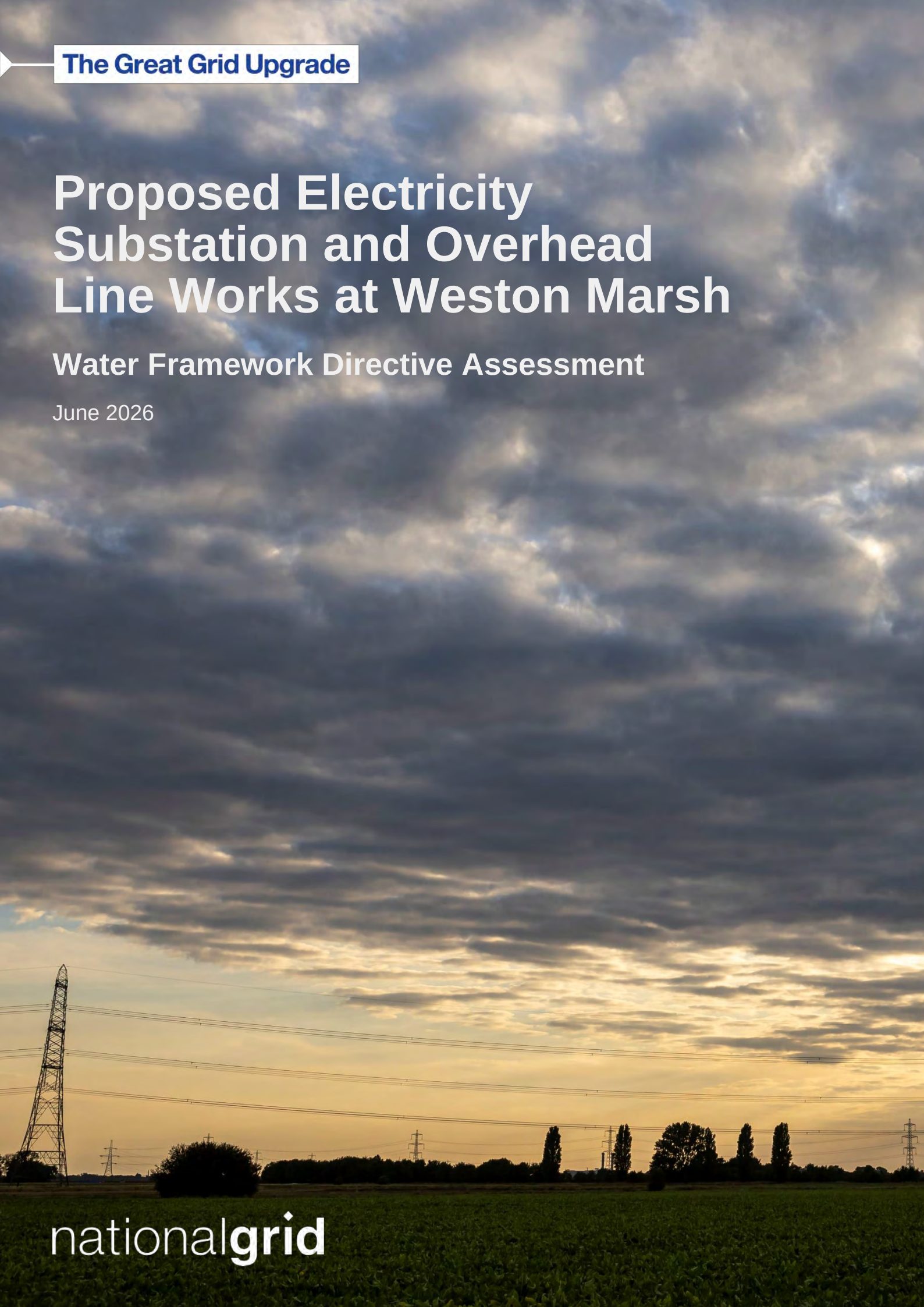
The Great Grid Upgrade

# Proposed Electricity Substation and Overhead Line Works at Weston Marsh

## Water Framework Directive Assessment

June 2026



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# Contents

# 1. Introduction

## 1.1 Overview

1.1.1 This Water Framework Directive (WFD) assessment has been prepared on behalf of National Grid Electricity Transmission plc (National Grid).

1.1.2 National Grid are proposing to undertake works to construct a new electricity substation, new sections of overhead line and modification of existing overhead lines within the vicinity of the Spalding Tee-Point in the Weston Marsh area, within the administrative boundary of South Holland District Council (SHDC) in Lincolnshire.

## 1.2 Summary of the Scheme

1.2.1 In totality, the Scheme consists of four components, each planned to be progressed via separate consenting routes. These are summarised in **Table 1.1.**

Table **1.1** Components of the Scheme

| Works required | Consenting regime |
|---|---|
| Construction of the new Air Insulated Substation (AIS) – 400kV Weston Marsh Substation A, associated landscaping and environmental mitigation works, drainage, highways and other associated works. | Town and Country Planning Act 1990 (8.1.6Ref 1)<br>Component referred to as '**Substation Works'** |
| Construction of new sections of overhead line to connect the new substation into the existing 4ZM overhead line.<br>Removal of a section of the existing 4ZM overhead line.<br>Other associated works. | Section 37 of the Electricity Act 1989 (Ref 2) and deemed consent pursuant to section 90(2) of the Town and Country Planning Act 1990<br>Component referred to as '**S37 4ZM Overhead Line Works**' |
| Construction of a new section of overhead line to connect the existing 2WS overhead line into the new substation.<br>Removal of a section of the existing 2WS overhead line.<br>Other associated works | Section 37 of the Electricity Act 1989 and deemed consent pursuant to section 90(2) of the Town and Country Planning Act 1990<br>Component referred to as '**S37 2WS Overhead Line Works**' |
| Reconductoring works required on the existing 4ZM overhead line<br>Two spans of temporary overhead lines | Town and Country Planning (General Permitted Development) (England) Order 2015 (Ref 3) and The Overhead Lines (Exemption) (England and Wales) Regulations 2009 (Ref 4)<br>Component referred to as '**Exempt Overhead Line Works'** |

1.2.2 The Substation Works will require consent from SHDC under the TCPA.

1.2.3 The S37 4ZM Overhead Line Works and S37 2WS Overhead Line Works (collectively referred to as 'the S37 Overhead Line Works') will require consent from the Secretary of State for Energy Security and Net Zero under Section 37 of the Electricity Act 1989 (Section 37).

1.2.4 The Exempt Overhead Line Works constitute permitted development under Part 15 Class B of the Town and Country Planning (General Permitted Development) (England) Order 2015 and The Overhead Lines (Exemption) (England and Wales) Regulations 2009.

1.2.5 The Scheme Site Boundary, which consists of the land required to construct and operate the Scheme in its entirety, is illustrated in **Figure 1**. The extent of land required to construct and operate each individual component of the Scheme is also illustrated in **Figure 1.**

1.2.6 The Scheme in its totality is a standalone development to enable connection of the Outer Dowsing Offshore Wind Farm to the national electricity transmission system (NETS). Each component stated in **Table 1.1** is required for the Scheme to fully function as part of NETS.

## 1.3 Purpose of this report

1.3.1 The purpose of this WFD assessment is to evaluate the potential construction and operational impacts arising from the Scheme on WFD water bodies.

1.3.2 The Scheme interacts with seven WFD water bodies throughout its length, thus, each activity associated with the Scheme, such as watercourse crossings, culverts and outfalls, etc., has been assessed against the Biological, Physico-chemical and Hydromorphological quality elements that comprise the WFD assessment.

# 2. Scheme Description

## 2.1 Overview

2.1.1 The Scheme comprises a series of construction activities required to facilitate the installation, modification and protection of infrastructure within the Scheme Site Boundary. These activities involve both temporary and permanent works and have the potential to interact with nearby surface water features. The key elements of the Scheme which are relevant to the WFD assessment are outlined below, along with the potential associated impacts upon the water environment. These elements are illustrated in **Figure 2**.

## 2.2 Temporary Elements

### Construction and use of temporary access tracks

2.2.1 Temporary haul roads (access tracks) would be constructed and used to enable plant, machinery and personnel to reach work areas. These proposed tracks are located in proximity to watercourses and therefore have the potential to generate surface-water runoff, sediment mobilisation and localised disturbance to riparian zones.

### Construction and use of temporary watercourse crossings (closed culverts)

2.2.2 Temporary closed-culvert crossings would be installed along the haul roads at a number of minor channels to facilitate access across watercourses during construction. These works involve direct interaction with the channel and may temporarily alter flow patterns or increase sediment release, as well as having the potential to disturb fish through the generation of noise and vibration.

### Construction and use of temporary watercourse crossings (clear-span bridge)

2.2.3 Temporary Clear-span Bridge crossings may be installed along the haul roads to facilitate access across watercourses during construction. These works involve direct interaction with the riparian zone. The structure also has potential to disturb fish through the generation of noise and vibration.

### Construction and use of temporary outfalls and Sustainable Drainage Systems (SuDS)

2.2.4 Temporary outfalls and SuDS features would be constructed to manage surface-water runoff generated by the construction features including compounds and the temporary access tracks. These works and the SuDS operation would occur near watercourses and have the potential to influence sediment pathways, flow connectivity and riparian structure during construction.

### Updating existing pylons (reconductoring)

2.2.5 Temporary scaffolding and nets (crossing protection) would be installed during reconductoring of overhead lines. These proposed scaffold platforms are located in proximity to watercourses and therefore have the potential to cause sediment mobilisation and localised disturbance to riparian zones and or sensitive habitats.

## 2.3 Permanent Elements

### Construction and use of maintenance and substation access tracks

2.3.1 Maintenance and substation access tracks would be constructed and used to enable plant, machinery and personnel to reach work areas. These proposed tracks are located in proximity to watercourses and therefore have the potential to generate surface-water runoff, sediment mobilisation and localised disturbance to riparian zones.

### Construction of New Pylons

2.3.2 New pylons would be installed at designated locations to facilitate diversion of the existing 4ZM and 2WS overhead lines into the proposed Weston Marsh Substation A. Ground disturbance associated with excavation and foundation works may occur near watercourses, creating potential pathways for sediment runoff or localised hydromorphological effects, and loss or alteration of habitats for biological receptors including fish, macroinvertebrates and macrophytes.

