	• Cable ducts, joint bays and link boxes would be left in-situ, to minimise environmental disturbance.
Converter Stations	• If the operation of the converter stations does not continue beyond 50 years, they are to be decommissioned.
	• Decommissioning is likely to operate within the parameters identified for construction (i.e., any activities are likely to occur within construction working areas and to require no greater amount or duration of activity than assessed for construction).
Highways Improvements	• Highways improvements would not have a forecast end life and would not be decommissioned.

Study Area

1.1.8 The Environment Agency (EA) Catchment Data Explorer Mapping shows watercourses located within the study area are located within the North Devon and South West Transitional and Coastal (TraC) Management Catchments which alongside 10 additional Management Catchments form the South West Basin District.

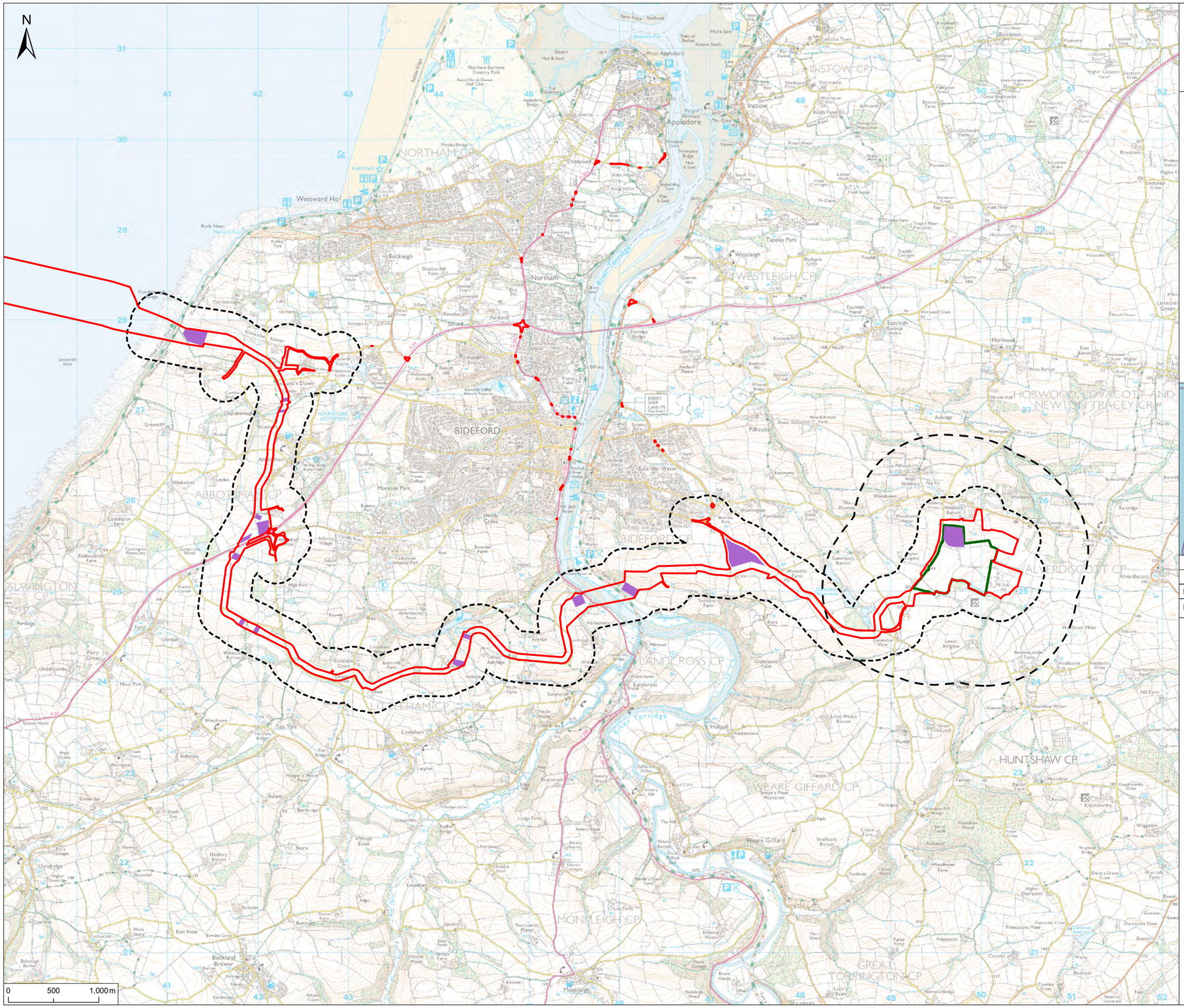
1.1.9 The study area, shown in **Figure 1.1**, is the zone of influence in relation to surface water and groundwater and takes into account the range of potential impacts arising from activities associated with the Proposed Development. The Zone of Influence (ZoI) is deemed appropriate by the impacts expected to arise from the Proposed Development. Based on the above, the hydrology study area is defined as:

- The area of land to be temporarily or permanently occupied during the construction, operation and maintenance, and decommissioning of the Proposed Development (including those parts of the Landfall situated landward of MLWS);
- Surface water and ground water receptors located within 1 km of the Converter Site;
- Surface water and ground water receptors within 250 m of the Onshore Infrastructure Area:
  - Landfall;
  - HVAC Cable Corridors;
  - Onshore HVDC Cable Corridor;
  - Highways improvements; and
  - temporary construction facilities (such as haul roads and construction compounds).

1.1.10 The buffers are considered appropriate for data collection taking into account the likely zone of influence by surface water and ground water receptors. The buffer has also been chosen to identify any existing receptors, assets or infrastructure that have the potential to be affected by temporary flood risk as a result of the Proposed Development.

1.1.11 The Proposed Development is linear and therefore presents hydrological challenges as it intersects several waterbodies and is located across several catchments. Due to the significant scale of the Proposed Development, it is vital that the potential impacts of the development on local waterbodies is assessed.

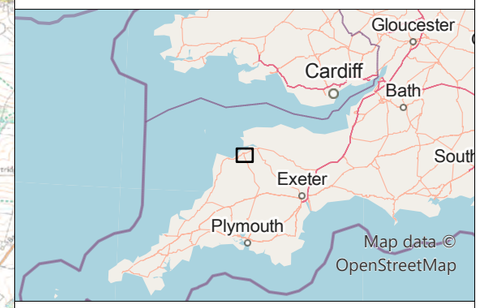
1.1.12 For the purpose of this onshore WFD assessment, water bodies that are within, are intersected or are hydrologically connected to the Onshore Infrastructure Area have been identified and considered as relevant water bodies.



Notes
1. This plan is scaled at paper size A3. If received electronically it is the recipients responsibility to print to the correct scale. Only written dimensions should be used.

Legend

- Order Limits
- Converter Site
- Construction Compound
- 250m Cable Route Buffer
- 1km Converter Site Buffer



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Client: Xlinks 1 Limited

Project: Xlinks' Morocco-UK Power Project

Title: Water Framework Directive Study Area

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Water Framework Directive

1.1.13 The WFD (Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000) is a European Union Directive which committed member states to achieve good qualitative and quantitative status of all water bodies by 2015. Under the Directive, water bodies are defined as all ground and surface waters, including rivers, lakes, transitional waters, and coastal waters (up to one nautical mile from shore).

1.1.14 The regulations require that the impacts of a project on biology, chemistry and hydromorphology are considered in relation to WFD status classes and are reported under a specific WFD section in any Environmental Statement or in a separate WFD compliance report (Environment Agency, 2010).

1.1.15 The WFD requires the prevention of deterioration and the protection enhancement, and restoration of all bodies of water. This means that new development should not adversely impact upon on the ability of a water body to achieve its environmental objectives.

1.1.16 It was not possible to achieve good status of all water bodies by 2015 and therefore the outstanding water bodies have objectives set for 2021 or 2027.

1.1.17 The WFD is transposed into law in England and Wales by The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (the 2017 Regulations). Under Section 2 of the European Union (Withdrawal) Act 2018, the 2017 Regulations continue to have effect in domestic law following the UK's withdrawal from the European Union.

1.1.18 The 2017 WFD Regulations provide the implementation of the WFD through the designation of all surface waters (rivers, lakes, transitional (estuarine) and coastal waters) and groundwaters as water bodies and the establishment of targets to achieve 'good' status.

Determination of Good Status

Surface Water

1.1.19 Good status is determined from the ecological and chemical status of surface waters. These statuses are assessed according to the following criteria:

- Biological quality (fish, benthic invertebrates, aquatic flora);
- Hydromorphological quality (e.g., riverbank structure, river continuity and substrate of the riverbed); and
- Physical-chemical quality (e.g., temperature, oxygenation, and nutrient conditions).

1.1.20 The chemical quality refers to environmental quality standards for river basin specific pollutants. These standards specify maximum concentrations for specific water pollutants. The WFD operates on a 'one out, all out' basis, so if one such concentration is exceeded, then the water body will not be classed as having a good status. The pure chemical status of surface waters is therefore classified as either good or fail with the physical-chemical quality indicators being classified as either high, good, moderate, poor, or bad.

1.1.21 The ecological status of surface waters is classified as being high, good, moderate, poor, or bad, whilst water bodies that have been modified (e.g., canals or contain significant flood defences) are classed as 'Heavily Modified Water Bodies' (HMWB) and have to reach at least good potential by their objective year.

Groundwater

1.1.22 The WFD stipulates that groundwater must achieve good quantitative status and good chemical status by their objective year. Groundwater bodies are classified as either good or poor. The quantity status considers elements such as impacts of saline intrusion, ability to serve groundwater and surface water abstractions, and ability to support groundwater dependent terrestrial ecosystems. The chemical status refers to the environmental quality standards for river basin specific pollutants and the priority substances specified under the WFD.

River Basin Management Plans

1.1.23 The WFD introduced River Basin Districts (RBDs) to better manage watercourses without administrative and political boundaries. Each river basin is managed to achieve at least good status according to RBMPs, which provide a clear indication of how the objectives set for the river basin are to be reached within the required timescale.

WFD Objectives

1.1.24 WFD Assessments are undertaken to demonstrate that proposed works (either at strategy level or detailed design/implementation stage) can be undertaken without impacting the status of water bodies or preventing future works to enable the water bodies to achieve good status/potential.

1.1.25 Determination of WFD compliance comprises a series of steps intended to establish the potential impacts of a development, at an appropriate level of detail, and then to examine whether the identified impacts contravene the conditions of the WFD.

1.1.26 The following assessment objectives (derived from the Environmental Objectives of the Directive) are used to determine whether the Proposed Development, in and around the water environment, which is affected by the Proposed Development, comply with the overarching objectives of the WFD:

- Objective 1: To prevent deterioration in the ecological status of the water body;
- Objective 2: To prevent the introduction of impediments to the attainment of good WFD status for the water body;
- Objective 3: To ensure that the attainment of the WFD objectives for the water body are not compromised; and
- Objective 4: To ensure the achievement of the WFD objectives in other water bodies within the same catchment are not permanently excluded or compromised.

WFD Assessment Stages

1.1.27 The WFD surface water and groundwater assessment draws upon a number of other disciplines in determining the potential impact to the environmental

objectives of the water bodies that have the potential to be impacted. These will include hydrology and water quality, terrestrial and aquatic ecology, Habitat Regulations Assessment and hydrogeology.

1.1.28 To achieve the aims outlined within **paragraph 1.1.26**, a staged approach has been adopted in undertaking the WFD compliance assessment in accordance with the WFD and the Planning Inspectorate Advice: Water Framework Directive (Planning Inspectorate, 2024).

1.1.29 The WFD compliance assessment is typically undertaken in three stages.

1. **Screening –** excludes any activities that do not need to go through the scoping or impact assessment stages.
2. **Scoping –** identifies the receptors that are potentially at risk from the activity and need impact assessment.
3. **Impact assessment –** considers the potential impacts of the activity, identifies ways to avoid or minimise impacts, and shows if the activity may cause deterioration or jeopardise the water body achieving good status.

1.1.30 A flow chart, taken from the Planning Inspectorate Advice for assessing activities and projects for compliance with the WFD (Planning Inspectorate, 2024) has been included below in **Plate 1.1**. This provides an overview of the recommended process to address the WFD during the pre-application process.

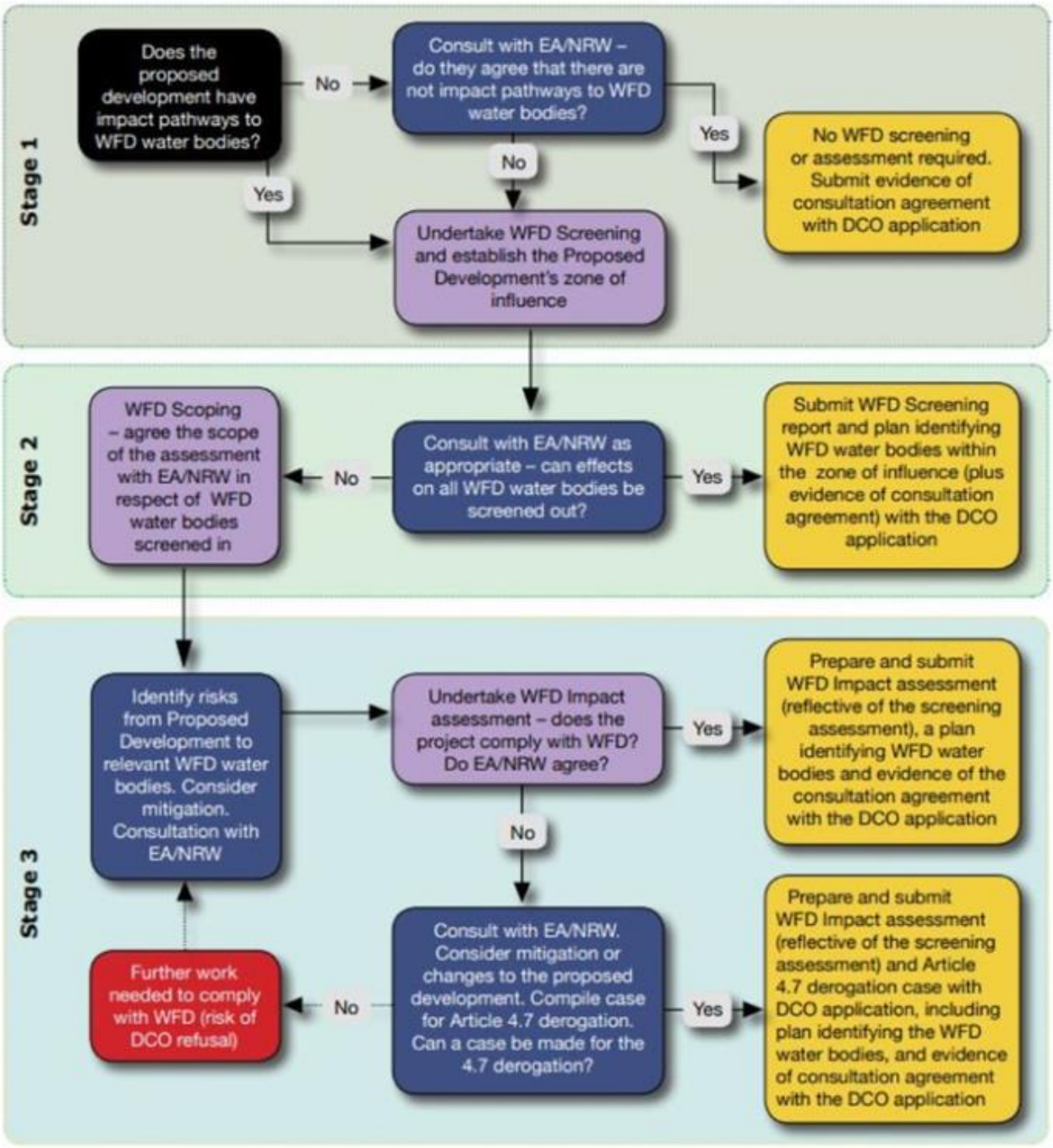


Plate 1.1: Flow chart illustrating the WFD compliance assessment process

Stage 1 - Screening assessment

1.1.31 The screening assessment has been completed and is presented within this report. The screening assessment identifies the WFD water bodies within the zone of influence of the Proposed Development. Each component of the Proposed Development (onshore) has been reviewed in terms of its potential to impact to the water environment (i.e., on surface and groundwater bodies).