### Air Insulated Substation (AIS)

2.3.3 A new 400 kV AIS would be constructed on a raised substation platform. Works include earthworks, foundations and installation of electrical infrastructure. These activities may generate surface water runoff, mobilise sediment and temporarily alter local drainage pathways when undertaken near watercourses.

### Channel Realignment

2.3.4 Localised channel diversion of the R11 New Drain would be required to accommodate construction of the substation. These works involve direct modification of the watercourse and have the potential to affect channel form, bed structure and flow dynamics. They may also result in the loss of habitat for fish, macroinvertebrates and macrophytes, and barriers to migration for some fish species.

### Use of Permanent Outfalls and Sustainable Drainage Systems

2.3.5 New outfalls and SuDS features would be constructed to manage surface-water runoff generated by the Scheme during the Operational Phase. These works and the SuDS operation would occur near watercourses and have the potential to influence sediment pathways, flow connectivity and riparian structure during construction.

## Landscaping and Environmental-Mitigation

2.3.6 Associated landscaping and environmental-mitigation works would involve minor ground reprofiling, soil movement and vegetation establishment. Temporary disturbance of soils may increase sediment-runoff risk, particularly where works occur close to surface-water features.

2.3.7 A list of the activities and associated WFD waterbodies and water courses is provided in **Table 2.1**.

Table 2.1 Scheme activities and associated WFD waterbodies and watercourses

| WFD waterbody | Watercourse | Watercourse code | Crossing ID | Crossing type | Track type | Temporary SuDS | Permanent SuDS | Realign ment | New Pylons | AIS | Dismantled pylons | Environmental mitigation | Crossing protection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Welland Transitional | Welland | WC_WM_33 | | | Maintenance access | | | | | | | | X |
| Moulton River | unnamed | WC_WM_46 | WM-WCX-1 | Assumed culvert | Construction access Maintenance access | | | | | | | | |
| Moulton River | unnamed | WC_WM_51 | | | | | | | | | | X | |
| Moulton River | unnamed | WC_WM_55 | | | Maintenance access | | | | | | | X | |
| Moulton River | unnamed | WC_WM_56 | | | Maintenance access | | | | | | | X | |
| Moulton River | unnamed | WC_WM_60 | | | | | | | | | | X | |
| Moulton River | unnamed | WC_WM_61 | WM-WCX-1a | Assumed culvert | Construction access Maintenance access | X | | | 4ZM414-N | X | 4ZM409 | X | |
| Moulton River | IDB_DRN208 P1101 | WC_WM_63 | WM-WCX-3 | Assumed culvert | Construction access Maintenance access | X | | Old channel | 2WS017-N 2WS018-N 4ZM408-N 4ZM414-N 4ZM413-N | X | 4ZM409 | X | |
| Moulton River | unnamed | WC_WM_65 | | | | | | | | | | X | |
| Moulton River | Lord's Drain/Moulton River | WC_WM_69 | WM-WCX-19 | Assumed culvert/ bridge | Construction access | X | | | | | | 2WS017 | |
| Moulton River | IDB_DRN208 P1101 | WC_WM_74 | | | | | X | | | | | X | |
| Moulton River | unnamed | WC_WM_76 | | | Maintenance access | | | | | | | | |

| WFD waterbody | Watercourse | Watercourse code | Crossing ID | Crossing type | Track type | Temporary SuDS | Permanent SuDS | Realign ment | New Pylons | AIS | Dismantled pylons | Environmental mitigation | Crossing protection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Moulton River | unnamed | WC_WM_81 | WM-WCX-7 | Assumed culvert | Construction access Maintenance access | | | | 2WS016-N | | 2WS016 | | |
| Moulton River | unnamed | WC_WM_82 | | | Maintenance access | | | | | | | | |
| Moulton River | unnamed | WC_WM_84 | | | Maintenance access | | | | | | | | |
| Moulton River | unnamed | WC_WM_85 | WM-WCX-13 | Assumed culvert | Construction access Maintenance access | X | | | | | | | |
| Moulton River | unnamed | WC_WM_95 | WM-WCX-14 | Assumed culvert | Construction access Maintenance access | X | | | | | | | |
| Moulton River | unnamed | WC_WM_102 | | | Maintenance access | | | | | | | | |
| Moulton River | unnamed | WC_WM_103 | WM-WCX-18 | Assumed culvert | Construction access | X | | | | | | | |
| Moulton River | unnamed | WC_WM_115 | WM-WCX-20 | Assumed culvert | Construction access | X | | | | | | | |
| Moulton River | unnamed | WC_WM_129 | | | | X | | | | | | | |
| Moulton River | unnamed | WC_WM_212 | WM-WCX-20a | Assumed culvert | Construction access | | | | | | | | |
| Moulton River | New drain diversion | R11 | WM-WCX-2b | Assumed culvert | Construction access | X | X | New channel | 4ZM408-N | X | 4ZM408 | | |
| Risegate Eau | IDB_Surfleet_ Marsh_Drain | WC_WM_9 | | | Construction access Maintenance access | | | | | | | | |
| Risegate Eau | unnamed | WC_WM_30 | | | Construction access Maintenance access | | | | | | | | |
| Risegate Eau | IDB_Surfleet_ Pump_Drain | WC_WM_42 | | | Construction access | | | | | | | | |

| WFD waterbody | Watercourse | Watercourse code | Crossing ID | Crossing type | Track type | Temporary SuDS | Permanent SuDS | Realign ment | New Pylons | AIS | Dismantled pylons | Environmental mitigation | Crossing protection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Maintenance access | | | | | | | | |
| Risegate Eau | unnamed | WC_WM_37 | | | Construction access<br>Maintenance access | | | | | | | | |
| Risegate Eau | unnamed | WC_WM_29 | | | Construction access<br>Maintenance access | | | | | | | | |

## 2.4 Decommissioning

2.4.1 Owing to its nature, there would be no intention to decommission the Scheme. However, if the need arose, decommissioning would involve the removal of all above-ground features using similar methods to those used for the construction phase.

2.4.2 The decommissioning works would follow National Grid processes at the time for assessing and reducing any environmental impacts and risks.

# 3. Legislative and Policy Framework

## 3.1 Overview

3.1.1 Legislation and national and local planning policy relevant to the Scheme and this report is described in further detail in the Planning, Design and Access Statement (TCPA application), and Section 37 Statement (S37 applications). Key legislation and policy relevant to the WFD assessment is summarised in the following sections.

## 3.2 Legislation and National Policy

### Legislation

3.2.1 An impact assessment of any works/modifications to water bodies in the UK is required under The Water Environment (WFD) (England and Wales) Regulations 2017 (the WFD 2017 Regulations) (SI 2017/407) (Ref 5) (and The Groundwater (WFD) (England) Directive 2016 (Ref 6). Compliance with the WFD 2017 Regulations is required for permitting of the Scheme.

3.2.2 The WFD assessment should also comply with relevant CEN/ISO Standards, as stated within Annex V of the WFD (2000/60/EC). Relevant standards are listed within Section 2 (Methodology). For transitional waterbodies, the Clearing Water for All guidance was applied.

3.2.3 The primary aim of the WFD is to improve/maintain the Ecological Status/Potential of all water bodies and to prevent deterioration in the status of the water bodies and their associated WFD quality elements. Ecological Status/Potential is determined by a suite of Biological, Physico-chemical and Hydromorphological quality elements. This WFD assessment aims to establish the baseline conditions, evaluate potential impacts of the Scheme and assess compliance against WFD objectives.

3.2.4 The overarching objective of the WFD is for surface water bodies in Europe to attain overall ‘Good Ecological Status’ (GES) or ‘Good Ecological Potential’ (GEP). GES refers to situations where the ecological characteristics show only a slight deviation from natural/near-natural conditions. In such a situation, the Biological, Physico-chemical and Hydromorphological conditions are associated with limited or no human pressure. Artificial and heavily modified water bodies have a target to achieve GEP, which recognises their important uses, whilst ensuring the quality elements are protected as far as possible.

3.2.5 The WFD sets several objectives, including:

1) Prevent deterioration in status for water bodies;

2) Aim to achieve good biological and good surface water chemical status in water bodies. For those water bodies that did not achieve GES by 2015, alternative objectives have been set by the Environment Agency (EA) where water bodies have been allocated a target date for compliance of either 2021 or 2027. The target date set for each water body takes into consideration measures that are practicably achievable for achieving GES or GEP;

3) For water bodies that are designated as artificial or heavily modified, the objective is to achieve GEP. Those artificial/heavily modified water bodies that did not achieve GEP by 2015 need to achieve compliance by 2021 or 2027;

4) Where it is considered either technically infeasible or disproportionately expensive to achieve GES or GEP by 2021 or 2027, alternative objectives have been set for the water body, such as a target to achieve Moderate status;

5) Comply with objectives and standards for protected areas, where relevant; and

6) Reduce pollution from priority substances and cease discharges, emissions and losses of priority hazardous substances.

3.2.6 Where a new modification, change in activity or change to a structure on a water body is proposed, a WFD assessment needs to consider whether the proposed alteration would cause deterioration in the Ecological Status or Potential of any water body. For heavily modified/artificial water bodies, proposed new modifications, or changes to activities or structures, may also result in WFD mitigation measures or actions, set to help a water body achieve GES/GEP, being ineffective. This could result in the water body failing to meet GES/GEP. Where a WFD assessment concludes that deterioration or failure to achieve GES/GEP may occur, an Article 4.7 assessment would be required, which makes provision for deterioration of status, provided that certain stringent conditions are met.

## National Planning Policy Framework

3.2.7 The revised National Planning Policy Framework (NPPF) was published in December 2024 and further amended on 7 February 2025. It is a material consideration for planning decisions. The Framework establishes a presumption in favour of sustainable development (paragraph 11) as its central principle and requires the planning system to pursue three mutually supportive overarching objectives (economic, social and environmental objectives (paragraph 8)).