Stage 2 - Scoping assessment

1.1.32 The WFD scoping assessment will identify links between the proposed onshore activities and each WFD quality element that could be affected. It is also necessary at this stage to consider the proposed activities and how they could affect the morphological mitigation measures for waterbodies, where applicable.

1.1.33 The scoping phase involves considering each WFD quality element to identify those (if any) where a possible causal link exists. That is, where water body status or environmental objectives could potentially be affected at a water body level by the proposed activities.

1.1.34 Each activity type is examined based on the maximum design scenario. Where potential impacts from proposed activities exist, they will be scoped into the assessment and mitigation measures highlighted for further development as design progresses.

1.1.35 Note that the scoping assessment for transitional (Taw / Torridge) and coastal water bodies (Barnstaple Bay) follows the EA Guidance, 'Clearing the Waters for All' (Environment Agency, 2017). The scoping template contained in Appendix B of this guidance has been used for these water bodies.

Stage 3 - Impact assessment

1.1.36 A detailed impact assessment examines the potential residual impact on water bodies (including cumulative impacts), suggesting further mitigation measures and enhancements where appropriate.

1.1.37 Within the context of the Proposed Development, the WFD assessment provides the opportunity to inform detailed design by avoiding, minimising, mitigating and compensating risks to WFD surface water and groundwater receptors where the risk assessment determined that the proposed activities may have potential impacts.

1.1.38 The detailed assessment also considers whether the scheme will contribute to the delivery of the relevant River Basin Management Plan, i.e., the South West River Basin Management Plan, 2022.

1.2 Assessment Methodology

1.2.1 Based upon the requirements of the EA, in regard to authorisation of activities which may impact the water environment, a WFD screening assessment has been undertaken at this stage. This assessment has been undertaken using the following methodology:

- Identification of the water bodies within and in close proximity to the Proposed Development.
- Collection of baseline data to identify the current status as well as future baseline and ability of the water bodies within and in close proximity to the Proposed Development to meet the WFD objectives.
- Assessment of the potential impacts to the identified surface water bodies; this involves identifying the impacts that could improve the WFD status and/or affect the ability of the water bodies to meet the objectives of the WFD.

Data Sources

1.2.2 Information on Surface water and ground water within the study area was collected through a detailed review of existing studies and datasets. These are summarised in **Table 1.2** below.

Table 1.2: Summary of desk study sources used

Title	Source	Year	Author
BGS Geology Viewer	https://geologyviewer.bgs.ac.uk/?_ga=2.60345197.172764960.1660052920-1090504202.1660052920	2024	British Geological Survey (BGS)
1:25,000 mapping	https://www.bing.com/maps	2023	Ordnance Survey (OS)
Catchment Data Explorer	https://environment.data.gov.uk/catchment-planning/	2023	EA
Multi-Agency Geographic Information for the Countryside (MAGIC) mapping	https://magic.defra.gov.uk	2023	DEFRA
Shoreline Management Plan	https://environment.data.gov.uk/shoreline-planning	2024	EA
South West River Basin District River Basin Management Plan	https://www.gov.uk/guidance/south-west-river-basin-district-river-basin-management-plan-updated-2022	2022	EA
Soilscapes Viewer	http://www.landis.org.uk/soilscapes/	2023	The National Soils Research Institute

Consultation

1.2.3 A summary of the key items raised specific to surface water and ground water is presented in **Table 1.3**, together with how these issues have been considered in the production of this report.

Table 1.3: Consultation responses

Consultee and Type of Response	Issues raised	Response to issue and/or where considered in this technical report
S42 comment – EA (June 2024)	Volume 2 Appendix 3.2 Preliminary Onshore WFD Assessment Issue - Possible typographic error - use of incorrect terminology "Assess the presence of invasive species and implement measures to promote their eradication and introduction." Impact - Confusion, appears to imply that INNS will be introduced Solution - Redraft text to reflect true meaning	Noted. Text has been amended.
S42 comment – EA (June 2024)	Volume 2 Appendix 3.2 Preliminary Onshore WFD Assessment Issue - The current proposal to leave the landfall ducting in place at decommissioning may result in the infrastructure becoming exposed in the future due to natural processes.	Noted. A commitment to produce an onshore decommissioning plan(s) in accordance with the Outline Decommissioning Strategy (document reference 7.17) inclusive of appropriate

Consultee and Type of Response	Issues raised	Response to issue and/or where considered in this technical report
	Impact - Unsightly exposed ducting that may interfere with natural coastal processes. Solution - Include a commitment that, prior to decommissioning, available technologies are reviewed and the possibility of removal of ducting and backfill of drill lines is assessed. Local geology, intended drilling depth and water depth of breakout may be sufficient to mitigate this possible impact.	assessments has been included in **Table 1.10**.

Potential Impacts

1.2.4 A review of the proposed works and the potential impacts to the identified surface water and groundwater bodies has been undertaken by identifying the impacts that could improve or reduce the WFD status or affect the ability of the water bodies to meet the objectives of the WFD.

1.2.5 The following factors have been considered when determining whether the potential effects of the Proposed Development are likely to lead to an improvement/reduction in status or impact on objectives being met:

- Whether the impact is temporary (such as short-term construction impacts) or permanent/long term.
- The characteristics and sensitivity of the specific water features affected by the Proposed Development (which may be different to the designated WFD water body).
- The scale and importance of the specific water features affected by the Proposed Development to the designated WFD water body.
- The nature, scale, and extent of potential impact in the context of the existing pressures and proposed measures for the water body.

Limitations of the Assessment

1.2.6 The assessment has been undertaken assuming the maximum design scenario, however, in order to ensure the assessment captures the specific likely affects arising from the development, full details are required on the proposed construction techniques to be used. This is particularly relevant for the proposed crossing points. At this point a conservative assessment has been undertaken based on the maximum design scenario.

1.2.7 A further cycle of WFD data was released in 2022, however this has not been released for all waterbodies. Therefore, some of the data used in the assessment may not be reflective of the current situation. Once the updated data is released it would further help inform the baseline environment.

1.3 Stage 1 – Baseline Assessment - Screening

1.3.1 The surface water bodies within and in close proximity to the Proposed Development include:

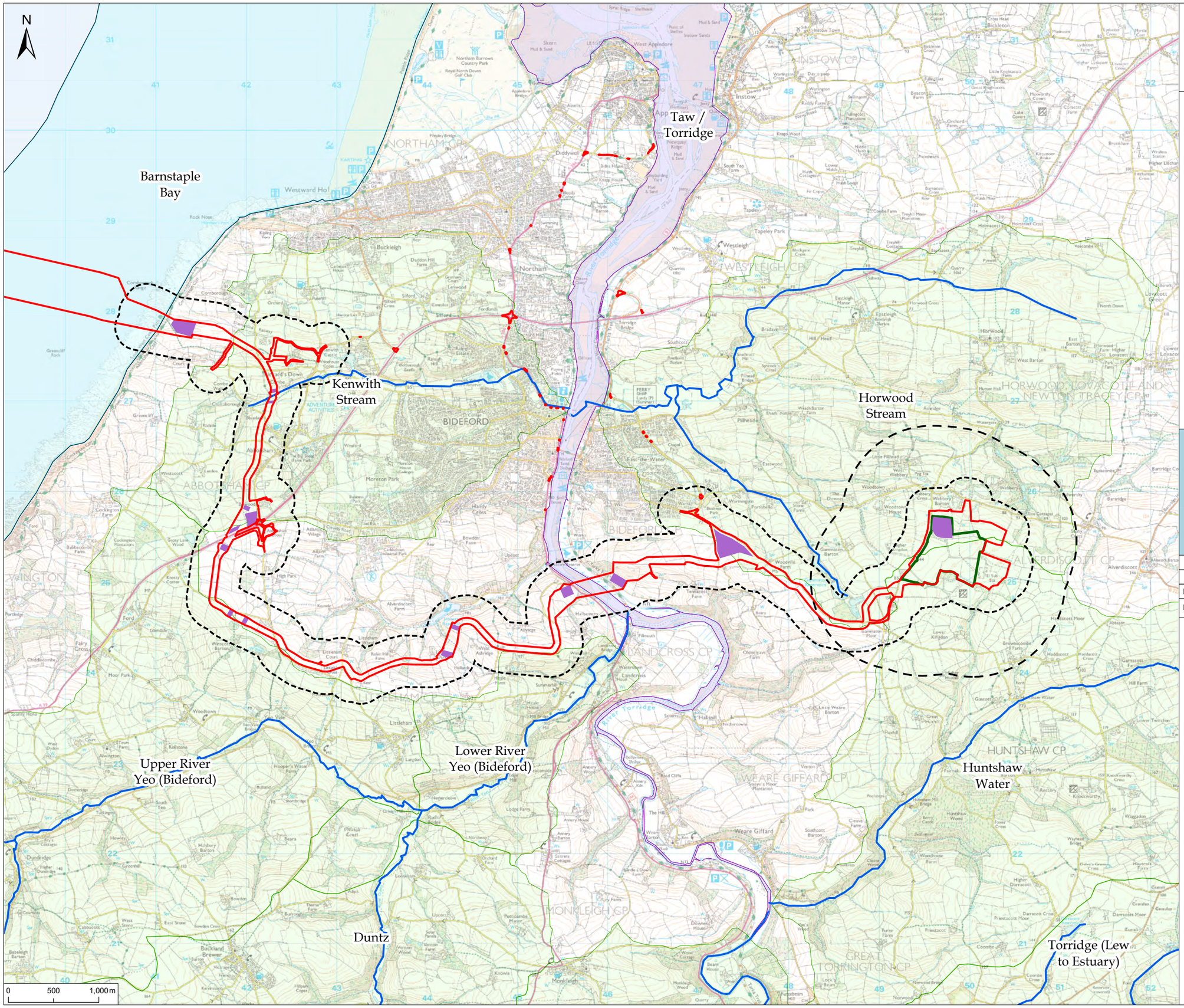
- Barnstaple Bay (ID: GB610807680003);
- Kenwith Stream (ID: GB108050014500);
- Upper River Yeo (Bideford) (ID: GB108050014470);
- Lower River Yeo (Bideford) (ID: GB108050014400);
- Taw/Torridge (ID: GB540805015500);
- Horwood Stream (ID: GB108050014510);
- Huntshaw Water (ID: GB108050014440);
- Gammaton Lower Reservoir (ID: GB30844781); and
- Gammaton Upper Reservoir (ID: GB30844798).

1.3.2 The groundwater bodies located within and in close proximity to the Proposed Development include:

- Torridge and Hartland Streams (ID: GB40802G800600).

1.3.3 The waterbodies within the vicinity of the development are shown in the following figures:

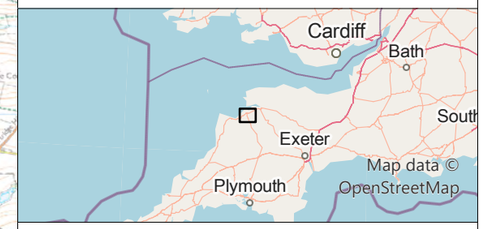
- **Figure 1.2**: Water Framework Directive river, coastal and transitional water body catchments.
- **Figure 1.3**: Water Framework Directive lake water body catchments.
- **Figure 1.4**: Water Framework Directive groundwater water body catchments.



Notes
1. This plan is scaled at paper size A3. If received electronically it is the recipients responsibility to print to the correct scale. Only written dimensions should be used.

Legend

- Order Limits
- Converter Site
- Construction Compound
- 250m Cable Route Buffer
- 1km Converter Site Buffer
- WFD River Water Bodies Cycle 3
- WFD River Water Body Catchments Cycle 3
- WFD Transitional Water Bodies Cycle 3
- WFD Coastal Water Bodies Cycle 3



Rev	Description	By	CB	Date
P01	FINAL	SHB	MB	14.10.24

Client: Xlinks 1 Limited

Project: Xlinks' Morocco-UK Power Project

Title: Water Framework Directive River, Coastal, and Transitional Waterbody Catchments

Status: FINAL

Scale @ A3: 1:40,000

Date Created: Nov 2024

Figure Number: **1.2**

Rev: **P01**

www.xlinks.co

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N

Gammaton Lower Reservoir

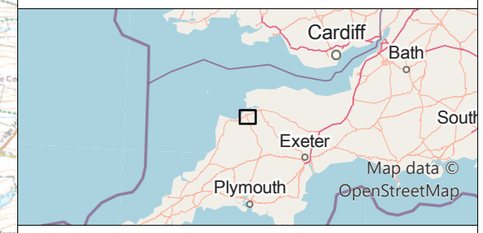
Gammaton Upper Reservoir

0 500 1,000m

Notes
1. This plan is scaled at paper size A3. If received electronically it is the recipients responsibility to print to the correct scale. Only written dimensions should be used.

Legend

- Order Limits
- Converter Site
- Construction Compound
- 250m Cable Route Buffer
- 1km Converter Site Buffer
- WFD Lake Water Bodies Cycle 3



Rev	Description	By	CB	Date
P01	FINAL	SHB	MB	14.10.24

Client: Xlinks 1 Limited

Project: Xlinks' Morocco-UK Power Project

Title: Water Framework Directive Lake Waterbody Catchments

Status: FINAL

Scale @ A3: 1:40,000

Date Created: Nov 2024

Figure Number: **1.3**

Rev: **P01**

www.xlinks.co

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N

River Taw and North Devon Streams

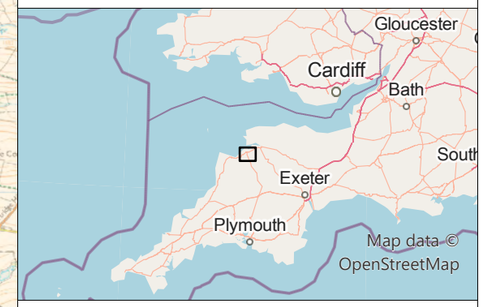
Torridge and Hartland Streams

0 500 1,000 m

Notes
1. This plan is scaled at paper size A3. If received electronically it is the recipients responsibility to print to the correct scale. Only written dimensions should be used.

Legend

- Order Limits
- Converter Site
- Construction Compound
- 250m Cable Route Buffer
- 1km Converter Site Buffer
- WFD Groundwater Bodies Cycle 3



Rev	Description	By	CB	Date
P01	FINAL	SHB	MB	14.10.24

Client: Xlinks 1 Limited

Project: Xlinks' Morocco-UK Power Project

Title: Water Framework Directive Groundwater Waterbody Catchments

Status: FINAL

Scale @ A3: 1:40,000

Date Created: Nov 2024

Figure Number: **1.4**

Rev: **P01**

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WFD Screening

1.3.4 The purpose of the WFD screening stage is to identify a zone of influence of the Proposed Development and to determine whether that influence has the potential to adversely impact upon WFD water body receptors.