3.2.8 Chapter 14 of the NPPF is directly relevant to the receptors identified within this report. Paragraph 182 states that:

*"[planning] applications which could affect drainage on or around the site should incorporate sustainable drainage systems…These should provide multifunctional benefits wherever possible, through facilitating improvements in water quality and biodiversity..."*

3.2.9 Paragraph 187 establishes that:

*"…[planning] decisions should contribute to and enhance the natural and local environment by: preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by…unacceptable levels of…water pollution…and wherever possible, help to improve local environmental conditions such as…water quality, taking into account relevant information such as river basin management plans."* (Ref 7)

## Overarching National Policy Statement for Energy (EN-1)

3.2.10 The Overarching National Policy Statement (NPS) for Energy (EN-1) (Ref 8) sets out the national policy for energy infrastructure projects. As paragraph 1.2.1 of EN-1 states, in England, in combination with any relevant technology specific NPSs, it may

be a material consideration in decision making on applications that fall under the TCPA. Section 5.16 of NPS EN-1 discusses effects upon water quality and resources. This acknowledges that during the construction, operation and decommissioning phases of energy development, discharges to water and physical modifications to the water environment could result in surface waters, groundwaters or protected areas failing to meet environmental objectives established under the Water Environment (WFD) (England and Wales) Regulations 2017. NPS EN-1 therefore notes that the applicant's assessment should describe any impacts of the proposed project on water bodies under the Water Environment (WFD) (England and Wales) Regulations 2017 (Ref 5).

## 3.3 Regional and Local Policy

3.3.1 Regional and local plans, policies and guidance relevant to this assessment are as follows:

1) Lincolnshire County Council (LCC) - Lincolnshire Development Roads and Sustainable Drainage Design Approach (2021) (Ref 9);
2) LCC – Sustainable Drainage - Design and Evaluation Guide (2018) (Ref 10);
3) South East Lincolnshire Local Plan 2011-2036 (2019) Policy 4: Approach to Flood Risk (Ref 11); and
4) South Holland Internal Drainage Board (IDB) Land Drainage Consent Policy: Discharge to Surface Water (Ref 12).

# 4. Methodology

## 4.1 Study area

4.1.1 The Study Area comprises a 1 km buffer from the Scheme Site Boundary. The Scheme Site Boundary and 1 km buffer is referred to as the Zone of Influence (ZoI) throughout this report. The Scheme could potentially impact the following WFD surface water bodies:

1) Risegate Eau (GB205031055525) river water body, which lies within the Welland Lower Operational Catchment, the Welland Management Catchment and the Anglian River Basin District;
2) Vernatt's Drain (GB205031050705) river water body, which lies within the Welland Lower Operational Catchment, the Welland Management Catchment and the Anglian River Basin District;
3) Moulton River (GB205031050755) river water body, which lies within the Welland Lower Operational Catchment, the Welland Management Catchment and the Anglian River Basin District;
4) Welland - conf Greatford Cut to tidal (GB205031050685) river water body, which lies within the Welland Lower Operational Catchment, the Welland Management Catchment and the Anglian River Basin District;
5) Glen (GB105031050720) river water body, which lies within the Glens Operational Catchment, the Welland Management Catchment and the Anglian River Basin District;
6) South Holland Main Drain (GB205032050405) river water body, which lies within the Nene Lower Operational Catchment, the Nene Management Catchment and the Anglian River Basin District; and
7) Welland (GB530503100400) transitional water body, which lies within the Wash TraC Operational Catchment, the Anglian TraC Management Catchment and the Anglian River Basin District.

4.1.2 No ground water WFD bodies have been identified in the ZoI.

## 4.2 Data collection

### Desk study

4.2.1 A desk-based study was carried out to inform the WFD assessment, reviewing existing information within the ZoI to develop a baseline for the catchments, watercourses, and surrounding areas. The following data sources were used for the desk study:

1) contemporary OS maps;
2) geology and soil maps (Ref 13);

3) current aerial photography;

4) WFD status and objectives from Catchment Data Explorer (Ref 14).

5) historical maps (Ref 15);

6) Nature on the Map for designated areas, habitats and species, and landscape data (Ref 16);

7) hydrological data (Ref 17);

8) WFD status and objectives from the 2022 Anglian River Basin Management Plan (RBMP) for cycle three data (Ref 18); and

9) EA Ecology and Fish Data Explorer (Ref 19).

## Field survey

### River and Ditch Condition Assessment

4.2.2 A River Condition Assessment of the Welland Transitional Water Body (GB530503100400) was undertaken in September 2025 and the Moulton River (GB205031050755) (Lord's Drain/WC_WM_69) in January 2026 by qualified surveyors. This assessment provided a baseline understanding of the physical and ecological condition of the watercourses, informing the WFD compliance evaluation.

4.2.3 In addition, in January 2026, a total of 25 watercourses classified as ditches within the Moulton River Water Body (GB205031050755) were surveyed using appropriate Ditch Condition Assessment methodologies by accredited surveyors. These surveys were conducted to characterise the hydromorphological and ecological condition of smaller water features potentially affected by the Scheme.

### Aquatic ecology surveys

4.2.4 Aquatic ecology scoping surveys were initially undertaken to assess the need for further detailed assessment of specific aquatic receptors within watercourses that the Scheme crosses. From this exercise, five crossing points were scoped in for further assessment: TCPA-OHL-WCX-4 (overhead line crossing) located on the River Welland, WM-WCX-19, TCPA-OHL-WCX-15 (overhead line crossing), and TCPA-OHL-WCX-16 (overhead line crossing) located on Lord's Drain (WC_WM_69) and WM-WCX-2b (access track crossing) located on water course WC_WM_63, and RJ-WCX-18 (access track crossing) located on watercourse WC_WM_182 (**Table 2.1**). The remaining crossing points were scoped out from further assessment as they were either found to be dry or contained minimal water with unsuitable habitat features for aquatic life.

4.2.5 The aquatic ecology surveys, sampling and analysis were undertaken in accordance with the following CEN standards, as required by Annex V of the WFD legislation. The applicable standards include those covering benthic macroinvertebrates, aquatic macrophytes, hyporheic fauna, and fish sampling methodologies (Ref 20-Ref 27).

### Fish survey

4.2.6 A fish population survey was undertaken by suitably qualified and experienced aquatic ecologists on 9 February 2026.

4.2.7 The fish communities of Lord's Drain (WC_WM_69) were surveyed by electric fishing approximately 800 m downstream of crossing TCPA-OHL-WCX-15 (overhead line crossing); TCPA-OHL-WCX-16 (overhead line crossing), between National Grid Reference (NGR) TF 30090 29214 and TF 30093 29297, a total length of 90 m (see **Figure 4**).

### Aquatic macroinvertebrate survey

4.2.8 Aquatic macroinvertebrate sampling was undertaken by suitably qualified and experienced aquatic ecologists on two occasions in Spring and Autumn 2025, on watercourses within the Moulton River water body.

4.2.9 The location of aquatic macroinvertebrate sampling sites within the Scheme Site Boundary is provided in **Table 4.1.**

Table 4.1 Aquatic macroinvertebrate sampling locations

| Site | Watercourse | National Grid Ref. | Seasons sampled |
|---|---|---|---|
| TCPA-OHL-WCX-15; TCPA-OHL-WCX-16 | Lord's Drain / WC_WM_69 | TF 30114 28413 | Spring and Autumn |
| WM-WCX-19 | Lord's Drain / WC_WM_69 | TF 29312 26720 | Spring and Autumn |
| RJ-WCX-18 | WC_WM_182 | TF 28160 25029 | Spring only* |

**Only sampled in Spring as the watercourse was dry in Autumn*

4.2.10 An additional survey is due to be undertaken in late Spring 2026 on an additional unnamed drain (WC_WM_63), site WM-WCX-3, at NGR TF 29478 28840. Data from this survey cannot be included as part of this assessment. This site was visited by surveyors in 2025; however was found to be dry.

### Macrophyte survey

4.2.11 No site-specific macrophyte survey data are currently available for the watercourses within the Scheme Site Boundary. In the absence of baseline survey data, existing information will be obtained from publicly accessible sources, including a targeted search of the EA's Ecology and Fish Data Explorer. These data will be used to inform the baseline characterisation of macrophytes and to support the WFD assessment, where appropriate.

## 4.3 Water Framework Directive assessment process

4.3.1 The assessment methodology was based on guidance provided by the Planning Inspectorate (Nationally Significant Infrastructure Projects: Advice on the WFD: The WFD). This guidance was used as it is considered the best and most appropriate guidance available. This guidance outlines a three-stage process to WFD assessment: screening, scoping, and impact assessment.

### Stage 1: Screening

4.3.2 This stage identifies the ZoI, screens waterbodies that have potential to be impacted by the Scheme and sets out high-level baseline data for those waterbodies.

Screening is required to identify activities which have the potential to result in deterioration of a water body or fail to comply with the objectives of that water body. Screening also serves to identify those proposed activities (e.g. proposed construction methods) that are required to be taken through to scoping, and those activities that are unlikely to result in the deterioration of the water body.

### Stage 2: Scoping

4.3.3 Scoping is required to identify risks to receptors from a project's activities, based on the relevant water bodies and their water quality elements (including information on status, objectives, and the parameters for each water body). Potential risks to hydromorphology, biology (habitats and fish), water quality, WFD protected areas and invasive non-native species should be assessed. The scoping stage identifies which elements need to be carried forward to Stage 3 assessment.

### Stage 3: Impact assessment

4.3.4 Where assessment has been considered necessary at the scoping stage, an impact assessment is carried out for each receptor identified as being at risk in terms of potential deterioration or non-compliance with its specific objectives as set out in the RBMP because of the project. Where the potential for deterioration of water bodies is identified, and it is not possible to mitigate the impacts to a level where deterioration can be avoided, the project would need to be assessed in the context of Article 4(7) of the WFD.

4.3.5 Whilst the assessment of potential construction impacts is not required as part of a WFD assessment, these impacts may have detrimental impacts on the WFD quality elements, and construction periods may sometimes be of long duration (i.e. several years). Thus, construction impacts are considered, along with mitigation to reduce or eliminate potential impacts on the water body and WFD quality elements.

## 4.4 Consultation

4.4.1 Formal engagement with the EA was undertaken during preparation of this WFD assessment on 18 February 2026 and 17 April 2026.

4.4.2 An initial engagement meeting was held on 18 February 2026 to address EA feedback on the WFD information included within the Preliminary Environmental Information (PEI), issued as part of the Grimsby to Walpole Development Consent Order (DCO) statutory consultation. Some of the queries raised were also relevant to a separate application by National Grid Electricity Transmission plc for works in the Weston Marsh area (this assessment). A further engagement session on 17 April 2026 focused on reviewing EA comments relating to the Weston Marsh Scheme and outcomes of this WFD assessment. The principal outstanding matters related to this WFD assessment discussed with the EA are summarised below.