1.3.5 The screening stage identifies the specific activities that could affect the water bodies WFD status.

1.3.6 Water bodies and receptors that are screened out are not carried forward, and the justification is provided for these.

Screening of WFD Waterbodies

1.3.7 Watercourses which may be affected by the development were screened based upon the criteria outlined in **Table 1.4** below, which was developed using professional experience and judgement. At this stage in the process, a conservative approach has been taken to scoping in watercourses. Once more detailed design information and survey information is available, it may be pertinent to scope out some watercourses.

1.3.8 Due to the nature of the waterbodies mentioned above, and the criteria in **Table 1.4**, all waterbodies are scoped into the assessment.

Table 1.4: Screening criteria for WFD watercourses

Watercourse Category	Criteria	Screening Outcome	Receptor Value
No channel present	No evidence of presence of surface water feature (no defined channel present or evidence of historical channel but is now in filled)	Out	N/A
Channel with no baseflow* / Minor Tributary	Ordinary Watercourse Minor tributary (within WFD water body catchment). Artificially created drainage channel or small natural headwater or ephemeral channel. Channel with little or no baseflow. Absence of flowing water for majority of year / limited connection to water table (potential to dry out). Shallow, ponded water present at times. No regular fluvial geomorphological processes or features present. Low potential to support freshwater fish, macroinvertebrate, and/or macrophyte species. Riparian zone typically impacted by land use / regular vegetation management. Low overall aquatic habitat and hydromorphological value.	Out	Low
Channel with limited baseflow** / Moderate Tributary	Ordinary Watercourse or Main River that is a tributary of the WFD water body main river line. Moderate tributary (within WFD water body catchment). Artificially created drainage channel or small natural channel. Channel with limited baseflow. Typically, shallow low flows. Non-definable morphological flow types, except in localised and isolated reaches. Limited and discrete active fluvial geomorphological processes and features. Limited potential to support freshwater fish, macroinvertebrate, and/or macrophyte species. Riparian zone may be impacted by land use / regular vegetation management in some cases. Moderate overall aquatic habitat and hydromorphological value.	In	Channel with limited baseflow** / Moderate Tributary
Channel with limited baseflow** / Moderate Tributary within a Sensitive Area	As above. Located within an area Designated SSSI, SAC or SPA.	In	Channel with limited baseflow** / Moderate Tributary within a Sensitive Area

Watercourse Category	Criteria	Screening Outcome	Receptor Value
"Modified' channel with permanent baseflow*** / Primary Watercourse	Main River or a significant Ordinary Watercourse. WFD water body main river line. Modified natural channel with permanent baseflow. Likely designated as Heavily Modified Water Body (HMWB) under WFD. Definable flow types (but diversity impacted by modifications). Active fluvial geomorphological processes and features (but functionality and diversity impacted by modifications). Potential to support some freshwater fish, macroinvertebrate, and/or macrophyte species (but habitat value impacted by modifications). Riparian zone typically impacted by land use / regular vegetation management. Aquatic habitat and hydromorphological potential (but currently restricted by modifications).	In	High
"Functioning' channel with permanent baseflow*** / Primary Watercourse within a sensitive area	As above. Located within an area Designated SSSI, SAC or SPA.	In	Very High

* Sites typically assessed has having Q95 (the 5 percentile, low flow) flow ≤0.002m^3/s

** Sites typically assessed has having Q95 flow >0.002m^3/s to ≤0.01m3/s

*** Sites typically assessed has having Q95 flow >0.01m^3/s

Screening of Potential Impacts

1.3.9 It is necessary to identify links between the proposed activity and every quality element that could be affected. It is also necessary at this stage to consider activities and how they affect the morphological mitigation measures for those waterbodies, where applicable.

1.3.10 For all activities, the scoping phase involves considering each WFD quality element to identify all those where a possible causal link exists. That is, where water body status or objectives could be affected at water body level by the proposed activities.

1.3.11 The scoping assessment has been applied for each activity type based on the maximum design scenario outlined in **section 1.4**. The potential impact for each activity is provided below which has informed the selection of the activities which will be scoped into the assessment.

1.3.12 For the purpose of this assessment, it is considered that open cut trenching will result in largest compound footprint and largest area of disturbance (compared to HDD). This represents the maximum design scenario in terms of potential for runoff, spillage and direct disturbance to water bodies (where present). However, HDD or alternative trenchless techniques will be used to intersect waterbodies.

1.3.13 In terms of areas affected by the Proposed Development, the maximum design scenario is represented by the largest working areas and number of trenches, which arise from the construction of the Proposed Development.

1.3.14 The below key impacts have been identified:

- Habitat Disturbance and Impact on Hydromorphological condition of waterbodies.
- Shading of Waterbodies.
- Impact of Pollution from Accidental Spills/Contaminant Release.
- Increase in Suspended Sediments.

1.3.15 The potential impacts screened out of the WFD assessment are detailed within **Table 1.5**, along with justification.

Table 1.5: Screening for key impacts

Potential Impact	Screened In/Out	Justification
Construction		
Temporary dewatering to enable construction	Out	The construction of the Proposed Development would adhere to best practice methods, including measures to avoid and/or minimise disturbance of the water environment. Site investigation and monitoring would also be implemented before, during and after dewatering and excavation activities, in order to protect the integrity of nearby surface water features. Relevant mitigation measures are detailed within the Outline Onshore Construction Environmental Management Plan (On-CEMP) (document reference 7.7) and the Outline Pollution Prevention Plan (document reference 7.7, Appendix A), which are provided as part of the application for development consent.
Footprint (e.g. the area of channel impacted by works in the vicinity of the channel)	Out	The construction of the Proposed Development will adhere to best practice methods which include measures to avoid and/or minimise disturbance to the water environment. Relevant mitigation measures are detailed within the Outline On-CEMP (document reference 7.7) and the Outline Pollution Prevention Plan (document reference 7.7, Appendix A), which are provided as part of the application for development consent.
Pollution risk and altered drainage patterns from general construction activities	Out	The construction of the Proposed Development will adhere to best practice method statements which include measures to avoid and/or minimise disturbance to the water environment. Construction activities will be temporary in nature. Relevant mitigation measures are detailed within the Outline On-CEMP (document reference 7.7) and the Outline Pollution Prevention Plan (document reference 7.7, Appendix A), which are provided as part of the application for development consent.
Creating or altering of pathways along which existing poor quality groundwater can migrate	Out	The construction of the Proposed Development will adhere to best practice method statements which include measures to avoid and/or minimise disturbance to the water environment. Construction activities will be temporary in nature. Relevant mitigation measures are detailed within the Outline On-CEMP (document reference 7.7) and the Outline Pollution Prevention Plan (document reference 7.7, Appendix A), which are provided as part of the application for development consent.
Operation		
Footprint (e.g. the area of channel impacted by works in the vicinity of the channel)	In	The design of the Proposed Development has sought to reduce the length of impacted river channel as far as reasonably practicable. However, scheme components will result in a localised loss of existing river channel habitat.
Shading due to the presence of a structure	Out	An 8 m buffer will be maintained between the banks of ordinary watercourses, Main Rivers and temporary and permanent development associated with the Proposed Development. Due to the nature of the Proposed Development, it is unlikely that any further shading may occur.

Potential Impact	Screened In/Out	Justification
Pollution risks discharging to surface water body	Out	The design of the Proposed Development would adhere to best practice method statements, including measures to appropriately manage surface water and sediment runoff prior to discharge to the watercourse. The drainage strategy has ensured the incorporation of suitable drainage systems (including balancing ponds) to intercept, attenuate and discharge runoff from the highway and other proposed infrastructure in a manner that will not significant adversely impact upon the existing water quality of receiving watercourse.
Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	In	The Proposed Development has sought to reduce hydromorphological impacts as far as reasonably practicable by minimising any in-channel works. Horizontal Directional Drilling (HDD) (or other trenchless techniques) is to be used to cross Kenwith Stream, River Torridge, Jennets Reservoir Tributary and the shingle bar at Cornborough Range. Where a surface watercourse (ordinary watercourses and EA Main Rivers) is to be crossed by HDD (or other trenchless technique), the anticipated crossing depth underneath watercourses is as follows: • 5 m for Kenwith Stream; • 9 m for the tributary of Jennets Reservoir; and • 15 m for the River Torridge. The trenchless crossing depth for all other watercourse crossings is to be ascertained at detailed design stage and a factor of safety incorporated within engineering calculations to account for climate change impacts to peak watercourse flows and rates of incision. Where required, trenched techniques may be used for minor ditches or smaller watercourses that are frequently dry. In these cases, measures will be implemented to protect water quality and flow and these will be detailed within the Outline On-CEMP (document reference 7.7), however, this may lead to some changes to hydromorphology.

Baseline Conditions

Geology and Hydrology

1.3.16 British Geological Survey (BGS) online mapping (1:50,000 scale) indicates that the Onshore Infrastructure Area is situated on a variety of intermittent bed rock geology, consisting of the following:

- Superficial Deposits – Torridge River Terrace Deposits, 1 member (gravel, sand and silt) is only present around the banks of the River Torridge, at the location where the Onshore HVDC Cable Corridor crosses this section (British Geological Survey, 2022a).
- Bideford Formation – Sandstone.
- Crackington Formation – Mudstone and siltstone.
- Bude Formation – Mudstone and Siltstone.
- Bude Formation – Sandstone.

1.3.17 The BGS borehole logs indicate that there are no borehole records within the vicinity of the Onshore Infrastructure Area (British Geological Survey, 2022a).

1.3.18 The soils for the cable corridor are described as the following by the National Soils Research Institute.

- Freely draining acid loamy soils over rock.
- Freely draining slightly acid loamy soils.
- Slowly permeable seasonally wet acid loamy and clayey soils.
- Freely draining slightly acid loamy soils.

1.3.19 The superficial deposits are indicated to be Secondary A and Secondary Undifferentiated aquifers. The Bedrock is a Secondary A Aquifer.

1.3.20 EA online groundwater Source Protection Zone (SPZ) mapping indicates that the Onshore Infrastructure Area is not located within a groundwater SPZ.

South West River Basin District

1.3.21 The Proposed Development is located within the overarching South West RBD, which covers 21,000 km^2. The RBD comprises nine management catchments, 37 surface water operational catchments and contains 735 water bodies.

1.3.22 In 2019, 100% of the district's water bodies were classified as fail for chemical status and 21% of the district's water bodies were assessed as being in good or better condition for ecological status.

1.3.23 The RBMP system provides a catchment-based approach to managing water bodies, in accordance with the WFD.

WFD Classification by Water body

1.3.24 The WFD runs in 6-year cycles, and is currently within the third cycle, which runs from 2022- 2027. The Cycle 3 interim classification will be available in 2024, however a classification update was published in 2022. This data set is

incomplete, therefore, to provide a holistic picture of water body classification, 2022 data will be presented alongside the 2019 Cycle 2 data.

1.3.25 It should also be noted, for the 2019 chemical status assessment, methods and evidence base were updated. Due to this change, all waterbodies now fail chemical status and cannot be compared to previous years.

1.3.26 The water bodies within and in close proximity to the Proposed Development are listed in **Table 1.6** below. Details of the waterbodies are included as **Annex A.** The below provides summary details of monitored surface water bodies.

Table 1.6: WFD Water Bodies

Name (WFD ID)	Management Catchment	Operational Catchment	Waterbody type
Barnstaple Bay (ID: GB610807680003)	South West TraC	Barnstaple Bay	Coastal
Taw/Torridge (ID: GB540805015500)	South West TraC	Taw and Torridge Estuary	Transitional
Kenwith Stream (ID: GB108050014500)	North Devon	Torridge	River
Upper River Yeo (Bideford) (ID: GB108050014470)	North Devon	Torridge	River
Lower River Yeo (Bideford) (ID: GB108050014400)	North Devon	Torridge	River
Horwood Stream (ID: GB108050014510)	North Devon	Torridge	River
Huntshaw Water (ID: GB108050014440)	North Devon	Torridge	River
Gammaton Lower Reservoir (ID: GB30844781)	North Devon	Torridge	River
Gammaton Upper Reservoir (ID: GB30844798)	North Devon	Torridge	River
Torridge and Hartland Streams (ID: GB40802G800600)	South West GW	Torridge and Hartland Streams	Groundwater

Barnstaple Bay

1.3.27 Barnstaple Bay is a large area of water off the northwest coast of Devon. The bay extends from Baggy Point in the northeast to Hartland Point in the south west. Barnstaple Bay is classified as a Coastal water, therefore the EA is responsible for the maintenance, improvement, or construction to manage risks to the water body.

1.3.28 Barnstaple Bay is located within the South West River Basin District, in South West TraC Management Catchment. It is part of the Barnstaple Bay Operational Catchment.

1.3.29 Barnstaple Bay is monitored as part of the WFD classifications. The Barnstaple Bay Catchment comprises a surface area of approximately 111 km^2. The Landfall is located immediately adjacent to Barnstaple Bay.

1.3.30 Barnstaple Bay is classified as a coastal water and not designated as artificial or heavily modified. The overall classification is 'Moderate' with 'Good' ecological status and 'Fail' chemical status for Cycle 2 (2019). The Cycle 3 (2022) data

indicates 'Moderate' ecological status. Chemical status has not been assessed. A summary is provided in **Annex A**.

1.3.31 The Mermaid's Pool to Rowden Gut SSSI is located within Barnstaple Bay. The North Devon Biosphere Reserve is also located within Barnstaple Bay.

1.3.32 EA data regarding reasons for not achieving good indicate that the presence of 'Polybrominated diphenyl ethers (PBDE)' and 'Mercury and Its Compounds' are the key contributors. No specific activity or sector have been deemed responsible. This is likely due to the sources and pathways for both elements, as often they are released from combustion and consumer products.

Kenwith Stream

1.3.33 Kenwith Stream rises near Abbotsham, and flows in an easterly direction towards the River Torridge. The catchment extends from the east of Abbotsham to Bideford adjacent to the River Torridge. Kenwith Stream is classified as an ordinary watercourse, therefore the LLFA is responsible for the maintenance, improvement, or construction to manage risks to the water body.

1.3.34 Kenwith Stream is located within the South West River Basin District, in the North Devon Management Catchment. It is part of the Torridge Operational Catchment.

1.3.35 Kenwith Stream is monitored as part of the WFD classifications. The Kenwith Stream Catchment comprises an area of approximately 10.8 km^2. A section of the proposed Onshore HVDC Cable Corridor passes through the catchment.

1.3.36 Kenwith Stream is classified as a river and not designated as artificial or heavily modified. The overall classification is 'Moderate' with 'Moderate' ecological status and 'Fail' chemical status for Cycle 2 (2019). The Cycle 3 (2022) data indicates 'Moderate' ecological status. Chemical status has not been assessed. A summary is provided in **Annex A**.

1.3.37 The Kenwith Valley Local Nature Reserve is located within the Kenwith Stream catchment.

1.3.38 EA data regarding reasons for not achieving 'Good' indicate that the following elements are responsible:

- Phosphates due to 'poor soil management', 'poor nutrient management' and 'poor livestock management' from agriculture and rural land management, and 'sewage discharge (continuous)' from the water industry;
- Macrophytes and Phytobenthos Combined due to 'poor livestock management' from agriculture and rural land management, and 'sewage discharge (continuous)' from the water industry
- The presence of 'PBDE' and 'Mercury and Its Compounds', no specific activity or sector have been deemed responsible.

Upper River Yeo (Bideford)

1.3.39 The River Yeo rises in two branches near Cranford and Melbury, and flows in an easterly direction. The catchment extents from Cranford and Melbury, across to Abbotsham in the north and Littleham in the east. Upper River Yeo (Bideford) is classified as an ordinary watercourse, therefore the LLFA is responsible for the maintenance, improvement, or construction to manage risks to the water body.

1.3.40 Upper River Yeo (Bideford) is located within the South West River Basin District, in North Devon Management Catchment. It is part of the Torridge Operational Catchment.

1.3.41 Upper River Yeo (Bideford) is monitored as part of the WFD classifications. The Upper River Yeo (Bideford) Catchment comprises an area of approximately 25 km^2. A section of the proposed Onshore HVDC Cable Corridor passes through the catchment.

1.3.42 Upper River Yeo (Bideford) is classified as a river and not designated as artificial or heavily modified. The overall classification is 'Poor' with 'Poor' ecological status and 'Fail' chemical status for Cycle 2 (2019). The Cycle 3 (2022) data indicates 'Poor' ecological status. Chemical status has not been assessed. A summary is provided in **Annex A**.

1.3.43 EA data regarding reasons for not achieving 'Good' indicate that the following elements are responsible.

- Phosphates due to 'poor nutrient management' from agriculture and rural land management, and 'sewage discharge (continuous)' from the water industry.
- Macrophytes and Phytobenthos Combined due to 'poor nutrient management' from agriculture and rural land management, and 'sewage discharge (continuous)' from the water industry.
- The presence of 'PBDE' and 'Mercury and Its Compounds', no specific activity or sector have been deemed responsible.
- The Jennetts Reservoir Nitrate Vulnerable Zone (NVZ) is located within the Upper River Yeo (Bideford) catchment. Jennetts Reservoir (EA, 2016) is described as '*an impounded, moderate alkalinity, shallow reservoir that functions as a natural lake. This reservoir is run as a 7 acre coarse fishery by South West Lakes Trust, but no longer serves public water supply*.' It is indicated that the stream has sources of one small stream and surface water runoff. The catchment for the reservoir has a significant amount of farming, there are reported to be 6/7 farms including at least one large dairy farm, and surface water runoff from industrial estates may also contribute to nutrient levels. The reservoir is designated as an existing eutrophic water. Nitrogen levels are above the threshold and biological elements show that they are impacted by the high nutrient levels. Due to the location of the Jennetts Reservoir NVZ, it is likely that the Upper River Yeo (Bideford) will discharge into this zone.

Lower River Yeo (Bideford)

1.3.44 The River Yeo rises in two branches near Cranford and Melbury, and flows in an easterly direction. The catchment extends from Littleham in the west to Landcross in the east. Lower River Yeo (Bideford) is classified as an ordinary watercourse, therefore the LLFA is responsible for the maintenance, improvement, or construction to manage risks to the water body.

1.3.45 Lower River Yeo (Bideford) is located within the South West River Basin District, in North Devon Management Catchment. It is part of the Torridge Operational Catchment.

1.3.46 Lower River Yeo (Bideford) is monitored as part of the WFD classifications. The Lower River Yeo (Bideford) Catchment comprises an area of approximately 4.2 km^2. A section of the proposed cable route passes through the catchment.

1.3.47 Lower River Yeo (Bideford) is classified as a river and not designated as artificial or heavily modified. The overall classification is 'Moderate' with 'Moderate' ecological status and 'Fail' chemical status for Cycle 2 (2019). The Cycle 3 (2022) data indicates 'Moderate' ecological status. Chemical status has not been assessed. A summary is provided in **Annex A**.

1.3.48 No sites designated as ecologically significant are located within the Lower River Yeo (Bideford) catchment.

1.3.49 EA data regarding reasons for not achieving 'Good' indicate that the following elements are responsible.

- Phosphates due to 'poor nutrient management' from agriculture and rural land management, and 'sewage discharge (continuous)' from the water industry.
- Macrophytes and Phytobenthos Combined due to 'poor nutrient management' from agriculture and rural land management, and 'sewage discharge (continuous)' from the water industry.
- The presence of 'PBDE' and 'Mercury and Its Compounds', no specific activity or sector have been deemed responsible.
- The Jennetts Reservoir NVZ is located within the Lower River Yeo (Bideford) catchment. Jennetts Reservoir is described as '*an impounded, moderate alkalinity, shallow reservoir that functions as a natural lake (EA, 2016). This reservoir is run as a 7 acre coarse fishery by South West Lakes Trust, but no longer serves public water supply*.' It is indicated that the stream has sources of one small stream and surface water runoff. The catchment for the reservoir has a significant amount of farming, there are reported to be 6/7 farms including at least one large dairy farm, and surface water runoff from industrial estates may also contribute to nutrient levels. The reservoir is designated as an existing eutrophic water. Nitrogen levels are above the threshold and biological elements show that they are impacted by the high nutrient levels. Due to the location of the Jennetts Reservoir NVZ, it is likely that the Lower River Yeo (Bideford) will discharge into this zone.

Taw/Torridge

1.3.50 The Taw/Torridge Water Body catchment extends from the east, near to Tawstock and to the south, near to Weare Giffard, and joins the bay near to Yelland. The Taw/Torridge is classified as a main river, therefore, the EA is responsible for the maintenance, improvement, or construction to manage risks to the water body.

1.3.51 Taw/Torridge Transitional Water body is located within the South West River Basin District, in South West TraC Management Catchment. It is part of the Taw and Torridge Estuary Operational Catchment.

1.3.52 The Taw/Torridge Water body is monitored as part of the WFD classifications. The Catchment comprises an area of approximately 14.4 km^2. A section of the proposed Onshore HVDC Cable Corridor passes through the catchment.

1.3.53 Taw/Torridge is classified as a transitional water and is designated as heavily modified. The overall classification is 'Moderate' with 'Moderate' ecological status and 'Fail' chemical status for Cycle 2 (2019). The Cycle 3 (2022) data indicates 'Moderate' ecological status. Chemical status has not been assessed. A summary is provided in **Annex A**.

1.3.54 The Taw-Torridge Estuary SSSI is located within the Taw/Torridge Water Body catchment.

1.3.55 EA data regarding reasons for not achieving 'Good' status indicate that the following elements are responsible:

- dissolved inorganic nitrogen due to 'poor soil management', 'poor nutrient management' and 'poor livestock management' from agriculture and rural land management, and 'sewage discharge (continuous)' and 'sewer discharge (intermittent)' from the water industry, and septic tanks; and
- the presence of 'Benzo(g-h-i)perylene', 'PBDE' and 'Mercury and Its Compounds', no specific activity or sector have been deemed responsible.

Horwood Stream

1.3.56 Horwood Stream extends from the east of Horwood and north of Greatwood and flows to west to the River Torridge. Horwood Stream is classified as an ordinary watercourse, therefore the LLFA is responsible for the maintenance, improvement, or construction to manage risks to the water body.

1.3.57 Horwood Stream is located within the South West River Basin District, in North Devon Management Catchment. It is part of the Torridge Operational Catchment.

1.3.58 Horwood Stream is monitored as part of the WFD classifications. The Horwood Stream Catchment comprises an area of approximately 18 km^2. A section of the Onshore Infrastructure Area is situated within the catchment of Horwood Stream.

1.3.59 Horwood Stream is classified as a river and not designated as artificial or heavily modified. The overall classification for Cycle 2 (2019) is 'Moderate' with a 'Moderate' ecological potential and 'Fail' chemical status. A summary is provided in **Annex A**.

1.3.60 No sites designated as ecologically significant are located within the Horwood Stream catchment.

1.3.61 EA data regarding reasons for not achieving 'Good' indicate that the following elements are responsible.

- Macrophytes and Phytobenthos Combined due to 'poor livestock management', 'poor nutrient management' and 'poor soil management' from agriculture and rural land management, and 'sewage discharge (continuous)' from the water industry.
- The presence of 'PBDE' and 'Mercury and Its Compounds', no specific activity or sector have been deemed responsible.

Huntshaw Water

1.3.62 Huntshaw Water rises near Cloggs Hill, and flows in a westerly direction. The catchment extends from the east near Lashingcott Moor to Van's Wood in the west. Huntshaw Water is classified as an ordinary watercourse, therefore the LLFA is responsible for the maintenance, improvement, or construction to manage risks to the water body.

1.3.63 Huntshaw Water is located within the South West River Basin District, in North Devon Management Catchment. It is part of the Torridge Operational Catchment.

1.3.64 Huntshaw Water is monitored as part of the WFD classifications. The Huntshaw Water Catchment comprises an area of approximately 17.7 km^2. The proposed Converter Site, Alverdiscott Substation Site and a section of the proposed HVAC cable corridor passes through the catchment.

1.3.65 Huntshaw Water is classified as a river and not designated as artificial or heavily modified. The overall classification is 'Moderate' with 'Moderate' ecological status and 'Fail' chemical status for Cycle 2 (2019). The Cycle 3 (2022) data indicates 'Moderate' ecological status. Chemical status has not been assessed. A summary is provided in **Annex A**.

1.3.66 No sites designated as ecologically significant are located within the Horwood Stream catchment.

1.3.67 EA data regarding reasons for not achieving 'Good' indicate that the following elements are responsible:

- Phosphates due to 'poor livestock management' from agriculture and rural land management, and 'sewage discharge (continuous)' from the water industry;
- Macrophytes and Phytobenthos Combined due to 'poor livestock management' from agriculture and rural land management, and 'sewage discharge (continuous)' from the water industry; and
- The presence of 'PBDE' and 'Mercury and Its Compounds', no specific activity or sector have been deemed responsible.

Gammaton Reservoirs

1.3.68 Gammaton Upper Reservoir is a spring-fed lake, located within Gammaton, approximately 3.5 km east of Alverdiscott. The Upper Reservoir flows into the Gammaton Lower Reservoir which is located immediately upstream to the north.

1.3.69 Gammaton Upper and Lower Reservoirs are both located within the South West River Basin District, in North Devon Management Catchment. They are part of the Torridge Operational Catchment.

1.3.70 Gammaton Reservoirs are monitored as part of the WFD classifications. The Gammaton Lower Reservoir Catchment comprises an area of approximately 0.45 km^2. The Onshore Infrastructure Area is situated approximately 500 m south east from the Gammaton Lower Reservoir. The Gammaton Upper Reservoir Catchment comprises an area of approximately 0.34 km^2. The Onshore Infrastructure Area is situated approximately 150 m south east from the Gammaton Lower Reservoir.

1.3.71 Gammaton Lower Reservoir is classified as a lake and is designated as heavily modified. The overall classification is 'Moderate' with 'Moderate' ecological status and 'Fail' chemical status for Cycle 2 (2019). The Cycle 3 (2022) data indicates 'Moderate' ecological status. Chemical status has not been assessed for Cycle 3 (2022). A summary is provided in **Annex A**.

1.3.72 Gammaton Upper Reservoir is classified as a lake and is designated as heavily modified. The overall classification is 'Moderate' with 'Moderate' ecological status and 'Fail' chemical status for Cycle 2 (2019). Ecological and Chemical status has not been assessed for Cycle 3 (2022). A summary is provided in Annex A.

1.3.73 Gammaton Lower Reservoir is classified under the Nitrates Directive as a Eutrophic Lake and Gammaton Reservoirs are classified as Drinking Water Protected Areas.

1.3.74 EA data regarding reasons for not achieving 'Good' indicate that the following elements are responsible.

- Phytoplankton due to 'poor nutrient management' from agriculture and rural land management, 'reservoir/impoundment' from the water industry, and 'Natural conditions'.
- The presence of 'PBDE' and 'Mercury and Its Compounds', no specific activity or sector have been deemed responsible.

Torridge and Hartland Streams

1.3.75 The Torridge and Hartland Streams groundwater body catchment extends from Okehampton in the east, to the coast near Bideford in the west.

1.3.76 Torridge and Hartland Streams Groundwater body is located within the South West River Basin District, in the South West GW Management Catchment. It is part of the Torridge and Hartland Streams Operational Catchment.

1.3.77 Torridge and Hartland Streams is monitored as part of the WFD classifications. The groundwater catchment comprises an area of approximately 914 km^2. The proposed Converter Site, HVAC cables, Alverdiscott Substation Site and a section of the proposed Onshore HVDC Cable Corridor is situated within the catchment.

1.3.78 Torridge and Hartland Streams is classified as a groundwater body. The overall classification for Cycle 2 (2019) is 'Poor', with 'Good' Quantitative elements and chemical quality assessed to be 'Poor'. No data for Cycle 3 (2022) has been published at the present time. A summary is provided in **Annex A**.

1.3.79 No sites designated as ecologically significant are located within the Horwood Stream catchment.

1.3.80 EA data regarding reasons for not achieving 'Good' indicate that the following elements are responsible:

- suspect data, relating to the Chemical Drinking Water Protected Area designation. No specific activity or sector have been deemed responsible.

1.3.81 There are no additional ecological reports or river habitat surveys available to inform this assessment.

1.3.82 No additional surface water sampling has been undertaken to inform this assessment.

Development specific WFD classification

1.3.83 The majority of waterbodies within proximity to the HVDC Cable Corridor, HVAC Cable Corridors and Converter Site pass through greenfield land, and can be considered relatively natural. Therefore, it is acknowledged that although the classifications provided above may not be wholly representative, they can be considered suitable for the basis of this assessment.

1.3.84 Due to the nature of the Proposed Development, and the number of waterbodies which span the length of the Onshore Infrastructure Area, it is deemed that a holistic summary which considers the relevant waterbodies is suitable for this assessment of the WFD classification.

1.3.85 A qualitative estimate summary has been undertaken of the WFD categories for the sub-reach adjacent to the Proposed Development. This is provided in **Table 1.7**.