1) 1. Water quality monitoring during construction – mitigation measure.

4.4.3 The EA advised that water quality monitoring should be considered as a mitigation measure during construction, specifically for certain named watercourses where there may be a risk of increased turbidity or sediment runoff.

4.4.4 The watercourses identified by the EA were reviewed, and a risk-based screening was applied to determine whether water quality monitoring would be proportionate to the potential construction impacts.

4.4.5 Within the Scheme, the River Welland was identified by the EA as a potential monitoring location. However, using the risk-based screening it was concluded that water quality monitoring is not required for the River Welland. This is because the River Welland is a transitional water body characterised by naturally elevated suspended sediments, and is embanked on both banks, limiting the potential for sediment and pollution runoff from adjacent bank and activities. This conclusion is further supported by the application of best-practice construction controls and embedded mitigation measures.

4.4.6 Other matters raised by the EA have been addressed through responses to the EA and feedback provided during the engagement sessions outlined above.

## 4.5 Assumptions and Limitations

4.5.1 This WFD assessment has been undertaken using the best available data at the time of reporting. The following limitations and assumptions apply:

1) The desk-based assessment relies on publicly available datasets, including the EA's Catchment Data Explorer, BIOSYS, and National Fish Population Database. While these sources are authoritative, there may be temporal or spatial gaps in the data, particularly for smaller or less frequently monitored water bodies;

2) Macrophyte survey data is not available and therefore cannot be included as part of this assessment.

3) Aquatic macroinvertebrate surveys of drain WC_WM_63 (site WM-WCX-3) have not been included as part of the assessment. This site was visited by surveyors; however was found to be dry;

4) Only one season of macroinvertebrate data could be collected for site RJ-WCX-18 due to the watercourse being dry when visited in Autumn, and as such a full RICT analysis could not be undertaken. A full RICT analysis requires both Spring and Autumn data;

5) Ecological survey data is typically valid for up to 18 months unless otherwise specified, for example, if conditions are likely to change more quickly due to ecological processes or anticipated changes in management. The likelihood of surveys needing to be updated increases with time and is greater for mobile species or in circumstances where the habitat or its management has changed significantly since the surveys were undertaken. Factors to be considered include (but are not limited to): whether a site supports, or may support, a mobile species which could have moved on to site or changed its distribution within a site (Ref 28);

6) Field surveys were undertaken at selected locations (near water crossing points) and during specific time windows. As such, they provide a snapshot of conditions and may not capture seasonal or event-driven variability (e.g. high flows, drought conditions, or episodic pollution events);

7) The assessment assumes that all mitigation measures outlined in the Outline CEMP and operational management procedures would be implemented in full and maintained throughout the relevant Scheme phases;

8) Hydrological and geomorphological responses to construction and operational activities have been assessed based on current design information. Should the design evolve significantly, further assessment may be required to confirm continued compliance with WFD objectives;

9) The assessment assumes that all necessary environmental permits and consents (e.g. Flood Risk Activity Permits, Ordinary Watercourse Consents) will be obtained and complied with, and that any conditions attached to these consents will be adhered to;

10) The potential for cumulative effects with other developments has been considered qualitatively, based on known projects within the ZoI; and

11) Where data were not available or absent for specific water bodies or quality elements, professional judgement and analogous data from similar catchments were used to inform the assessment.

4.5.2 These limitations are not considered to materially affect the conclusions of the WFD assessment, which has been undertaken in accordance with current guidance and best practice.

# 5. Water Framework Directive Screening

## 5.1 Stage 1: Water Framework Directive Screening

5.1.1 The purpose of the WFD screening stage is to identify the extent to which the Scheme may affect WFD water bodies that lie within the ZoI (up to a 1 km buffer of the Scheme Site Boundary).

### Screening of Water Bodies

5.1.2 The Risegate Eau, the Moulton River and the Welland Transitional WFD water bodies are located within the Scheme Site Boundary. These water bodies are therefore screened in for further assessment (**Table 5.1**).

5.1.3 The Welland (Greatford Cut to tidal), Vernatt's Drain, South Holland Main Drain, and the Glen WFD water bodies are located within the ZoI but are at a sufficient distance from the Scheme activities to avoid potential effects and are screened out of further assessment.

5.1.4 No mapped groundwater body underlies the ZoI. As such, groundwater impacts at the water-body scale are not anticipated, and groundwater is scoped out of the assessment.

Table **5.1** Water Framework Directive screening of WFD water bodies

| Water Body | WBID | Consenting boundary | Screening outcome | Rationale |
|---|---|---|---|---|
| Risegate Eau | GB205031055525 | Exempt Overhead Line Works | Screened In | Within the ZoI; potential interaction with local watercourse network. |
| Moulton River | GB205031050755 | Exempt Overhead Line Works, 2WS Overhead Line Works, 4ZM Overhead Line Works and Substation Works | Screened In | As above. |
| Welland Transitional | GB530503100400 | Exempt Overhead Line Works | Screened In | As above. |
| Vernatt's Drain | GB205031050705 | It does not interact with consenting boundaries. | Screened Out | Located sufficiently far from the ZoI. |

| Water Body | WBID | Consenting boundary | Screening outcome | Rationale |
|---|---|---|---|---|
| Welland – Greatford Cut to tidal | GB205031050685 | As above. | Screened Out | As above. |
| South Holland Main Drain | GB205032050405 | As above. | Screened Out | As above. |
| The Glen | GB105031050720 | As above. | Screened Out | As above. |
| Groundwater Body | - | As above. | Screened Out | No mapped groundwater body underlies the ZoI. |

## 5.2 Baseline conditions

### Water Framework Directive Status

5.2.1 The WFD water bodies within the ZoI that have been screened in under **Section 5.1** are summarised below and grouped by their WFD Operational Catchment. Their full WFD statuses are provided in Appendix A. The location of these waterbodies in relation to each component of the Scheme are illustrated on **Figure 3.1** to **Figure 3.4**.

### The Wash TraC

5.2.2 **Welland Transitional Water Body (GB530503100400).** The Welland is a heavily modified transitional water body and is currently performing at Moderate Overall Water Body Potential, comprising Moderate Ecological Status and Fail Chemical Status. The water body is heavily modified, and the reasons for not achieving Good are disproportionately expensive measures and natural recovery constraints. The water body is targeted to achieve Good by 2021 (supporting elements) and 2063 (chemical).

### Welland Lower

5.2.3 **Moulton River Water Body (GB205031050755)**. The Moulton River has an artificial Hydromorphological designation and is currently performing at Moderate Overall Water Body Potential, comprising Moderate Ecological Potential and Fail Chemical Status. The water body is heavily modified, and the reasons for not achieving Good are technical infeasibility and unknown sources of adverse impact. The water body is targeted to achieve Good by 2027 (ecological) and 2063 (chemical).

5.2.4 **Risegate Eau River Water Body (GB205031055525)**. The Risegate Eau has an artificial Hydromorphological designation and is currently performing at Poor Overall Water Body Potential, comprising Poor Ecological Status and Fail Chemical Status. The water body is heavily modified and the reasons for not achieving Good are disproportionately expensive measures, unfavourable cost-benefit, and technical infeasibility. The water body is targeted to achieve Good status by 2063 (chemical) and Moderate ecological status by 2015.

## 5.3 Catchment Characteristics

The catchment characteristics presented below are representative of all screened in waterbodies within the ZoI.

### Catchment geology and soils

5.3.1 The bedrock geology of the ZoI comprises Oxford Clay Formation-Mudstone, which is a Jurassic shallow-marine rock. They are detrital, ranging from coarse- to fine-grained (locally with some carbonate content), forming interbedded sequences. The superficial geology comprises Quaternary tidal flat deposits, clay and silt.

5.3.2 The ZoI comprises loamy and clayey soils of coastal flats with naturally high groundwater.

### Catchment hydrology

5.3.3 There is no gauge station within the ZoI. The nearest gauge station (31002 - Glen at Kates Bridge & King Street Bridge) is approximately 20km upstream from the ZoI and monitors the River Glen. In its upper reaches, the Glen exhibits influent behaviour. Low flows are reduced by irrigation abstractions and further influenced by pumping from gravel workings, as well as groundwater abstraction outside the catchment. Since 1989, flows have also been modified by the Gwash–Glen transfer scheme.

5.3.4 The long-term gauged daily flow record for the Glen at Kates Bridge & King Street Bridge (Station 31002) spans 1960–2024 with 98% completeness. Mean flow is 1.2 $m^3/s$, and the catchment exhibits a moderately permeable response, reflected in a baseflow index (BFI) of 0.59. This indicates that groundwater contributes meaningfully to sustaining flows, but surface runoff still plays a substantial role in shaping the hydrograph.

5.3.5 Low-flow conditions are a defining feature of this station. The Q95 flow is just 0.04 $m^3/s$, demonstrating that during dry periods the river can recede to extremely low discharges, leaving it sensitive to abstraction pressure and drought sequences. Median flow (Q50) sits at 0.5 $m^3/s$.

5.3.6 In contrast, the upper end of the flow duration curve evidence rapid runoff response. The Q10 and Q5 flows (2.9 $m^3/s$ and 4.5 $m^3/s$, respectively) are several times the mean, indicating that storm events can generate sharp, short-lived peaks. This combination of modest baseflow support, very low dry-weather flows, and flashy high-flow events is typical of mixed geology catchments influenced by both groundwater and responsive surface pathways.

5.3.7 Taken together, the data show a catchment that is hydrologically constrained in Summer but capable of marked flow variability in winter, making it sensitive to abstraction and land-use change, among others.

### Historical channel change

5.3.8 A review of the earliest available Ordnance Survey mapping (Revised 1903; Published 1904) indicates that the drainage network within the ZoI has remained largely unchanged for more than a century. Although evidence suggests extensive channel realignment or modification to the wider ditch and drain system occurred prior to the 1900s, the overall configuration has remained stable since. This long-term

persistence of the drainage pattern implies continuity in the underlying geomorphological controls, with similar erosion, deposition, and channel-adjustment processes operating since the 1900s.

5.3.9 From a hydrological perspective, the inheritance of modifications implies that contemporary flow pathways, flood routing, and runoff response characteristics largely reflect the anthropogenic reconfiguration.

5.3.10 Similarly, land-use change is evident in the southern portion of the ZoI, where former pasture has progressively transitioned to residential development.

5.3.11 In conjunction, these land-use changes may therefore influence both geomorphological stability (e.g., bank erosion risk, altered sediment regimes) and hydrological functioning (e.g., reduced lag times, increased runoff volumes) at a local scale.

## 5.4 Water Framework Directive surface water quality elements

### Biological Quality Elements

#### Fish

##### Risegate Eau

Desk Study

5.4.1 The fish WFD biological quality element is classified as ‘not assessed’ within the Catchment Data Explorer for the Risegate Eau water body.

5.4.2 A search of the EA’s Ecology and Fish Data Explorer returned no relevant fish data within the Risegate Eau water body.

##### Moulton River

Desk Study

5.4.3 The fish WFD biological quality element is classified as ‘not assessed’ within the Catchment Data Explorer for the Moulton River water body.

5.4.4 A search of the EA’s Ecology and Fish Data Explorer returned no relevant fish data within the Moulton River water body.

Field Survey

5.4.5 A total of 21 fish were caught during a single run depletion survey undertaken by ecologists in 2026. Details of fish lengths and habitat composition were also collected and are detailed below (**Table 5.2**).

Table 5.2 Fish Survey Data from Lord’s Drain (WC_WM_69) from February 2026

| Common Name | Latin Name | No. of individuals |
|---|---|---|
| European Eel | *Anguilla anguilla* | 6 |

| Common Name | Latin Name | No. of individuals |
|---|---|---|
| Roach | *Rutilus rutilus* | 12 |
| 3-spined stickleback | *Gasterosteus aculeatus* | 3 |

5.4.6 European eel ranged between 180-310 mm, roach ranged between 37-105 mm and 3-spined stickleback ranged between 30-48 mm.

5.4.7 The substrate of Lord's Drain comprised predominantly of silt (90%), with some clay (10%).

5.4.8 The survey section had ditch morphology with an average depth of 55 cm and a width of 6 m, with surrounding land use arable.

### Welland Transitional

#### Desk Study

5.4.9 The fish WFD biological quality element is classified as 'not assessed' within the Catchment Data Explorer for the Welland Transitional water body.

5.4.10 A search of the EA's Ecology and Fish Data explorer returned no relevant fish data within the Welland Transitional water body.

5.4.11 A desk study search was undertaken by aquatic ecologists via the EA Ecology and Fish Data Explorer and data from the Greater Lincolnshire Nature Partnership, Lincolnshire Environmental Records Centre (GLNP LERC) on the River Welland catchment. This search highlighted two species that are likely to migrate through the transitional (i.e. estuarine) reaches of the watercourse. European eel and brown trout *Salmo trutta* were identified within the catchment. Both are Species of Principal Importance (SPI) under the Natural Environment and Rural Communities Act (NERC) 2006 (Ref 29). European eel are also listed as Critically Endangered under the IUCN Red List of Threatened Species (Ref 30).

5.4.12 European smelt *Osmerus eperlanus* were highlighted as a species likely to be present in the Welland during a consultation with the EA (February 2026). Although there are no records of European smelt for the Welland recorded in the National Fisheries Population Database, the EA provided a record from 2012 from a catch return record from the Live Fish Movement Database (managed by the Centre for Environment, Fisheries and Aquaculture Science (CEFAS)) which recorded 80 kg of smelt caught through Fyke netting. Extracts from a report published in 2013 on the status of Smelt in England and Wales, were also provided by the EA which highlighted the presence of a modest commercial smelt fishery in the Welland below Spalding in 2012. Based on this it is believed European smelt are still likely to be present in the River Welland and are a UK Biodiversity Action Plan (BAP) priority species in addition to a SPI under NERC Act 2006 (Ref 29).

### Aquatic macroinvertebrates

#### Risegate Eau

##### Desk Study

5.4.13 As of 2022, the invertebrates WFD biological quality element was classified as Poor for the Risegate Eau water body.

5.4.14 A search of the EA's Ecology and Fish Data Explorer returned aquatic macroinvertebrate data from a survey undertaken in Spring and Autumn 2025 upstream on Risegate Eau, at NGR TF 27866 31769, approximately 1 km from the Scheme. The biological metrics from the survey are presented in **Table 5.3** below.

5.4.15 No protected and/or notable species were identified in the samples. One Invasive Non-Native Species (INNS), the shrimp *Gammarus tigrinus* was recorded in the Spring sample.

5.4.16 The LIFE metric uses abundance data to assign a flow preference score to aquatic macroinvertebrate species or families present in a sample. An overall score for the site can be interpreted as an abundance-weighted average score per taxon metric. This score can be interpreted in respect of sensitivity to changes in water flow (Ref 31). The LIFE scores for this sampling location indicate the presence of taxa associated with low flow which are likely to have low sensitivity to any reduction in flow

5.4.17 The Proportion of Sediment-sensitive Invertebrates (PSI) metric aims to act as a proxy for the quantity of fine sediment at a site (Ref 32). The PSI scores classify Risegate Eau as "Heavily Sedimented" in both Spring and Autumn.

5.4.18 The Community Conservation Index (CCI) incorporates elements of taxon rarity and richness to summarise the conservation value of aquatic macroinvertebrate communities (Ref 33). The CCI scores identify the site as having an aquatic macroinvertebrate community of Moderate conservation value in both Spring and Autumn).

Table 5.3 EA biological metrics for Risegate Eau from spring and autumn Autumn 2025

| Date | WHPT-ASPT (TL2) | WHPT-NTAXA (TL2) | LIFE (TL5) | PSI (TL5) | CCI (TL5) |
|---|---|---|---|---|---|
| 15/05/2025 | 2.95 | 11 | 5.56 | 0 | 10.00 |
| 17/10/2025 | 3.71 | 18 | 5.68 | 0 | 7.22 |

WHPT = Whalley, Hawkes, Paisley, and Trigg, ASPT = Average Score Per Taxon, NTAXA = Number of scoring taxa, LIFE = Lotic-invertebrate Index for Flow Evaluation, PSI = Proportion of Sediment-sensitive Invertebrates, CCI = Community Conservation Index.

#### Moulton River

##### Desk Study

5.4.19 The invertebrates WFD biological quality element is not assessed for the Moulton River water body.

5.4.20 A search of the EA's Ecology and Fish Data Explorer returned aquatic macroinvertebrate data from a survey undertaken in Spring and Autumn 2016 upstream on Moulton Mere Drain (North), at NGR TF 29900 25000, approximately 0.7 km from the Scheme. The biological metrics from the survey are presented in **Table 5.4**.

5.4.21 No protected species were identified in the samples, however one notable water beetle species, the Nationally Scarce, *Agabus conspersus* was recorded in autumn (Ref 34). This accounts for the difference in the CCI score between the Spring and Autumn sample (3.67 and 13 respectively).

5.4.22 One INNS the New Zealand mud snail was recorded in both Spring and Autumn. It must be noted that this species is widespread throughout the UK and is now considered naturalised.

5.4.23 The LIFE scores for this sampling location indicate the presence of taxa associated with low flow which are likely to have low sensitivity to any reduction in flow.

5.4.24 The PSI scores classify Moulton Mere Drain (North) as "Heavily Sedimented" in both Spring and Autumn.

5.4.25 The CCI scores identify the site as having an aquatic macroinvertebrate community of Low conservation value in Spring and Fairly High conservation score in Autumn.

Table 5.4 EA biological metrics for Moulton Mere Drain (North) from spring and autumn 2016

| Date | WHPT-ASPT (TL2) | WHPT-NTAXA (TL2) | LIFE (TL5) | PSI (TL5) | CCI (TL5) |
|---|---|---|---|---|---|
| 27/04/2016 | 3.42 | 12 | 6.1 | 0.00 | 3.67 |
| 30/11/2016 | 3.03 | 8 | 5.75 | 0.00 | 13 |

Field Survey

5.4.26 The biological metrics calculated for the results of the aquatic macroinvertebrate surveys undertaken are presented in **Table 5.5**.

Table 5.5 Biological metrics for aquatic macroinvertebrate sites on Lord's Drain/WC_WM_69 (sites: TCPA-OHL-WCX-15; TCPA-OHL-WCX-16 overhead line crossings and WM-WCX-19 access track crossing) and drain WC_WM_182 (site: RJ-WCX-18) in Spring and Autumn 2025

| Site | Season | WHPT-ASPT (TL2) | WHPT-NTAXA (TL2) | LIFE (TL5) | LIFE EQR | PSI (TL5) | PSI EQR | CCI (TL5) |
|---|---|---|---|---|---|---|---|---|
| TCPA-OHL-WCX-15; TCPA-OHL-WCX-16 | Spring | 3.51 | 14 | 6.07 | 1.05 | 3.03 | 0.65 | 1.00 |
| | Autumn | 3.46 | 17 | 5.86 | 1.03 | 4.08 | 0.90 | 1.00 |
| | Spring | 4.25 | 21 | 5.81 | 1.01 | 6.78 | 1.44 | 4.85 |

| Site | Season | WHPT-ASPT (TL2) | WHPT-NTAXA (TL2) | LIFE (TL5) | LIFE EQR | PSI (TL5) | PSI EQR | CCI (TL5) |
|---|---|---|---|---|---|---|---|---|
| WM-WCX-19 | Autumn | 3.47 | 21 | 6.05 | 1.07 | 4.08 | 0.90 | 3.86 |
| RJ-WCX-18 | Spring | 3.63 | 7 | 6.20 | 1.07 | 10.00 | 2.13 | 1.00 |

5.4.27 The observed PSI scores indicate that all sites are Heavily sedimented. The PSI EQR scores for all sites with the exception of the TCPA-OHL-WCX-15; TCPA-OHL-WCX-16 (overhead line crossings) sampling location in spring are above the guideline threshold of 0.70 indicating there was no fine sediment pressure at the time of survey. The PSI EQR score for the spring sample at site TCPA-OHL-WCX-15; TCPA-OHL-WCX-16 (overhead line crossings) is below the threshold indicating potential fine sediment pressure at the time of survey.

5.4.28 The observed LIFE scores indicate the presence of taxa associated with Low flow at all sites which are likely to have Low sensitivity to reduced flow. The LIFE EQR scores for all sampling locations are above the guideline threshold of 0.94 indicating there was no flow stress at the time of survey.

5.4.29 The observed CCI scores classify the aquatic macroinvertebrate community at all sampling locations as being of Low conservation value.