Table 1.7: Summary WFD Status of Water Bodies Adjacent to the Proposed Development

Water body	Overall Water Body	Ecological	Biological quality elements	Hydro-morphological supporting elements	Physico-chemical quality elements	Specific Pollutants	Chemical	Priority Hazardous Substances
Barnstaple Bay	Moderate	2019 – Good 2022 - Moderate	2019 – Good 2022 - Moderate	2019 – High 2022 - High	2019 – Good 2022 - High	2019 – High 2022 - High	2019 – Fail 2022 - DNRA	2019 – Fail 2022 - DNRA
Kenwith Stream	Moderate	2019 – Moderate 2022 - Moderate	2019 – Moderate 2022 - Moderate	2019 - Supports Good 2022 - Supports Good	2019 – Moderate 2022 - Moderate	No Data	2019 – Fail 2022 - DNRA	2019 – Fail 2022 - DNRA
Upper River Yeo (Bideford)	Poor	2019 – Poor 2022 - Poor	2019 – Poor 2022 - Poor	2019 - Supports Good 2022 - Supports Good	2019 – Moderate 2022 - Moderate	No Data	2019 – Fail 2022 - DNRA	2019 – Fail 2022 - DNRA
Lower River Yeo (Bideford)	Moderate	2019 – Moderate 2022 - Moderate	2019 – Moderate 2022 - Moderate	2019 - Supports Good 2022 - Supports Good	2019 – Moderate 2022 - Moderate	No Data	2019 – Fail 2022 - DNRA	2019 – Fail 2022 - DNRA
Taw/Torridge	Moderate	2019 – Moderate 2022 - Moderate	2019 - Good 2022- Good	2019 - Supports Good 2022 - Supports Good	2019 – Moderate 2022 - Moderate	2019 – High 2022 - High	2019 – Fail 2022 - DNRA	2019 – Fail 2022 - DNRA
Horwood Stream	Moderate	2019 – Moderate 2022 - Moderate	2019 – Moderate 2022 - Moderate	2019 - Supports Good 2022 - Supports Good	2019 - Good 2022- Good	No Data	2019 – Fail 2022 - DNRA	2019 – Fail 2022 - DNRA
Huntshaw Water	Moderate	2019 – Moderate 2022 - Moderate	2019 – Moderate 2022 - Moderate	2019 - Supports Good 2022 - Supports Good	2019 – Moderate 2022 - Moderate	No Data	2019 – Fail 2022 - DNRA	2019 – Fail 2022 - DNRA

Water body	Overall Water Body	Ecological	Biological quality elements	Hydro-morphological supporting elements	Physico-chemical quality elements	Specific Pollutants	Chemical	Priority Hazardous Substances
Gammaton Lower Reservoir	Moderate	2019 – Moderate 2022-Moderate	2019 – Moderate 2022-Moderate	No Data	2019 – Moderate 2022-Moderate	2019 – High 2022 - High	2019 – Fail 2022 - DNRA	2019 – Fail 2022 - DNRA
Gammaton Upper Reservoir	Moderate	2019 – Moderate 2022 – No Data	2019 – Moderate 2022 – No Data	No Data	No Data	No Data	2019 – Fail 2022 - DNRA	2019 – Fail 2022 - DNRA

DNRA - Does Not Require Assessment

Table 1.8: Summary WFD Status of Groundwater Bodies Adjacent to the Proposed Development

Water body	Overall Water Body	Quantitative	Chemical
Torridge and Hartland Streams	Poor	2019 - Good	Poor

Achievement of the WFD Objectives

WFD Measures

1.3.86 The South West RBMP states that the Significant Water Management Issues in the district are: physical modifications, pollution from wastewater, pollution from rural areas, changes to the natural flow and level of water, pollutions from towns, cities and transport, and negative effects of non-native invasive species.

1.3.87 The South West RBMP sets out an overview of the planned improvements for the South West River Basin District.

1.3.88 The Plan outlines the measures to achieve the priorities for the area. Some of the key measures are detailed below.

- Physical Modifications:
  - Habitat restoration or creation.
  - River restoration and fish pass improvements.
  - Removal of barriers to fish passage.
  - Riparian tree planting and fencing.
- Managing Pollution:
  - Pollution control initiatives.
- Changes to Natural Flow and Levels:
  - Control pattern/timing of abstractions.
  - Water demand management.
  - Improvement to condition of channel/bed and/or banks/shoreline.
  - Use alternative source/relocate abstraction or discharge.
- Manage Non-Invasive Native Species:
  - Mitigation, control and eradication.
  - Building awareness and understanding.
  - Early detection, monitoring and rapid response.
  - Prevent introduction.
- Peatland Restoration:
  - Implementation of tried and tested methodologies in line with the England Peat Action Plan.

1.3.89 Measures from the above list which are relevant to the pressures impacting the waterbodies and will be considered within the mitigation/improvements suggested within the Proposed Development.

1.4 Stage 2 – Scoping

Introduction

1.4.1 A summary of the mitigation measures adopted as part of the Proposed Development is provided in Chapter 3: Hydrology and Flood Risk of the ES.

1.4.2 This assessment considers locations at which the Proposed Development may impact the existing waterbodies, how this can be managed using the mitigation measures being adopted as part of the Proposed Development, and any further mitigation which may be suitable.

Scheme Baseline Components

1.4.3 It is anticipated that the elements of development highlighted in **section 1.1**, are likely to include the following works which may impact the hydrological environment:

- crossings, new, extensions to existing or removal of existing;
- channel modifications; and
- drainage outfalls.

Maximum Design Scenario

1.4.4 The maximum design scenarios identified in **Table 1.9** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the information provided in Chapter 3: Project Description of the ES. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g., different infrastructure layout), to that assessed here be taken forward in the final design. Therefore, this comprises a conservative assessment of a worst-case scenario.

Table 1.9: Maximum design scenario considered for the assessment of impacts

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
The impact of contaminated runoff on the quality of surface water and ground receptors	✓	×	✓	**Construction phase: landfall** • Construction works at the Landfall comprise an initial 18 months of works, with a space between the second phase of works. The second phase of works at the Landfall would continue for a further six months. • Offshore and onshore HVDC cables are to come ashore via HDD and jointed together at TJBs. The Landfall HDD has a maximum length of 2,110 m from the entry pit to the TJBs. There is a maximum of 2 TJBs, each 150 m^2 in area and with a depth of 2.5 m. The HDD has 4 entry pits (located onshore), each with an area of 25 m^2 and a depth of 3 m. The volume of excavated material per entry pit will be 75 m^3. There would also be 4 exit pits (located offshore), each with dimensions of 15 m x 15 m. • A 10,000 m^2 Landfall compound is expected to be present for a duration of 36 months. **Construction phase: Onshore Cable Corridors** • The temporary Onshore HVDC Cable Corridor width is 65 m with a length of up to 14.5 km. The temporary width of the HVAC Cable Corridors would be 32.5 m each (per Bipole), with a length of up to 1.2 km. • The expected construction duration for the Onshore HVDC Cable Corridor is up to 36 months. The expected construction period for the Onshore HVAC Cables is a total of 12 months over two separate phases. • The maximum number of cable trenches for Onshore HVDC Cable Corridor will be two with an approximate trench width at ground level of 4.3 m and depth of 1.4 m. The maximum number of cable trenches for the Onshore HVAC Cable Corridor will be 4 with an approximate trench width at ground level of 4.9 m and a depth of 1.4 m.	**Construction phase** Open cut trenching will result in the largest compound footprint and largest area of disturbance (compared to HDD) at the Landfall. This represents the maximum design scenario in terms of potential for runoff, spillage and direct disturbance to water bodies (where present). However, HDD or alternative trenchless techniques will be used to install the Landfall and cross water bodies, major roads and an archaeological asset. In terms of areas affected by the onshore cable corridors and converter stations, the maximum design scenario is represented by the largest working areas and number of trenches, which arise from the construction of the Proposed Development. In terms of duration, the maximum design scenario is represented by the duration of the HVDC cable corridor construction. Where options remain for watercourse crossings, open cut trenching represents the maximum design scenario in terms of direct disturbance. HDD (or similar trenchless techniques) is committed for crossings of Main rivers and some ordinary watercourses, where possible. As flood risk to and from the construction of either cable corridor option is considered to be the same, the worst-case scenario is considered to be the construction of either of the two options.
The impact of increased flood risk arising from additional surface water runoff as a result of construction activities.	✓	×	✓		
The impact of increased flood risk arising from watercourse crossings	✓	×	✓		
The impact of damage to existing field drainage	✓	×	✓		
The impact of damage to existing water supply and drainage infrastructure	✓	×	✓		
The impact of increased flood risk arising from damage to existing flood defences.	✓	×	✓		

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				• In regard to HDD, the maximum number of HDD locations will be 6 (including Landfall) along the Onshore HVDC Cable Corridor with two compounds per HDD, each with an area of 10,000 m^2. • Within the Onshore HVDC Cable Corridor, there will be up to 34 joint bays, each with an area of 100 m^2 and a depth of 1.4m. The distance between jointing bays would be between 800 m and 1,100 m. • Within the Onshore HVDC Cable Corridor, there will be up to 34 link boxes each with an area of 2.25 m^2 and a depth of 1.4 m. The distance between link boxes would be between 800 m and 1,100 m. • The main construction compound at Gammaton Road is to have an area of up to 63,000 m^2 and is expected to be present for a duration of 72 months. • A secondary construction compound (A39 compound) is to have an area up to 48,000 m^2 and is expected to be present for a duration of 36 months. • Dimensions of temporary culvert/bridge crossings for the haul road will be a maximum 3 m in diameter and 10 m in length. **Construction phase: Converter Site** • Converter Site footprint of 395,000 m^2 (including landscaping, and internal access) and a combined converter platform footprint of 130,000 m^2 for two converter stations. • A 20,000 m^2 converter compound - duration of 72 months. **Construction phase: Highways Improvements** • Road improvements to local highways and road networks including lane widening, new lanes and junctions. **Decommissioning: Landfall** • The cables within the Landfall HDD will be pulled out at the landward end and recycled. Cables are to be left in-situ below MHWS.	**Decommissioning phase** Decommissioning is likely to operate within the parameters identified for construction.

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				Decommissioning: Onshore HVDC and HVAC cables • HVDC and HVAC Cables may be recovered and removed by pulling the cables through the ducts (e.g., for recycling). Otherwise, they will be left in place in the ground with the cable ends cut, sealed and securely buried as a precautionary measure. • Cable ducts, joint bays and link boxes would be left in-situ, to minimise environmental disturbance. **Decommissioning: Converter Site** • If the operation of the converter stations does not continue beyond 50 years, they are to be decommissioned. • Decommissioning is likely to operate within the parameters identified for construction (i.e., any activities are likely to occur within construction working areas and to require no greater amount or duration of activity than assessed for construction). **Decommissioning: Highways Improvements** • Highways improvements would not have a forecast end life and would not be decommissioned.	
The impact of increased flood risk arising from additional surface water runoff as a result of operation of the Converter Site	×	✓	×	**Operation and maintenance phase: Landfall** • Two TJBs: 300 m^2 (150 m^2 per TJB). **Operation and maintenance phase: onshore cable corridor** • 34 Joint bays: An area of 100 m^2 per joint bay. • 34 Link boxes: An area of 2.25 m^2 per link box. **Operation and maintenance phase: Converter Site** • The Converter Site would have a total footprint of 395,000 m^2 (including landscaping, drainage and internal access), and would include two converter stations with a combined footprint of 130,000 m^2.	**Operation and maintenance phase** The maximum design scenario is represented by the largest permanent areas of impermeable surface/hard standing, which represent the worst case in terms of changes in runoff rates and flood risk to the surrounding area.

[1] C=construction, O=operation and maintenance, D=decommissioning

Mitigation Measures Adopted as Part of the Proposed Development

1.4.5 For the purposes of the EIA process, the term *'measures adopted as part of the Proposed Development'* is used to include the following types of mitigation measures (adapted from IEMA, 2016). These measures are set out in Volume 1, Appendix 3.1: Commitments Register of the ES and mitigation measures relevant to the onshore WFD assessment are provided within **Table 1.10**. Mitigation measures are broken down into the following categories:

- Embedded mitigation. This includes the following.
  - Primary (inherent) mitigation - measures included as part of the Proposed Development design. IEMA describes these as '*modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project and do not require additional action to be taken*'. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the project and the parameters secured in the DCO and/or marine licences. For example, a reduction in footprint or height.
  - Tertiary (inexorable) mitigation. IEMA describes these as '*actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects'*. It may be helpful to secure such measures through a Construction Environmental Management Plan or similar.
- Secondary (foreseeable) mitigation. IEMA describes these as 'actions that will require further activity in order to achieve the anticipated outcome'. These include measures required to reduce the significance of environmental effects (such as lighting limits) and may be secured through an environmental management plan.

Table 1.10: Mitigation measures adopted as part of the Proposed Development

Commitment Number	Measure Adopted	How the Measure Will be Secured
Embedded Measures		
ONS67	HDD (or other trenchless methodology) entry and exit points will be located at least: • 8 m away from the banks of ordinary watercourses; and • 16 m from banks of the River Torridge, a tidal EA Main River and the landward toe of associated formal and informal flood defences. The trenchless crossing depth will be determined by the depth of suitable rock as identified during supplementary ground investigation surveys. The anticipated crossing depth underneath watercourses is as follows: • 5 m for Kenwith Stream; • 9 m for the tributary of Jennets Reservoir; and • 15 m for the River Torridge. The trenchless crossing depth for all other watercourse crossings is to be ascertained at the detailed design stage and as a factor of safety incorporated within engineering calculations to account for climate change impacts to peak watercourse flows and rates of incision. Where EA flood defences are present, a minimum 1.5 m vertical clearance will be maintained between the hard bed of the watercourse and the landward toe of those flood defences.	DCO Schedule 2, Requirement 7 (Management plans)
ONS68	The following easements will be maintained between watercourses and all temporary working areas for the Onshore HVDC Cable Corridor and HVAC Cable Corridors, and temporary construction compounds. • 8 m away from the banks of ordinary watercourses; and • 16 m from tidal EA Main Rivers and the landward toe of associated formal and informal flood defences. The same buffer will be maintained at the Converter Site, excluding the landscaping and drainage.	DCO Schedule 2, Requirement 7 (Management plans)
ONS07	An Outline Pollution Prevention Plan (PPP) forms an appendix to the Outline On-CEMP, which has been prepared as part of the application for development consent (document reference 7.7, Appendix A). Onshore PPP(s) would be developed in accordance with the Outline PPP and would include details of emergency spill response procedures. Good practice guidance detailed in the Environment Agency's Pollution Prevention Guidance notes, CIRIA guidance or the latest relevant available guidance would be followed, where appropriate and reasonably practicable.	DCO Schedule 2, Requirement 7 (Management plans)
ONS67	A Construction Drainage Strategy would be developed post-consent and in accordance with the Outline On-CEMP, which outlines the measures and details to be incorporated into the strategy. The Construction Drainage Strategy would incorporate pollution prevention and flood response measures to ensure that the potential for any temporary effects on water quality or flood risk are reduced as far as reasonably practicable during the construction stage.	DCO Schedule 2, Requirement 7 (Management plans)

Commitment Number	Measure Adopted	How the Measure Will be Secured
ONS04	An Outline Decommissioning Strategy has been submitted as part of the application for development consent (document reference 7.17), which details that onshore and offshore decommissioning plans will be prepared in accordance with the principles set out in the Outline Decommissioning Strategy, if decommissioning of the Proposed Development is required at the end of the Proposed Development's operational life. The onshore decommissioning plan(s) will be developed in consultation with the relevant authority and in line with the latest available guidance, legislation and any new technologies available at the time of the Proposed Development's decommissioning. The onshore decommissioning plan(s) will include an assessment of the need to remove above ground infrastructure and the decommissioning of below ground infrastructure and include details relevant to flood risk (e.g. maintenance/reinstatement of existing land drainage), pollution prevention and avoidance of ground disturbance. The onshore decommissioning plan(s) will also include provision for the protection (during decommissioning) of any significant archaeological remains within the Onshore Infrastructure Area which were identified and protected from harm during construction.	DCO Schedule 2, Requirement 16 (Decommissioning Strategy)
ONS70	An Operational Drainage Strategy would be developed post-consent, in accordance with the outline drainage strategy that has been provided as part of the application for development consent (document reference 7.22). The Operational Drainage Strategy would include measures to limit discharge rates and attenuate flows to maintain greenfield runoff rates at the Converter Site. The Operational Drainage Strategy would be developed as far as reasonably practicable in line with the latest relevant drainage guidance.	DCO Schedule 2, Requirement 13 (Operational drainage)
ONS71	Land Drainage consents will be sought where required from the Devon County Council (as Lead Local Flood Authority) in consultation with the Environment Agency.	DCO Schedule 2, Requirement 7 (Management plans)
ONS72	Consents/permits relating to dewatering activities that may affect surface water and / or groundwater are to be obtained from the Environment Agency as and when required during the construction phase of the Project. The permitting authority will decide the conditions of the consent to ensure that construction does not result in significant alteration to the hydrological regime or an increase in fluvial risk as far as reasonably practicable.	DCO Schedule 2, Requirement 7 (Management plans)
ONS75	A Flood Management Plan will form part of the final On-CEMP and will be prepared for works taking place within a Flood Warning/Flood Alert area. During the construction phase the Principal Contractor will sign up to the Flood Warning Service and will be alerted by a phone call or text when a Flood Warning becomes active to enable site personnel to be evacuated from the site in a timely manner prior to a flood event occurring.	DCO Schedule 2, Requirement 7 (Management plans)
ONS76	Prior to construction, geomorphological surveys would be undertaken on ordinary watercourses that may be crossed by trenched techniques. Surveys would be used to inform detailed design of crossing methodologies prior to construction. Indicative crossing methodologies are presented within Volume 1 Appendix 3.2: Onshore Crossing Schedule of the ES.	DCO Schedule 2, Requirement 7 (Management plans)

Commitment Number	Measure Adopted	How the Measure Will be Secured
ONS74	Prior to the commencement of construction works, a risk assessment would be undertaken for identified sensitive surface and groundwater receptors, including springs, private water supplies and ordinary watercourses to identify the need for further investigations such as a water features survey. The work would inform any mitigation measures required to minimise potential impacts as far as reasonably practicable. Where a potential impact is identified concerning Gammaton Reservoirs, options to mitigate this impact will be developed based upon the findings of the risk assessment and in consultation with relevant stakeholders, incorporating feedback as far as reasonably practicable.	DCO Schedule 2, Requirement 7 (Management plans)
ONS08	An Outline Bentonite Breakout Plan has been prepared as part of the application for the development consent (document reference 7.20). Bentonite Breakout Plan(s) would be developed in accordance with the Outline Bentonite Breakout Plan.	DCO Schedule 2, Requirement 7 (Management plans)
ONS06	A Dust Management Plan (DMP) would be incorporated within the On-CEMP(s) and measures in relation to air quality and dust management, as outlined in the Institute of Air Quality Management guidance (IAQM, 2024). A DMP assists in the appropriate management techniques to limit dust soiling from construction and decommissioning activities as far as reasonably practicable. Air quality and dust management measures, as outlined in IAQM guidance (IAQM, 2024) would be included. An Outline DMP has been provided as an appendix to the Outline On-CEMP as part of the application for development consent (document reference 7.7, Appendix C).	DCO Schedule 2, Requirement 7 (Management Plans)
ONS77	If ground surveys confirm presence of contamination, the construction of piled foundations would use mitigation measures as defined in the following guidance: Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention (EA, 2001), or latest relevant available guidance.	DCO Schedule 2, Requirement 7 (Management plans)
ONS78	Where required, trenched techniques may be used for minor ditches or smaller watercourses that are frequently dry. In these cases, measures would be implemented as far as reasonably practicable to protect water quality and flow and these would be detailed within the On-CEMP(s).	DCO Schedule 2, Requirement 7 (Management plans)
ONS79	In order to manage impacts to field drainage, the Outline On-CEMP stipulates that the contractor would develop field drainage plans in consultation with the relevant landowners. If required, and as far as reasonably practicable, additional field drainage would be installed to ensure the existing drainage of the land is maintained during and after construction.	DCO Schedule 2, Requirement 7 (Management plans)
Secondary (Further) Measures		
ONS80	Fences, walls, ditches and drainage outfalls will be retained at the Landfall and along the Onshore HVDC Cable Corridor and HVAC Cable Corridors, where reasonably practicable. Where it is not reasonably practicable to retain them, any damage will be repaired and reinstated. The EA must be notified if damage occurs to any EA main river or related flood infrastructure.	DCO Schedule 2, Requirement 7 (Management plans)

1.4.6 The scope of the detailed assessment is based upon the activities identified as potentially posing a risk to WFD quality elements in the screening assessment. **Table 1.11** below summarises potential impacts of the Proposed Development components previously highlighted.

1.4.7 The outcome of this initial assessment for onshore water bodies is summarised in **Table 1.12** and elements of biological, physicochemical, hydromorphological and quantitative status have been scoped in for assessment across the different potential impacts identified in the maximum design scenario.

Table 1.11: Likely Effects of Proposed Development Components

Element of Proposed Works	WFD Element Impact								
	Biological				Hydro-morphological supporting elements		Physicochemical supporting elements	Chemical		Quantitative
	Fish	Invertebrates	Macrophytes	Macrophytes and phytobenthos combined	Hydrological regime	Morphology		Priority hazardous substances	Priority substances	
Crossings (New and Alterations) and Associated Works	**Scoped In** The proposed crossing of watercourses may cause a localised loss of biological components within the vicinity of the crossings. The extent of the loss will be dependent upon the dimensions of the crossings, technique used and biological baseline. It is anticipated that the effects will mainly impact macrophytes, phytobenthos, macroinvertebrates and fish. Construction impacts will be managed via best practice method statements, however localised loss of existing river habitats which may extend beyond construction could have an adverse effect and require further mitigation, dependent upon the crossing technique used.				**Scoped In** The proposed crossing of watercourses may cause a localised loss of riparian habitats within the vicinity of the crossings. The anticipated effect upon flow dynamics, connection to groundwater, connection to floodplain and general channel structure, will be dependent upon the dimensions of the crossing, technique used and hydromorphological baseline within the locality.		**Scoped In** The proposed crossing of watercourses may cause a localised change in the hydromorphological regime. The potential for alterations to river processes and effects on sediment transfer, flows and dissolved oxygen are dependent upon the dimensions of the crossing, technique used and hydromorphological baseline within the locality.	**Scoped Out** No anticipated effects		**Scoped In** The construction phase of the development may require piling or dewatering, to allow the required works. These elements of works have the potential to alter groundwater flow paths, and impact nearby watercourses.
Drainage Outfalls	**Scoped In** The footprint of drainage outfalls will extend into the channel of waterbodies to provide scour protection. At detailed design stage, scour protection will be selected to ensure the channel alterations and impacts on biological receptors are minimised. If this is achieved, impacts upon fauna will be limited.				**Scoped In** The footprint of drainage outfalls will extend into the channel of waterbodies to provide scour protection. At detailed design stage, scour protection will be selected to ensure the channel alterations and flow dynamics are minimised. If		**Scoped In** The footprint of drainage outfalls will extend into the channel of waterbodies to provide scour protection. At detailed design stage, scour protection will be selected to ensure the	**Scoped Out** No anticipated effects		**Scoped Out** No anticipated effects

Element of Proposed Works	WFD Element Impact								
	Biological				Hydro-morphological supporting elements		Physicochemical supporting elements	Chemical		Quantitative
	Fish	Invertebrates	Macrophytes	Macrophytes and phytobenthos combined	Hydrological regime	Morphology		Priority hazardous substances	Priority substances	
					this is achieved, impacts upon river dimensions and dynamics will be limited.		channel alterations and flow dynamics are minimised. If this is achieved, impacts upon river dimensions and dynamics will be limited.			

1.5 Stage 3 – Detailed Impact Assessment

Elements for Detailed Assessment

1.5.1 It has been assessed that the proposed elements of works which have the greatest potential for impact, from a WFD perspective, are watercourse crossings, using trenched techniques, and drainage outfalls.

1.5.2 The Project Description (Volume 1, Chapter 3: Project Description of the ES) indicates that the following features will be crossed via HDD (or other trenchless methodologies).

- The Mermaid's Pool to Rowden Gut Site of Special Scientific Interest (SSSI), situated along the coastline at the Landfall, Cornborough Range.
- Kenwith Stream, situated just south of Rickard's Down and approximately 300 m north of Abbotsham.
- A small stream, 290 m south of Jennetts reservoir and to the west of West Ashridge, which feeds into Jennetts reservoir.
- River Torridge, to the south of Bideford (to note, one HDD will cross both the River Torridge and A386).

1.5.3 Detailed location information and water levels have not been provided, therefore, a worst-case scenario has been assumed, whereby all other crossings of watercourses will be undertaken using trenched techniques. Therefore, the following impacts and WFD elements have been scoped into the assessment:

- Impacts – Disturbance of floodplain/riparian habitats and processes, disturbance of in-channel biological habitats/processes, disturbance of wider hydromorphological processes, alterations to groundwater processes.
- WFD Elements – Biological, Physicochemical, Hydromorphological, Quantitative.

RBMP Measures, Further Mitigation and Potential Enhancements

Potential Mitigation

1.5.4 Several measures were identified within the South West RBMP as part of the programme of measures to achieve Good Status/Potential by 2027. As the WFD waterbodies within the vicinity of the development have not achieved Good, the focused measures should be considered for implementation within the scheme where reasonable.

WFD Mitigation/Enhancement

1.5.5 As the Proposed Development would intersect several watercourses, this poses the unique opportunity of providing improvements to the watercourses and surrounding water environment. It is likely that many of these potential improvements will coalesce with the measures outlined within the South West RBMP. Priority management issues for the North Devon catchment are to:

- manage pollution from wastewater from towns, cities and transport;
- manage pollution from agriculture and rural areas; and
- manage invasive non-native species.

1.5.6 The three WFD water bodies included in this assessment are designated as artificial or heavily modified. However, due to the nature of the waterbodies, and proposed works, it is considered that there are very few opportunities to provide mitigation.

1.5.7 By introducing a drainage system as part of the construction works and within the permanent compound which manages runoff, this may provide an opportunity to mitigate pollution, based upon the existing situation, and lead to improvements of water quality. This will aid in the resolution of the North Devon priority issues.

1.5.8 The Proposed Development specific impacts that have been scoped in, relate to the disturbance of floodplain/riparian habitats and processes, disturbance of in-channel biological habitats/processes, disturbance of wider hydromorphological processes, and alterations to groundwater processes. It is anticipated that designs will be informed by a Fluvial Geomorphologist and Ecologist at the detailed design stage to ensure that potential impacts are minimised. This may provide the opportunity to further 'naturalise' the existing riparian habitats, ensure good functionality of hydrological processes and ensure that the presence of invasive species is reduced. This will further aid the resolution of the North Devon priority issues.

1.5.9 Although no waterbodies within the Proposed Development are achieving 'Good' status, the water bodies are impacted by several factors which have been an issue in the past and may become an issue in the future, including:

- Phosphate;
- Perfluorooctane sulphonate (PFOS);
- Polybrominated diphenyl ethers (PBDE);
- Macrophytes and Phytobenthos Combined;
- Phytoplankton;
- Mercury and Its Compounds;
- Dissolved Inorganic Nitrogen; and
- Benzo(g-h-i)perylene.

1.5.10 Several of the above factors fall into the four groups of global pollutants, which were assessed for the first time within the 2019 cycle. These factors are causing all water bodies to fail chemical status. There are measures that can be utilised to mitigate these pollutants, however due to the sources of these pollutants and the scale at which they can be controlled, it is not deemed suitable to consider these within the Proposed Development.

Potential Impacts and Improvements

1.5.11 As highlighted above, the Proposed Development component which is likely to have the greatest impact is the proposed crossings. It is proposed that crossings will be undertaken using Open Cut or HDD (or other trenchless methodologies).

HDD (or other trenchless methodologies)

1.5.12 Entry and exit points of HDD crossings will be located at least 8 m away from ordinary watercourses and EA Main Rivers or Flood Defences. Cables crossing via HDD methods will be installed at least 1.5 m beneath the hard bed of watercourses. It is proposed that trenched techniques may be used for some minor ditches and smaller watercourses which are frequently dry. An 8 m buffer will be maintained between watercourses and temporary and permanent development associated with the Proposed Development to ensure no direct impact or loss of habitat.

1.5.13 Additional information regarding HDD is presented within Volume 1, Chapter 3: Project Description of the ES.

Open Cut techniques

1.5.14 As it is anticipated that Open Cut techniques will have the greatest impact upon the hydrological environment, this has been considered as the worst-case design/construction scenario. However, it should be noted that disturbances to hydrological connectivity are possible with any construction methodology, and this requires due consideration. As highlighted above, the locations where open cut is proposed, and where flows within the watercourse have been observed, have been considered further in regard to the current WFD status, known pressures and likely effects of the proposed works.

1.5.15 It is determined that there will be impacts to the watercourses, which may potentially feed into the wider environment and WFD catchments.

1.5.16 The trenched works should be planned and undertaken, in line with best practice guidance for temporary construction methods, to minimise the damage to the water environment. This may include but is not limited to:

- adequate surveying undertaken pre-commencement to ensure that sensitive habitats, geological features, etc. are avoided and wider environmental effects are limited;
- appropriate surveys undertaken, including detailed records of existing vegetation, habitats, and watercourse information, to ensure that the pre-works condition can be reinstated;
- consideration given to existing surface water and groundwater flow regimes to ensure disruption is kept to a minimum and secondary flow paths can be prevented during construction;
- area of cut kept as narrow as possible and designed to ensure minimum disruption;
- avoiding unnecessary vegetation clearance, taking a phased approach to vegetation clearance, and avoiding ecologically sensitive times of year, to limit damage and prevent sediment pollution via runoff;
- construction taking place during dry conditions where possible, and de-watering, isolation, or similar methods, to be carefully selected to ensure disruption to hydrological processes is minimised;
- recording and careful removal of the existing bed to ensure original bed profile can be reinstated after works, with original materials, to ensure resequencing with no discernible difference; and

- reinstatement works given adequate time and resources within the Proposed Development, with works completing in spring to ensure full growing season and limiting vegetation disturbance prior to being fully established.

1.5.17 It is determined that should the above considerations, or similar, be undertaken for the Proposed Development, the worst-case impacts arising from elements of temporary construction can be sufficiently mitigated. The specific works required to ensure that the pre-commencement conditions are retained will be determined at the detailed design stage by ecologists and other specialists.

1.5.18 It is likely that there may be scope to provide improvements to the pre-commencement conditions, which will contribute to ensuring that the watercourse will not be prevented from achieving 'Good' status in the future.

1.5.19 The potential improvements that could be considered as part of the Proposed Development include:

- mitigate physical modifications to watercourse channels by promoting habitat restorations via riparian planting and river restoration;
- enhance watercourse connectivity by installing wildlife corridors and fish passes;
- implement processes to avoid pollution or siltation of the watercourses;
- install mechanisms to assist with the removal of pollutants and enable the planted vegetation to filter the water;
- enhance the geo-morphology of the watercourse channel within the vicinity of the development to promote natural flows and levels; and
- assess the presence of invasive species and implement measures to promote their eradication and prevent introduction.

1.5.20 Confirmation of the required mitigation and improvements will be determined as the design progresses and specific crossing locations and techniques are determined.

1.5.21 **Table 1.12** summarises the assessment of the effects on WFD status against wider RMBP pressures, WFD Reasons for Not Achieving 'Good' status and whether the Proposed Development is in line with WFD compliance objectives.