5.4.30 No protected and/or notable species were recorded during the surveys.

5.4.31 Four INNS were recorded across the two sites on Lord's Drain (WC_WM_69), the New Zealand mud snail, the bladder snail *Physella sp*., the shrimp *Gammarus tigrinus* and the freshwater amphipod *Crangonyx floridanus/pseudogracilis*. It must be noted that all these species are widespread throughout the UK and are now considered naturalised.

5.4.32 A complete RICT analysis and overall classification for 2025 was undertaken on data from sites TCPA-OHL-WCX-15; TCPA-OHL-WCX-16 and WM-WCX-19 where two seasons of data were available. This was performed to produce a relative WFD classification score for aquatic macroinvertebrates. The output is presented in **Table 5.6**.

5.4.33 A complete RICT analysis could not be undertaken for site RJ-WCX-18 as only one season of data was obtained (a full RICT analysis requires both Spring and Autumn data). The indicative WFD classification is presented in **Table 5.6**.

Table 5.6 RICT outputs for aquatic macroinvertebrate sites on Lord's Drain (WC_WM_69) (sites: TCPA-OHL-WCX-15; TCPA-OHL-WCX-16 overhead line crossings and WM-WCX-19 access track crossing) and Drain WC_WM_182 (site: RJ-WCX-18).

| Site | Season | Index | EQR | Class | Confidence of Class (%) | Overall Classification |
|---|---|---|---|---|---|---|
| TCPA-OHL- | Spring | WHPT-APST | 0.89 | Good | 38.42 | Moderate |

| Site | Season | Index | EQR | Class | Confidence of Class (%) | Overall Classification |
|---|---|---|---|---|---|---|
| WCX-15; TCPA-OHL-WCX-16 | | WHPT-NTAXA | 0.58 | Moderate | 38.78 | |
| | Autumn | WHPT-APST | 0.89 | Good | 39.33 | |
| | | WHPT-NTAXA | 0.71 | Good | 38.28 | |
| WM-WCX-19 | Spring | WHPT-APST | 1.04 | High | 77.00 | Good |
| | | WHPT-NTAXA | 0.83 | High | 59.85 | |
| | Autumn | WHPT-APST | 0.89 | Good | 40.96 | |
| | | WHPT-NTAXA | 0.86 | High | 67.08 | |
| RJ-WCX-18 | Spring | WHPT-APST | 0.94 | High | 39.60 | Not Applicable |
| | | WHPT-NTAXA | 0.32 | Bad | 96.23 | |

5.4.34 TCPA-OHL-WCX-15; TCPA-OHL-WCX-16 (overhead line crossings) had an overall WFD classification of Moderate and WM-WCX-19 (access track crossing) an overall classification of Good.

5.4.35 An indicative classification of Bad with respect to WHPT-NTAXA and High in respect to WHPT-ASPT was obtained for RJ-WCX-18 based on Spring data only.

### Welland Transitional

#### Desk Study

5.4.36 The invertebrates WFD biological quality element is not assessed for the Welland Transitional water body.

5.4.37 A search of the EA's Ecology and Fish Data Explorer returned no relevant aquatic macroinvertebrate data within the Welland Transitional Water Body.

## Macrophytes

### Risegate Eau

#### Desk Study

5.4.38 As of 2022, the macrophytes sub-element WFD biological quality element was classified as Moderate for the Risegate Eau water body.

5.4.39 A search of the EA's Ecology and Fish Data Explorer returned data from a macrophyte survey carried out in 2025 at NGR TF 27866 31769, upstream on Risegate Eau, approximately 1km from the Scheme.

5.4.40 A total of 13 taxa were recorded, including 10 flowering plant species, two algae species and one stonewort.

5.4.41 No protected species were recorded, however two notable species, *Callitriche obtusangula* and *Potamogeton compressus* were recorded, which are listed as Least concern and Endangered respectively on the Red List (Ref 35).

5.4.42 One INNS Nuttall's Waterweed *Elodea nuttallii* was recorded.

### Moulton River

#### Desk Study

5.4.43 The macrophytes sub element WFD biological quality element is not assessed for the Moulton River water body.

5.4.44 A search of the EA's Ecology and Fish Data Explorer returned data from a macrophyte survey carried out in 2016 at NGR TF 29900 25000, upstream on Moulton Mere Drain (North), approximately 0.7 km from the Scheme.

5.4.45 A total of four taxa were recorded including three flowering plant species and one algae species.

5.4.46 No protected species were recorded, however one notable species, *Callitriche obtusangula* was recorded, which is listed as Least concern on the Red List (Ref 35).

5.4.47 No INNS were recorded.

### Welland Transitional

#### Desk Study

5.4.48 The macrophytes sub-element WFD biological quality element is not assessed for the Welland Transitional water body.

5.4.49 A search of the EA's ecology and fish data explorer returned no relevant macrophyte data within the Welland Transitional Water Body.

### Water Framework Directive habitats

#### Welland Transitional

5.4.50 A review of Multi-Agency Geographic Information for the Countryside (MAGIC) Maps Maps (Ref 16) highlighted the presence of higher and lower sensitivity habitats that intercept the Scheme.

##### Higher Sensitivity

5.4.51 The higher sensitivity habitat Saltmarsh (A2.5) was found within the footprint of the Scheme. Three records: Upper Marsh NE_2190_43460, Mid-Low NE_2190_43453 and Not Saltmarsh NE_2190_43432, were returned from the search.

##### Lower Sensitivity

5.4.52 The lower sensitivity habitat Intertidal soft sediment (A2.3), was found within the footprint of the Scheme. One record: Mudflats and sandflats not covered by seawater at low tide D_00378_204314 was returned.

## Physico-chemical quality elements

### Thermal conditions

5.4.53 Across the water bodies assessed, temperature status ranges from High (Risegate Eau) to Moderate (Moulton River). These ratings indicate generally favourable thermal regimes in the region, except for Moulton River where moderate conditions may reflect sensitivity to thermal fluctuations or limited assimilative capacity. Welland Transitional (GB530503100400) does not provide Cycle 3 thermal condition results, but is ecologically classed as Moderate.

### Oxygenation conditions

5.4.54 Dissolved oxygen (DO) conditions vary substantially between water bodies:

1) Poor: Risegate Eau.
2) Bad: Moulton River.
3) High: Welland Transitional.

5.4.55 These results highlight localised oxygen stress (particularly in Risegate Eau and Moulton River) likely driven by nutrient enrichment or restricted aeration in heavily modified channels.

### Salinity

5.4.56 Salinity-related parameters are not explicitly assessed for these freshwater systems in the Cycle 3 datasets. Welland Transitional (GB530503100400) does not provide Cycle 3 salinity results but is ecologically classed as Moderate.

### Acidification status

5.4.57 pH conditions are consistently favourable across water bodies. High pH status was recorded in all assessed water bodies. These values indicate no acidification pressures of WFD concern.

### Nutrient conditions

5.4.58 Nutrient enrichment varies and often drives ecological downgrade:

1) **Risegate Eau**: Ammonia Good, Phosphate Poor;
2) **Moulton River**: Ammonia Bad, Phosphate Poor; and
3) **Welland Transitional**: Phosphate not assessed.

5.4.59 Overall, nutrient pressures are widespread, with phosphate repeatedly emerging as a constraint on achieving Good Status.

5.4.60 Specific pollutants: Not assessed: Risegate Eau, Moulton River, Welland Transitional.

## Invasive Non-Native Species

5.4.61 During aquatic macroinvertebrate surveys conducted in 2025, four INNS were recorded within Lord's Drain (WC_WM_69), including the New Zealand mud snail, the bladder snail, the shrimp *Gammarus tigrinus* and the freshwater amphipod *Crangonyx floridanus/pseudogracilis*. Desk study searches of the WFD water bodies within the ZoI, also returned records of the New Zealand mud snail, the shrimp *Gammarus tigrinus*, and the freshwater amphipod *Crangonyx pseudogracilis/floridanus.*

5.4.62 Macrophyte desk study data identified Nuttall's waterweed within multiple WFD water bodies within the ZoI.

## Hydromorphology Quality Elements

### Quantity and dynamics of flow

5.4.63 There is currently no available stage-discharge relationship for the WFD catchments intersecting the Scheme. As a result, the quantity and dynamics of flow within these water bodies cannot be accurately quantified. The Welland Transitional is monitored for tidal levels only, via the Fosdyke Bridge Monitoring Station. Recorded tidal levels in the Welland Transitional, range from typical tidal highs and lows of 5.6 m and 0 m, respectively. These values are measured relative to mean sea level, not from the riverbed, and therefore do not provide direct insight into fluvial discharge or flow variability.

### Connection to groundwater

5.4.64 No hydrological gauging stations or WFD-designated groundwater body monitoring points are located within the ZoI. Consequently, there is no direct evidence available to confirm hydraulic connectivity between surface water and groundwater bodies in this location. In addition, no mapped groundwater body underlies the ZoI. As such, groundwater impacts at the water-body scale are not anticipated.

### River continuity

5.4.65 Flow continuity within the ZoI is constrained by the presence of multiple structures, including numerous crossings (pre-existing culverts and access tracks). The watercourses in the region are predominantly ditches and drains often with artificial pumping. The River Welland also has well defined embankments on both banks and a sluice connecting to Lord's Drain. These features may act as partial or complete barriers to sediment transport and aquatic species movement, thereby limiting longitudinal connectivity.

### River width and depth variation

5.4.66 Longitudinal variation in channel geometry across the ZoI is limited, with most watercourses exhibiting relatively uniform widths and minimal morphological diversity (ditches and drains). Aerial imagery analysis indicates the following approximate average channel widths:

1) Risegate Eau: ~8 m;
2) Moulton River: ~4 m; and
3) Welland Transitional: ~43 m

5.4.67 These consistent channel dimensions suggest a lack of natural width and depth variability, which may limit hydraulic diversity and associated habitat potential within these watercourses.

### Structure and substrate of the riverbed

5.4.68 Due to the homogeneous nature of the watercourses within the ZoI concerning channel geometry (width, depth and bed slope), riverbed characteristics are very uniform. The channel bed comprises mostly fines (sand and silt) with a plane-bed morphology, typical of straightened, heavily modified water bodies.

### Structure of riparian zone

5.4.69 The riparian zone within the ZoI is predominantly characterised by intensively managed agricultural land, interspersed with road infrastructure and associated development. Natural riparian buffers are largely absent, with limited presence of native vegetation or undisturbed bank margins. This lack of vegetated buffer strips reduces the ecological functionality of the riparian corridor, limiting its capacity to provide shading, bank stabilisation, and habitat connectivity.