Table 1.12: Summary of RNAG, RBMP Measures, Effects of Proposed Development on WFD Waterbodies and Deterioration in Status

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
Barnstaple Bay Water Body (ID: GB610807680003) **Moderate ecological status**	• Polybrominated diphenyl ethers (PBDE) • Mercury and Its Compounds	Pollution • Mitigate/remediate point source impacts on receptor • Reduce point source pollution at source • Reduce point source and diffuse pollution pathways (includes controlling entry to the water environment) • Reduce diffuse pollution at source Invasive Species • Mitigation, control and eradication (to reduce extent) • Building awareness and understanding (to slow the spread) • Early detection, monitoring and rapid response (to reduce the risk of establishment) • Prevent introduction • Manage natural flow and levels • Prevent introduction • control pattern/timing of abstraction	Construction of the Proposed Development has the potential to pollute nearby waterbodies. However, the introduction of construction drainage systems and Construction Environmental Management Plans will sufficiently protect waterbodies from pollution risks and other sources of pollution that are outside the scope of mitigation that can be attached to the scheme. Introducing construction elements of the Proposed Development will involve the removal or damage of existing riparian, floodplain and channel habitats, along with disruption to biological and hydromorphological processes.	Risk of deterioration. Proposed pollution mitigation deemed sufficient and may provide enhancements to existing water quality. Potential impacts on habitats and biological processes may lead to deterioration and prevention of reaching 'Good' status. Habitat and hydrological process restoration can be implemented.	The Proposed Development will not cause failure to meet surface water 'Good Ecological Status' or 'Good Ecological Potential', result in a deterioration of surface water Ecological Status or Potential. There are no changes which will permanently prevent or compromise the Environmental Objectives being met.

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
		• water demand management • improvement to condition of channel/bed and/or banks/shoreline • use alternative source/relocate abstraction or discharge			
Kenwith Stream (ID: GB108050014500) **Moderate Ecological Status**	• Phosphate • Polybrominated diphenyl ethers (PBDE) – No sector responsible • Mercury and Its Compounds – No sector responsible • Macrophytes and Phytobenthos Combined	Pollution • Mitigate/remediate point source impacts on receptor • Reduce point source pollution at source • Reduce point source and diffuse pollution pathways (includes controlling entry to the water environment) • Reduce diffuse pollution at source Invasive Species • Mitigation, control and eradication (to reduce extent) • Building awareness and understanding (to slow the spread) • Early detection, monitoring and rapid response (to reduce the risk of establishment) • Prevent introduction	Construction of the Proposed Development has the potential to pollute nearby waterbodies. However, the introduction of construction drainage systems and Construction Environmental Management Plans will sufficiently protect waterbodies from pollution risks and other sources of pollution are outside the scope of mitigation that can be attached to the scheme. Introducing construction elements of the Proposed Development will involve the removal or damage of existing riparian, floodplain and channel habitats, along with disruption to biological and hydromorphological processes.	Risk of deterioration. Proposed pollution mitigation deemed sufficient and may provide enhancements to existing water quality. Potential impacts on habitats and biological processes may lead to deterioration and prevention of reaching 'Good' status. Habitat and hydrological process restoration can be implemented.	The Proposed Development will not cause failure to meet surface water 'Good Ecological Status' or 'Good Ecological Potential', result in a deterioration of surface water Ecological Status or Potential. There are no changes which will permanently prevent or compromise the Environmental Objectives being met.

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
		• Manage natural flow and levels • Prevent introduction • control pattern/timing of abstraction • water demand management • improvement to condition of channel/bed and/or banks/shoreline • use alternative source/relocate abstraction or discharge			
Upper River Yeo (Bideford) (ID: GB108050014470) **Poor Ecological Status**	• Phosphate • Polybrominated diphenyl ethers (PBDE) • Mercury and Its Compounds • Macrophytes and Phytobenthos Combined	Pollution • Mitigate/remediate point source impacts on receptor • Reduce point source pollution at source • Reduce point source and diffuse pollution pathways (includes controlling entry to the water environment) • Reduce diffuse pollution at source Invasive Species • Mitigation, control and eradication (to reduce extent) • Building awareness and understanding (to slow the spread)	Construction of the Proposed Development has the potential to pollute nearby waterbodies. However, the introduction of construction drainage systems and Construction Environmental Management Plans will sufficiently protect waterbodies from pollution risks and other sources of pollution that are outside the scope of mitigation, that can be attached to the scheme. Introducing construction elements of the Proposed Development will involve the removal or damage of existing riparian, floodplain and channel habitats, along with	Risk of deterioration. Proposed pollution mitigation deemed sufficient and may provide enhancements to existing water quality. Potential impacts on habitats and biological processes may lead to deterioration and prevention of reaching 'Good' status. Habitat and hydrological process restoration	The Proposed Development will not cause failure to meet surface water 'Good Ecological Status' or 'Good Ecological Potential', result in a deterioration of surface water Ecological Status or Potential. There are no changes which will permanently prevent or compromise the Environmental Objectives being met.

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
		• Early detection, monitoring and rapid response (to reduce the risk of establishment) • Prevent introduction • Manage natural flow and levels • Prevent introduction • control pattern/timing of abstraction • water demand management • improvement to condition of channel/bed and/or banks/shoreline • use alternative source/relocate abstraction or discharge	disruption to biological and hydromorphological processes.	can be implemented.	
Lower River Yeo (Bideford) (ID: GB108050014400) **Moderate Ecological Status**	• Phosphate • Polybrominated diphenyl ethers (PBDE) • Mercury and Its Compounds • Macrophytes and Phytobenthos Combined	Pollution • Mitigate/remediate point source impacts on receptor • Reduce point source pollution at source • Reduce point source and diffuse pollution pathways (includes controlling entry to the water environment) • Reduce diffuse pollution at source Invasive Species	Construction of the Proposed Development has the potential to pollute nearby waterbodies. However, the introduction of construction drainage systems and Construction Environmental Management Plans will sufficiently protect waterbodies from pollution risks and other sources of pollution that are outside the scope of mitigation, that can be attached to the scheme.	Risk of deterioration. Proposed pollution mitigation deemed sufficient and may provide enhancements to existing water quality. Potential impacts on habitats and biological processes may lead to deterioration and	The Proposed Development will not lead to failure meeting surface water 'Good Ecological Status' or 'Good Ecological Potential', or result in a deterioration of surface water Ecological Status or Potential. There are no changes which will

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
		• Mitigation, control and eradication (to reduce extent) • Building awareness and understanding (to slow the spread) • Early detection, monitoring and rapid response (to reduce the risk of establishment) • Prevent introduction • Manage natural flow and levels • Prevent introduction • control pattern/timing of abstraction • water demand management • improvement to condition of channel/bed and/or banks/shoreline • use alternative source/relocate abstraction or discharge	Introducing construction elements of the Proposed Development will involve the removal or damage of existing riparian, floodplain and channel habitats, along with disruption to biological and hydromorphological processes.	prevention of reaching 'Good' status. Habitat and hydrological process restoration can be implemented.	permanently prevent or compromise the Environmental Objectives being met.
Taw/Torridge (ID: GB540805015500) **Moderate Ecological Status**	• Benzo(g-h-i)perylene • Dissolved Inorganic Nitrogen • Polybrominated diphenyl ethers (PBDE)	Pollution • Mitigate/remediate point source impacts on receptor • Reduce point source pollution at source • Reduce point source and diffuse pollution pathways	Construction of the Proposed Development has the potential to pollute nearby waterbodies. However the introduction of construction drainage systems and Construction Environmental Management Plans will sufficiently protect	Risk of deterioration. Proposed pollution mitigation deemed sufficient and may provide enhancements to existing water quality.	The Proposed Development will not cause failure to meet surface water 'Good Ecological Status' or 'Good Ecological Potential', or result in a deterioration of

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
	• Mercury and Its Compounds	(includes controlling entry to the water environment) • Reduce diffuse pollution at source Invasive Species • Mitigation, control and eradication (to reduce extent) • Building awareness and understanding (to slow the spread) • Early detection, monitoring and rapid response (to reduce the risk of establishment) • Prevent introduction • Manage natural flow and levels • control pattern/timing of abstraction • water demand management • improvement to condition of channel/bed and/or banks/shoreline • use alternative source/relocate abstraction or discharge	waterbodies from pollution risks and other sources of pollution that are outside the scope of mitigation, that can be attached to the scheme. Introducing construction elements of the Proposed Development will involve the removal or damage of existing riparian, floodplain and channel habitats, along with disruption to biological and hydromorphological processes.	Potential impacts on habitats and biological processes may lead to deterioration and prevention of reaching 'Good' status. Habitat and hydrological process restoration can be implemented.	surface water Ecological Status or Potential. There are no changes which will permanently prevent or compromise the Environmental Objectives being met.

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
Horwood Stream (ID: GB108050014510) **Moderate Ecological Status**	• Polybrominated diphenyl ethers (PBDE) – No sector responsible • Mercury and Its Compounds – No sector responsible • Macrophytes and Phytobenthos Combined	Pollution • Mitigate/remediate point source impacts on receptor • Reduce point source pollution at source • Reduce point source and diffuse pollution pathways (includes controlling entry to the water environment) • Reduce diffuse pollution at source Invasive Species • Mitigation, control and eradication (to reduce extent) • Building awareness and understanding (to slow the spread) • Early detection, monitoring and rapid response (to reduce the risk of establishment) • Prevent introduction • Manage natural flow and levels • control pattern/timing of abstraction • water demand management • improvement to condition of channel/bed and/or banks/shoreline	Construction of the Proposed Development has the potential to pollute nearby waterbodies. However, the introduction of construction drainage systems and Construction Environmental Management Plans will sufficiently protect waterbodies from pollution risks and other sources of pollution that are outside the scope of mitigation, that can be attached to the scheme. Introducing construction elements of the Proposed Development will involve the removal or damage of existing riparian, floodplain and channel habitats, along with disruption to biological and hydromorphological processes.	Risk of deterioration. Proposed pollution mitigation deemed sufficient and may provide enhancements to existing water quality. Potential impacts on habitats and biological processes may lead to deterioration and prevention of reaching 'Good' status. Habitat and hydrological process restoration can be implemented.	The Proposed Development will not cause failure to meet surface water 'Good Ecological Status' or 'Good Ecological Potential', or result in a deterioration of surface water Ecological Status or Potential. There are no changes which will permanently prevent or compromise the Environmental Objectives being met.

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
		• use alternative source/relocate abstraction or discharge			
Huntshaw Water (ID: GB108050014440) **Moderate Ecological Status**	• Phosphate • Polybrominated diphenyl ethers (PBDE) – No sector responsible • Mercury and Its Compounds – No sector responsible • Macrophytes and Phytobenthos Combined	Pollution • Mitigate/remediate point source impacts on receptor • Reduce point source pollution at source • Reduce point source and diffuse pollution pathways (includes controlling entry to the water environment) • Reduce diffuse pollution at source Invasive Species • Mitigation, control and eradication (to reduce extent) • Building awareness and understanding (to slow the spread) • Early detection, monitoring and rapid response (to reduce the risk of establishment)	Construction of the Proposed Development has the potential to pollute nearby waterbodies. However, the introduction of construction drainage systems and Construction Environmental Management Plans will sufficiently protect waterbodies from pollution risks and other sources of pollution that are outside the scope of mitigation, that can be attached to the scheme. Introducing construction elements of the Proposed Development will involve the removal or damage of existing riparian, floodplain and channel habitats, along with disruption to biological and hydromorphological processes.	Risk of deterioration. Proposed pollution mitigation deemed sufficient and may provide enhancements to existing water quality. Potential impacts on habitats and biological processes may lead to deterioration and prevention of reaching 'Good' status. Habitat and hydrological process restoration can be implemented.	The Proposed Development will not cause failure to meet surface water 'Good Ecological Status' or 'Good Ecological Potential', or result in a deterioration of surface water Ecological Status or Potential. There are no changes which will permanently prevent or compromise the Environmental Objectives being met.

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
		• Manage natural flow and levels • Prevent introduction • control pattern/timing of abstraction • water demand management • improvement to condition of channel/bed and/or banks/shoreline • use alternative source/relocate abstraction or discharge			
Gammaton Lower Reservoir (ID: GB30844781) **Moderate Ecological Status**	• Phytoplankton • Polybrominated diphenyl ethers (PBDE) • Macrophytes and Phytobenthos Combined	Pollution • Mitigate/remediate point source impacts on receptor • Reduce point source pollution at source • Reduce point source and diffuse pollution pathways (includes controlling entry to the water environment) • Reduce diffuse pollution at source Invasive Species • Mitigation, control and eradication (to reduce extent) • Building awareness and understanding (to slow the spread)	Construction of the Proposed Development has the potential to pollute nearby waterbodies. However, the introduction of construction drainage systems and Construction Environmental Management Plans will sufficiently protect waterbodies from pollution risks and other sources of pollution that are outside the scope of mitigation, that can be attached to the scheme. Introducing construction elements of the Proposed Development will involve the removal or damage of existing riparian, floodplain and channel habitats, along with	Risk of deterioration. Proposed pollution mitigation deemed sufficient and may provide enhancements to existing water quality. Potential impacts on habitats and biological processes may lead to deterioration and prevention of reaching 'Good' status. Habitat and hydrological process restoration	The Proposed Development will not cause failure to meet surface water 'Good Ecological Status' or 'Good Ecological Potential', or result in a deterioration of surface water Ecological Status or Potential. There are no changes which will permanently prevent or compromise the Environmental Objectives being met.

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
		• Early detection, monitoring and rapid response (to reduce the risk of establishment) • Manage natural flow and levels • Prevent introduction • control pattern/timing of abstraction • water demand management • improvement to condition of channel/bed and/or banks/shoreline • use alternative source/relocate abstraction or discharge	disruption to biological and hydromorphological processes.	can be implemented.	
Gammaton Upper Reservoir (ID: GB30844798) **Moderate Ecological Status**	• Polybrominated diphenyl ethers (PBDE) • Mercury and Its Compounds	Pollution • Mitigate/remediate point source impacts on receptor • Reduce point source pollution at source • Reduce point source and diffuse pollution pathways (includes controlling entry to the water environment) • Reduce diffuse pollution at source Invasive Species • Mitigation, control and eradication (to reduce extent)	Construction of the Proposed Development has the potential to pollute nearby waterbodies. However, the introduction of construction drainage systems and Construction Environmental Management Plans will sufficiently protect waterbodies from pollution risks and other sources of pollution that are outside the scope of mitigation, that can be attached to the scheme. Introducing construction elements of the Proposed	Risk of deterioration. Proposed pollution mitigation deemed sufficient and may provide enhancements to existing water quality. Potential impacts on habitats and biological processes may lead to deterioration and prevention of reaching 'Good'	The Proposed Development will not cause failure to meet surface water 'Good Ecological Status' or 'Good Ecological Potential', or result in a deterioration of surface water Ecological Status or Potential. There are no changes which will permanently prevent or

Waterbody (ID) and Current Status	Reasons for Not Achieving Good (RNAG)	RBMP Mitigation Measures relevant to RNAG and wider Catchment Issues	Scheme Components and Potential to Affect	Risk of Temporary Deterioration	Conclusions
		• Building awareness and understanding (to slow the spread) • Early detection, monitoring and rapid response (to reduce the risk of establishment) • Manage natural flow and levels • Prevent introduction • control pattern/timing of abstraction • water demand management • improvement to condition of channel/bed and/or banks/shoreline • use alternative source/relocate abstraction or discharge	Development will involve the removal or damage of existing riparian, floodplain and channel habitats, along with disruption to biological and hydromorphological processes.	status. Habitat and hydrological process restoration can be implemented.	compromise the Environmental Objectives being met.

1.6 Summary

1.6.1 This report has undertaken a WFD assessment of the impacts of the Proposed Development, upon WFD water bodies within the study area. The assessment focuses on the Landfall and onshore elements of the Proposed Development.

1.6.2 Implementing best construction and design practices will minimise the deterioration of the water environment and continue progress towards meeting the objectives of the WFD. The greatest impacts from the development are likely to arise from pollution issues and alterations to habitats, biological processes and hydromorphological/hydrogeological processes.

1.6.3 It is determined that the introduction of construction drainage systems and On-CEMP(s) will sufficiently protect waterbodies from pollution risks. Disruptions to habitats, biological processes and hydromorphological/hydrogeological processes, have limited mitigation options, however, restoration of the baseline environment post construction is the best option to ensuring 'Good' status is maintained/achieved.

1.6.4 The Proposed Development will not cause failure to meet surface water 'Good Ecological Status' or 'Good Ecological Potential', or result in a deterioration of surface water Ecological Status or Potential.

1.6.5 There are no changes which will permanently prevent or compromise the Environmental Objectives being met.

1.6.6 The Proposed Development has the potential to provide local improvement techniques to be incorporated into the detailed design. Inclusion of such techniques has the potential to provide a beneficial effect resulting in some localised improvement and also feeds into the wider RBMP objectives.

1.6.7 It is confirmed that the works proposed as part of the Proposed Development meet the WFD objectives, and that the scheme is therefore compliant with the WFD regulations.

1.7 References

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Annex A: WFD Water Body Data Tables

Apx Table 1: EA Water Body Classification for Barnstaple Bay

Classification Item	2019	2022
Ecological	Good	Moderate
Biological quality elements	Good	Moderate
Invertebrates	N/A	Moderate
Infaunal Quality Index	N/A	Moderate
Macroalgae	Good	Good
Rocky Shore Macroalgae	Good	Good
Phytoplankton	Good	Good
Physico-chemical quality elements	Good	High
Dissolved Inorganic Nitrogen	Good	High
Dissolved oxygen	High	High
Hydromorphological Supporting Elements	High	High
Morphology	High	High
Specific pollutants	High	High
Arsenic	High	High
Chromium (VI)	High	High
Copper	High	High
Iron	High	High
Zinc	High	High
Chemical	Fail	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment
Benzo(a)pyrene	Good	N/A
Benzo(b)fluoranthene	Good	N/A
Benzo(g-h-i)perylene	Good	N/A
Benzo(k)fluoranthene	Good	N/A
Cadmium and Its Compounds	Good	N/A
Dioxins and dioxin-like compounds	Good	N/A
Heptachlor and cis-Heptachlor epoxide	Good	N/A
Hexabromocyclododecane (HBCDD)	Good	N/A
Hexachlorobenzene	Good	N/A
Hexachlorobutadiene	Good	N/A

Classification Item	2019	2022
Mercury and Its Compounds	Fail	N/A
Nonylphenol	Good	N/A
Perfluorooctane sulphonate (PFOS)	Good	N/A
Polybrominated diphenyl ethers (PBDE)	Fail	N/A
Tributyltin Compounds	Good	N/A
Priority substances	Good	Does not require assessment
Fluoranthene	Good	N/A
Lead and Its Compounds	Good	N/A
Nickel and Its Compounds	Good	N/A
Octylphenol	Good	N/A
Trichloromethane	Good	N/A
Other Pollutants	Does not require assessment	Does not require assessment

Apx Table 2: EA Water Body Classification for Taw/Torridge

Classification Item	2019	2022
Ecological	Moderate	Moderate
Biological quality elements	Good	Good
Angiosperms	Good	Good
Saltmarsh	Good	Good
Fish	Good	Good
Invertebrates	Good	Good
Infaunal Quality Index	Good	Good
Macroalgae	High	High
Fucoid Extent	High	High
Phytoplankton	Good	Good
Physico-chemical quality elements	Moderate	Moderate
Dissolved Inorganic Nitrogen	Moderate	Moderate
Dissolved oxygen	High	High
Hydromorphological Supporting Elements	Supports good	Supports good
Hydrological Regime	Supports good	Supports good
Supporting elements (Surface Water)	Moderate	Moderate

Classification Item	2019	2022
Mitigation Measures Assessment	Moderate or less	Moderate or less
Specific pollutants	High	High
Arsenic	High	High
Chromium (VI)	High	High
Copper	High	High
Iron	High	High
Un-ionised ammonia	High	High
Zinc	High	High
Chemical	Fail	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment
Benzo(a)pyrene	Good	N/A
Benzo(b)fluoranthene	Good	N/A
Benzo(g-h-i)perylene	Fail	N/A
Benzo(k)fluoranthene	Good	N/A
Cadmium and Its Compounds	Good	N/A
Dioxins and dioxin-like compounds	Good	N/A
Heptachlor and cis-Heptachlor epoxide	Good	N/A
Hexabromocyclododecane (HBCDD)	Good	N/A
Hexachlorobenzene	Good	N/A
Hexachlorobutadiene	Good	N/A
Mercury and Its Compounds	Fail	N/A
Nonylphenol	Good	N/A
Perfluorooctane sulphonate (PFOS)	Good	N/A
Polybrominated diphenyl ethers (PBDE)	Fail	N/A
Tributyltin Compounds	Good	N/A
Priority substances	Good	Does not require assessment
Fluoranthene	Good	N/A
Lead and Its Compounds	Good	N/A
Nickel and Its Compounds	Good	N/A
Octylphenol	Good	N/A
Trichloromethane	Good	N/A
Other Pollutants	Does not require assessment	Does not require assessment

Apx Table 3: EA Water Body Classification for Kenwith Stream

Classification Item	2019	2022
Ecological	Moderate	Moderate
Biological quality elements	Moderate	Moderate
Invertebrates	High	High
Macrophytes and Phytobenthos Combined	Moderate	Moderate
Macrophytes Sub Element	High	High
Phytobenthos Sub Element	Moderate	Moderate
Physico-chemical quality elements	Moderate	Moderate
Ammonia (Phys-Chem)	High	High
Dissolved oxygen	High	High
Phosphate	Moderate	Poor
Temperature	High	High
pH	High	High
Hydromorphological Supporting Elements	Supports good	Supports good
Hydrological Regime	High	High
Morphology	Supports good	Supports good
Chemical	Fail	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment
Benzo(a)pyrene	Good	N/A
Dioxins and dioxin-like compounds	Good	N/A
Heptachlor and cis-Heptachlor epoxide	Good	N/A
Hexabromocyclododecane (HBCDD)	Good	N/A
Hexachlorobenzene	Good	N/A
Hexachlorobutadiene	Good	N/A
Mercury and Its Compounds	Fail	N/A
Perfluorooctane sulphonate (PFOS)	Good	N/A
Polybrominated diphenyl ethers (PBDE)	Fail	N/A
Priority substances	Good	Does not require assessment
Cypermethrin (Priority)	Good	N/A
Fluoranthene	Good	N/A
Other Pollutants	Does not require assessment	Does not require assessment

Apx Table 4: EA Water Body Classification for Upper River Yeo (Bideford)

Classification Item	2019	2022
Ecological	Poor	Poor
Biological quality elements	Poor	Poor
Fish	Poor	Poor
Invertebrates	Good	Good
Macrophytes and Phytobenthos Combined	Moderate	Moderate
Phytobenthos Sub Element	Moderate	Moderate
Physico-chemical quality elements	Moderate	Moderate
Ammonia (Phys-Chem)	High	High
Dissolved oxygen	High	High
Phosphate	Moderate	Moderate
Temperature	High	High
pH	High	High
Hydromorphological Supporting Elements	Supports good	Supports good
Hydrological Regime	Supports good	Supports good
Morphology	Supports good	Supports good
Chemical	Fail	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment
Benzo(a)pyrene	Good	N/A
Dioxins and dioxin-like compounds	Good	N/A
Heptachlor and cis-Heptachlor epoxide	Good	N/A
Hexabromocyclododecane (HBCDD)	Good	N/A
Hexachlorobenzene	Good	N/A
Hexachlorobutadiene	Good	N/A
Mercury and Its Compounds	Fail	N/A
Perfluorooctane sulphonate (PFOS)	Good	N/A
Polybrominated diphenyl ethers (PBDE)	Fail	N/A
Priority substances	Good	Does not require assessment
Cypermethrin (Priority)	Good	N/A
Fluoranthene	Good	N/A
Other Pollutants	Does not require assessment	Does not require assessment

Apx Table 5: EA Water Body Classification for Lower River Yeo (Bideford)

Classification Item	2019	2022
Ecological	Moderate	Moderate
Biological quality elements	Moderate	Moderate
Fish	N/A	Good
Invertebrates	High	High
Macrophytes and Phytobenthos Combined	Moderate	Moderate
Phytobenthos Sub Element	Moderate	Moderate
Physico-chemical quality elements	Moderate	Moderate
Ammonia (Phys-Chem)	High	High
Dissolved oxygen	High	High
Phosphate	Moderate	Moderate
Temperature	High	Good
pH	High	High
Hydromorphological Supporting Elements	Supports good	Supports good
Hydrological Regime	Supports good	Supports good
Morphology	Supports good	Supports good
Chemical	Fail	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment
Benzo(a)pyrene	Good	N/A
Dioxins and dioxin-like compounds	Good	N/A
Heptachlor and cis-Heptachlor epoxide	Good	N/A
Hexabromocyclododecane (HBCDD)	Good	N/A
Hexachlorobenzene	Good	N/A
Hexachlorobutadiene	Good	N/A
Mercury and Its Compounds	Fail	N/A
Perfluorooctane sulphonate (PFOS)	Good	N/A
Polybrominated diphenyl ethers (PBDE)	Fail	N/A
Priority substances	Good	Does not require assessment
Cypermethrin (Priority)	Good	N/A
Fluoranthene	Good	N/A
Other Pollutants	Does not require assessment	Does not require assessment

Apx Table 6: EA Water Body Classification for Horwood Stream

Classification Item	2019	2022
Ecological	Moderate	Moderate
Biological quality elements	Moderate	Moderate
Invertebrates	Good	Moderate
Macrophytes and Phytobenthos Combined	Moderate	Moderate
Macrophytes Sub Element		Moderate
Phytobenthos Sub Element	Moderate	Moderate
Physico-chemical quality elements	Good	Good
Ammonia (Phys-Chem)	High	High
Dissolved oxygen	High	High
Phosphate	Good	Good
Temperature	High	High
pH	High	High
Hydromorphological Supporting Elements	Supports good	Supports good
Hydrological Regime	High	High
Morphology	Supports good	Supports good
Supporting elements (Surface Water)	Moderate	N/A
Mitigation Measures Assessment	Moderate or less	N/A
Chemical	Fail	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment
Benzo(a)pyrene	Good	N/A
Dioxins and dioxin-like compounds	Good	N/A
Heptachlor and cis-Heptachlor epoxide	Good	N/A
Hexabromocyclododecane (HBCDD)	Good	N/A
Hexachlorobenzene	Good	N/A
Hexachlorobutadiene	Good	N/A
Mercury and Its Compounds	Fail	N/A
Perfluorooctane sulphonate (PFOS)	Good	N/A
Polybrominated diphenyl ethers (PBDE)	Fail	N/A
Priority substances	Good	Does not require assessment
Cypermethrin (Priority)	Good	N/A
Fluoranthene	Good	N/A

Classification Item	2019	2022
Other Pollutants	Does not require assessment	Does not require assessment

Apx Table 7: EA Water Body Classification for Huntshaw Water

Classification Item	2019	2022
Ecological	Moderate	Moderate
Biological quality elements	Moderate	Moderate
Invertebrates	Good	Good
Macrophytes and Phytobenthos Combined	Moderate	Moderate
Phytobenthos Sub Element	Moderate	Moderate
Physico-chemical quality elements	Moderate	Moderate
Ammonia (Phys-Chem)	High	High
Dissolved oxygen	High	High
Phosphate	Moderate	Moderate
Temperature	High	High
pH	High	High
Hydromorphological Supporting Elements	Supports good	Supports good
Hydrological Regime	High	High
Morphology	Supports good	Supports good
Chemical	Fail	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment
Benzo(a)pyrene	Good	N/A
Dioxins and dioxin-like compounds	Good	N/A
Heptachlor and cis-Heptachlor epoxide	Good	N/A
Hexabromocyclododecane (HBCDD)	Good	N/A
Hexachlorobenzene	Good	N/A
Hexachlorobutadiene	Good	N/A
Mercury and Its Compounds	Fail	N/A
Perfluorooctane sulphonate (PFOS)	Good	N/A
Polybrominated diphenyl ethers (PBDE)	Fail	N/A
Priority substances	Good	Does not require assessment
Cypermethrin (Priority)	Good	
Fluoranthene	Good	

Classification Item	2019	2022
Other Pollutants	Does not require assessment	Does not require assessment

Apx Table 8: EA Water Body Classification for Gammaton Lower Reservoir

Classification Item	2019	2022
Ecological	Moderate	Moderate
Biological quality elements	Moderate	Moderate
Macrophytes and Phytobenthos Combined	N/A	N/A
Macrophytes Sub Element	Moderate	Moderate
Phytoplankton	Moderate	Moderate
Physico-chemical quality elements	Moderate	Moderate
Salinity	High	High
Total Nitrogen	Poor	Bad
Total Phosphorus	Good	Good
Supporting elements (Surface Water)	Moderate	Moderate
Expert Judgement	Moderate	Moderate
Mitigation Measures Assessment	Moderate or less	Moderate or less
Specific pollutants	High	High
Copper	High	High
Chemical	Fail	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment
Benzo(a)pyrene	Good	N/A
Dioxins and dioxin-like compounds	Good	N/A
Heptachlor and cis-Heptachlor epoxide	Good	N/A
Hexabromocyclododecane (HBCDD)	Good	N/A
Hexachlorobenzene	Good	N/A
Hexachlorobutadiene	Good	N/A
Mercury and Its Compounds	Fail	N/A
Perfluorooctane sulphonate (PFOS)	Good	N/A
Polybrominated diphenyl ethers (PBDE)	Fail	N/A
Priority substances	Good	Does not require assessment
Fluoranthene	Good	N/A
Other Pollutants	Does not require assessment	Does not require assessment

Apx Table 9: EA Water Body Classification for Gammaton Upper Reservoir

Classification Item	2019	2022
Ecological	Moderate	N/A
Supporting elements (Surface Water)	Moderate	N/A
Expert Judgement	Moderate	N/A
Mitigation Measures Assessment	Moderate or less	N/A
Chemical	Fail	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment
Benzo(a)pyrene	Good	N/A
Dioxins and dioxin-like compounds	Good	N/A
Heptachlor and cis-Heptachlor epoxide	Good	N/A
Hexabromocyclododecane (HBCDD)	Good	N/A
Hexachlorobenzene	Good	N/A
Hexachlorobutadiene	Good	N/A
Mercury and Its Compounds	Fail	N/A
Perfluorooctane sulphonate (PFOS)	Good	N/A
Polybrominated diphenyl ethers (PBDE)	Fail	N/A
Priority substances	Good	Does not require assessment
Fluoranthene	Good	N/A
Other Pollutants	Does not require assessment	Does not require assessment

Apx Table 10: EA Water Body Classification for Torridge and Hartland Streams

Classification Item	2019
Overall Water Body	Poor
Quantitative	Good
Quantitative Status element	Good
Quantitative Dependent Surface Water Body Status	Good
Quantitative GWDTEs test	Good
Quantitative Saline Intrusion	Good
Quantitative Water Balance	Good
Chemical (GW)	Poor
Chemical Status element	Poor
Chemical Dependent Surface Water Body Status	Poor

Classification Item	2019
Chemical Drinking Water Protected Area	Poor
Chemical GWDTEs test	Good
Chemical Saline Intrusion	Good
General Chemical Test	Poor
Supporting elements (Groundwater)	
Prevent and Limit Objective	Active
Trend Assessment	Upward trend