## Chemical Quality Elements

### Priority substances

5.4.70 Across all assessed water bodies, Priority Substances status is generally Good, despite failures in overall chemical status driven primarily by legacy pollutants (e.g., Mercury and Polybrominated diphenyl ethers (PBDE)).

5.4.71 This indicates that, for substances classified under the Priority Substances list, concentrations meet or approach environmental quality standards across the region. The persistent chemical failures observed in the overall status are therefore not

attributable to Priority Substances, but rather to Priority Hazardous Substances such as Mercury and PBDE.

### Priority hazardous substances

5.4.72 Priority Hazardous Substances represent the main constraint on achieving Good Chemical Status within all water bodies assessed. Every water body fails chemical status due to exceedances of Mercury and PBDE, and in some cases PFOS:

1) Fail (Mercury and PBDE):
    a) Risegate Eau;
    b) Moulton River; and
    c) Welland Transitional.

5.4.73 These substances are known for persistence, bioaccumulation, and long-range transport, meaning failure is typically unrelated to localised pollution sources and instead reflects wider catchment-scale or atmospheric deposition pathways. Each water body carries a status objective of Good by 2063, based on natural recovery, acknowledging that no technically feasible or proportionate mitigation measures currently exist to accelerate compliance.

## Screening of activities

5.4.74 The Scheme comprises the key activities listed below, and the screening process is presented in **Table 5.7**.

1) Construction and use of temporary access, permanent maintenance, and substation access tracks;
2) Construction and use of temporary watercourse crossings (closed culverts);
3) Construction and use of temporary watercourse crossings (clear-span bridge);
4) Construction and use of temporary and permanent outfalls and SuDS;
5) Updating existing pylons (reconductoring);
6) Construction of new pylons;
7) Dismantling of old pylons;
8) Construction and use of a AIS;
9) Construction of channel realignment; and
10) Landscaping and environmental-mitigation.

Table 5.7 Water Framework Directive screening of activities. Full list of watercourses and associated activities in each WFD catchment is presented in Table 2.-1.

| Activity | Description | Screening outcome | Justification |
|---|---|---|---|
| **Risegate Eau (GB205031055525): Exempt Overhead Line Works** | | | |

| Activity | Description | Screening outcome | Justification |
|---|---|---|---|
| Use of maintenance access tracks | Access tracks (maintenance) in use for access to existing structures. | In | Potential for runoff, sediment mobilisation, hydromorphological disturbance near the water body resulting in alteration to aquatic habitats due to siltation. |
| Updating existing pylons (reconductoring) | Installation of temporary scaffolding and nets for reconductoring/restringing of existing pylons in close proximity to the water course | In | Potential for sediment mobilisation, hydromorphological disturbance near the water body resulting in alteration to aquatic habitats due to siltation, and disturbance of the riparian zone. |
| **Moulton River (GB205031050755): Exempt Overhead Line Works, 2WS Overhead Line Works, 4ZM Overhead Line Works and Substation Works** | | | |
| Construction and use of access tracks | Temporary construction access tracks will be constructed and used in proximity to the watercourse. Permanent maintenance and substation access tracks will be constructed to provide access to existing and proposed permanent structures. | In | Potential for runoff, sediment mobilisation and hydromorphological disturbance near the water body resulting in change to aquatic habitats. |
| Temporary watercourse crossings (closed culverts) | Installation of temporary culverts to enable access across minor channels. | In | Direct interaction with the watercourse; risk of flow alteration, sediment release, loss of aquatic habitat, mortality/harm to aquatic species increased shading and impacts to habitat connectivity. |
| Temporary watercourse crossings (single-span bridges) | Use of temporary clear-span structures to cross the channel. | In | Works occur within the riparian zone; potential disturbance during installation (e.g. noise and vibration). Shading of habitats beneath the structure resulting in loss of vegetation. |

| Activity | Description | Screening outcome | Justification |
|---|---|---|---|
| Construction of new and dismantling of old pylons | Installation of new structures near the watercourse.<br>Dismantling of old structures near the watercourse. | In | Potential for ground disturbance, including disturbance to aquatic species through noise and vibration and runoff. |
| Watercourse realignment/diversion | Localised channel adjustment to accommodate construction/operation. | In | Direct physical alteration of the watercourse, loss of habitat availability and connectivity, sediment mobilisation, run off, flow alteration, impacts to the movement and migration of aquatic species and mortality/harm to aquatic species. |
| AIS | Construction of the AIS. Works include earthworks, foundations and installation of electrical infrastructure. | In | Potential for runoff, sediment mobilisation and hydromorphological disturbance near the water body and disturbance to aquatic species through noise and vibration. |
| Landscaping and environmental-mitigation | Works involve ground reprofiling, soil movement and vegetation establishment | In | Potential for runoff, sediment mobilisation and hydromorphological disturbance near the water body and disturbance to aquatic species through noise and vibration. |
| Construction of temporary and permanent outfalls and SuDS | Installation of temporary and permanent structures near the watercourse. | In | Potential for runoff, sediment mobilisation, hydromorphological disturbance near the water body including disturbance to aquatic species through noise and vibration, and potential decrease in water quality in relation to outfall discharges. |
| **Welland Transitional (GB530503100400): Exempt Overhead Line Works** | | | |
| Updating existing pylons (reconductoring) | Installation of temporary scaffolding and nets for reconductoring of | In | Potential for sediment mobilisation, hydromorphological disturbance near the water |

| Activity | Description | Screening outcome | Justification |
|---|---|---|---|
| | existing pylons near the water course. | | body resulting in alteration to aquatic habitats due to siltation, and disturbance of the riparian zone. |

5.4.75 Those activities screened in for further assessment in **Table 5.7** are taken forward to Stage 2 (Scoping). Where listed activities are **not** screened in for a given WFD waterbody they are not included in the scoping table. These activities have been screened out for further assessment as the activities do not interact with, or impact watercourses within that WFD waterbody.

## Screening of protected areas

5.4.76 The Scheme and the surrounding ZoI do not overlap with, or lie in proximity to, any WFD Protected Areas. As a result, there are no pathways for direct or indirect effects on designated bathing waters, drinking water protected areas, shellfish waters, nutrient-sensitive catchments, or Natura 2000 sites identified under the WFD. Consequently, WFD Protected Areas are scoped out of the assessment.

# 6. Water Framework Directive Scoping

## 6.1 Stage 2: Water Framework Directive Scoping

6.1.1 Activities screened in for further assessment during Stage 1 Screening (**Table 5.1**) were taken forward to Stage 2 (Scoping).

6.1.2 The WFD scoping stage defines the level of detail required for subsequent WFD assessment, including the identification of risks to WFD receptors arising from the Scheme's activities. The scoping assessment covers the Risegate Eau (GB205031055525) and Moulton River (GB205031050755) surface water WFD water bodies and considers both the construction and operational phases (**Table 6.1**, **Table 6.2**, and **Table 6.3**). The Welland Transitional (GB530503100400) surface water body is assessed separately in accordance with Clearing the Waters for All, the EA's guidance for transitional waters, using the EA's scoping template for estuarine and coastal waters (**Table 6.4, Table 6.5** and **Table 6.6**). Activities are scoped in where a 'yes' response is recorded for 'risk to receptor' and scoped out where a 'no' response is recorded.

Table 6.1 FD scoping of the Scheme's activities against WFD quality elements for the Risegate Eau (GB205031055525). Full list of watercourses and associated activities for Risegate Eau is presented in Table 2.1.

| WFD quality element | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| **Biological Quality Elements** | | |
| Fish | Yes – Construction<br>No – Operation | **Construction:** Works adjacent to the channel (e.g. use of maintenance access tracks near the channel and reconductoring of existing pylons) are not anticipated to result in noise and vibration impacts, although they may cause deterioration in habitat/water quality from suspended sediments and construction derived pollutants in surface water run-off. Suspended sediment and construction derived pollution may have direct impacts on fish such as irritation or clogging of gills, or toxic effects such as gill or other tissue damage, as well as affecting foraging and migratory patterns due to reduced water column visibility.<br>**Operation:** Once construction works are removed and the channel/banks are restored, no significant ongoing impacts are expected on fish populations. It is anticipated there is the possibility of some increase in run off from the use of maintenance access tracks however this is expected to be minimal. |
| Invertebrates | Yes – Construction<br>No – Operation | **Construction:** Works adjacent to the channel (e.g. use of maintenance access tracks near the channel and reconductoring of existing pylons) may cause deterioration in water/habitat quality (e.g. through suspended sediments/construction derived pollution/increases in shading). Increases in suspended sediment can also directly impact aquatic macroinvertebrate communities through smothering.<br>**Operation:** Once construction works are removed and the channel/banks are restored, no significant persistent effect on aquatic macroinvertebrate populations are anticipated. It is anticipated there is the possibility of some increase in run off from the use of maintenance access tracks, however this is expected to be minimal. |
| Macrophytes and phytobenthos combined | Yes – Construction<br>No – Operation | **Construction:** Works adjacent to the channel (e.g. use of maintenance access tracks near the channel and reconductoring of existing pylons) may cause deterioration in water/habitat quality (e.g. through suspended sediments/construction derived pollution/increases in shading).<br>**Operation:** Once construction works are removed and the channel/banks are restored, aquatic vegetation is expected to recover, and there will be no significant long-term impacts. It is anticipated there is the possibility of some increase in run off from the use of maintenance access tracks, however this is expected to be minimal. |
| **Physico-chemical Quality Elements** | | |
| Thermal Conditions | No – Construction/ Operation | **Construction:** No processes (e.g. discharges) are present that would alter water temperature.<br>**Operation:** The completed development does not emit heat to the water; therefore, no thermal impact occurs in either phase. |
| Oxygenation Conditions | No – Construction/ Operation | **Construction:** Minor sediment releases may occur but are short-lived and localised, not enough to significantly deplete dissolved oxygen.<br>**Operation:** The Scheme does not involve activities that affect oxygen levels in the water column. |
| Salinity | No – Construction/ Operation | **Construction:** There is no mechanism to change salinity – the works do not introduce or remove saline water, and the site is not in a tidal zone.<br>**Operation:** No influence on salinity (the development is entirely freshwater in both Construction and Operation). |
| Acidification Status | No – Construction/ Operation | **Construction:** The Scheme will not release acidifying substances; no risk of changing the water's pH or acid status.<br>**Operation:** Likewise, the Operational development introduces no acidifying materials to the water. |
| Nutrient Conditions | No – Construction/ Operation | **Construction:** No nutrient-rich discharges (e.g., fertilisers or wastewater) are involved, so no water body enrichment is expected.<br>**Operation:** The development does not add nutrients during its use, so eutrophication risk remains unchanged. |
| **Hydromorphological Quality Elements** | | |
| Quantity and Dynamics of Water Flow | No – Construction/ Operation | **Construction:** The Risegate Eau WFD catchment and associated water bodies do not have any planned water crossings.<br>**Operation:** No water crossings present. |
| Connection to Groundwater Bodies | No – Construction/ Operation | **Construction:** The Risegate Eau has no mapped groundwater body underlying it, so activities would not affect groundwater-surface water connectivity.<br>**Operation:** No impact on groundwater connection (the development does not interact with groundwater in any phase). |

| WFD quality element | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| River Continuity | No – Construction/ Operation | **Construction:** The Risegate Eau WFD catchment and associated water bodies do not have any planned water crossings.<br>**Operation:** No water crossings present. |
| River Depth and Width Variation | No – Construction/ Operation | **Construction:** The Risegate Eau WFD catchment and associated water bodies do not have any planned water crossings.<br>**Operation:** No water crossings present. |
| Structure and Substrate of the Riverbed | No – Construction/ Operation | **Construction:** The Risegate Eau WFD catchment and associated water bodies do not have any planned water crossings.<br>**Operation:** No water crossings present |
| Structure of the Riparian Zone | Yes – Construction<br>No - Operation | **Construction:** Access and reconductoring platform installation near/on the banks may require vegetation clearance and ground disturbance, temporarily degrading bank structure, riparian habitat and saltmarsh in the vicinity of the works.<br>**Operation:** Disturbed riparian areas will be restored (regraded and replanted) after construction, so any impact on bank structure/vegetation is resolved over time with regrowth. |

Table 6.2 WFD scoping of the Scheme's activities against WFD quality elements for the Moulton River (GB205031050755). Full list of watercourses and associated activities for Moulton River is presented in Table 2-1.

| WFD quality element | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| **Biological Quality Elements** | | |
| Fish | Yes – Construction<br>No – Operation | **Construction:** Works within the channel (e.g. channel realignment, installing temporary culverts, SuDs outfalls) may result in harm/mortality to fish. Underwater noise and vibration from piling or other construction activities may result in mortality, injury or behavioural impacts such as abandonment of suitable foraging or spawning habitats, or dispersal from affected areas. Changes in flow continuity/discharge has the potential to disrupt migratory pathways and cause habitat fragmentation. Works adjacent to the channel (e.g. construction and use of access tracks, construction of new pylons, dismantling of old pylons, construction of the AIS, and landscaping for environmental mitigation near the channel(s)) are not anticipated to result in noise and vibration impacts, although they may cause deterioration in habitat/water quality from suspended sediments and construction derived pollutants in surface water run-off. Suspended sediment and construction derived pollution may have direct impacts on fish such as irritation or clogging of gills, or toxic effects such as gill or other tissue damage, as well as affecting foraging and migratory patterns due to reduced water column visibility.<br>**Operation:** Once construction works (e.g. temporary culverts and access tracks) are removed and other components completed (installation of the AIS, permanent access tracks, and environmental mitigation areas), and the realigned channel has stabilised to its new configuration with channel/banks restored, no significant ongoing impacts are expected on fish populations. It is anticipated there is the possibility of some increased run off from the use of maintenance access tracks however this is expected to be minimal. There is potential for minor behavioural avoidance near the new SuDs outfalls (during any discharge events), and potential reduction in water quality due to these discharges. It is anticipated there is the possibility of some increased noise and vibration from the substation, however mitigation is to be put in place to reduce this. |
| Invertebrates | Yes – Construction<br>No – Operation | **Construction:** Works within the channel (e.g. channel realignment, installing temporary culverts, SuDs outfalls) may result in harm/mortality to aquatic macroinvertebrates during any physical in channel works; cause habitat fragmentation (e.g. through in channel works resulting in changes flow continuity/discharge) and cause deterioration in water/habitat quality (e.g. through suspended sediments/construction derived pollution/increases in shading). Works adjacent to the channel (e.g. construction and use of access tracks, construction of new pylons, dismantling of old pylons, construction of the AIS, and landscaping for environmental mitigation near the channel(s)) are not anticipated to result in noise and vibration impacts, although they may cause deterioration in habitat/water quality from suspended sediments and construction derived pollutants in surface water run-off. Increases in suspended sediment can directly impact aquatic macroinvertebrate communities through smothering.<br>**Operation:** Once construction works (e.g. temporary culverts and access tracks) are removed and other components completed (installation of the AIS, permanent access tracks, and environmental mitigation areas), and the realigned channel has stabilised to its new configuration with channel/banks restored, no significant ongoing impacts are expected on the macroinvertebrate communities. It is anticipated there is the possibility of some increase in run-off from the use of maintenance and access tracks and the AIS, however this is |

| WFD quality element | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| | | expected to be minimal. There is potential for minor avoidance near the new SuDs outfalls (during any discharge events), and potential reduction in water quality due to these discharges. |
| Macrophytes and phytobenthos combined | Yes – Construction<br>No – Operation | **Construction:** Works within the channel (e.g. channel realignment, installing temporary culverts, and SuDs outfalls) may result in the direct loss of macrophytes during any physical in channel works; cause changes to habitat characteristics (e.g. through in channel works resulting in changes flow continuity/discharge), or cause deterioration in water/habitat quality (e.g. through suspended sediments/construction derived pollution/increases in shading). Works adjacent to the channel (e.g. construction and use of access tracks, construction of new pylons, dismantling of old pylons, construction of the AIS, and landscaping for environmental mitigation near the channel(s)) are not anticipated to result in noise and vibration impacts, although they may cause deterioration in habitat/water quality from suspended sediments and construction derived pollutants in surface water run-off.<br>**Operation:** Once construction works (e.g. temporary culverts and access tracks) are removed and other components completed (installation of the AIS, permanent access tracks, and environmental mitigation areas), and the realigned channel has stabilised to its new configuration, with channel/banks are restored, no significant ongoing impacts are expected on macrophytes. It is anticipated that there is the possibility of some increase in run off from the use of maintenance access tracks and AIS; however, this is expected to be minimal. There is potential alteration of flow due to the new SuDs outfalls (during any discharge events), and potential reduction in water quality due to these discharges. |
| **Physico-chemical Quality Elements** | | |
| Thermal Conditions | No – Construction/ Operation | **Construction**: No thermal pollution is introduced (no heat discharges), so water temperature is unaffected by the works.<br>**Operation**: The completed substation/outfall does not emit heat into the river; water temperature regimes remain natural. |
| Oxygenation Conditions | No – Construction/ Operation | **Construction**: While earthworks can release organic sediments, any effect on dissolved oxygen will be limited and short-lived (localised to work areas).<br>**Operation**: There are no continuous discharges or alterations that would affect oxygen levels in the river during normal operation. |
| Salinity | No – Construction/ Operation | **Construction**: No change to salinity occurs – the Moulton River is fresh, and the Scheme will not introduce salt or affect any tidal exchange.<br>**Operation**: The operational phase does not alter salinity (the river remains a freshwater system as before). |
| Acidification Status | No – Construction/ Operation | **Construction**: The Scheme uses no materials that would acidify the water; no impact on pH is anticipated.<br>**Operation**: During operation, the Scheme does not contribute to any acidification of the river water. |
| Nutrient Conditions | No – Construction/ Operation | **Construction**: There will be no nutrient input (e.g. no fertiliser or nutrient-rich runoff) from construction activities, so nutrient levels in the river remain unchanged.<br>**Operation**: The new infrastructure (pylons, substation, etc.) does not generate nutrient discharges; nutrient conditions stay as baseline. |
| **Hydromorphological Quality Elements** | | |
| Quantity and Dynamics of Water Flow | Yes – Construction<br>No – Operation | **Construction**: Channel realignment works and temporary culverts can alter flow patterns – for example, flows might be diverted through a bypass channel or constrained in culverts, changing local velocities and depths during construction.<br>**Operation**: The WC_WM_63 drain will be restored to a stable course (the new channel segment – R11). Overall flow volume is unchanged, but the realigned channel's geometry might cause slight local differences in velocity or depth distribution. These are designed to be minimal; thus, no significant ongoing impact on the river's flow regime is expected once operational (flow continuity and capacity are maintained). |
| Connection to Groundwater Bodies | No – Construction/ Operation | **Construction**: There is no underlying groundwater body in this area, and works are surface water focused, so groundwater surface water connectivity is not affected.<br>**Operation**: The operational Scheme does not influence groundwater levels or connectivity either. |
| River Continuity | Yes – Construction<br>No – Operation | **Construction**: In-channel construction and diversions (e.g. cofferdams during realignment) may temporarily disrupt continuity, impeding organism passage and sediment transport until the new channel is opened, connected and culverts installed.<br>**Operation**: The realigned drain (R11) is continuous (no permanent barriers). Fish and sediment continuity would be restored once the flow is routed through the new channel and all temporary culverts works are removed, so there is no long-term fragmentation of the water body. |

| WFD quality element | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| River Depth and Width Variation | Yes – Construction<br>No – Operation | **Construction**: The creation of a new channel segment (R11) and use of temporary culverts leads to local changes in channel width and depth. For example, a culvert may constrain channel width, and a newly excavated channel might initially have a different cross-section profile than the original.<br>**Operation**: The new channel is engineered to accommodate an appropriate width/depth for the river, and natural processes would further adjust its cross-section over time. Minor differences in depth or width distribution may persist in the realigned reach (until fully naturalised), but these are not expected to negatively affect the overall WFD status (they will be designed/mitigated to be hydromorphologically acceptable). Once temporary culverts are removed and the river should adjust accordingly. |
| Structure and Substrate of the Riverbed | Yes – Construction<br>No – Operation | **Construction**: Realigning the watercourse (WC_WM_63) involves excavating a new channel bed (R11); this disturbs the natural riverbed structure and substrate (removing existing bed material and introducing new substrate in the diverted section).<br>**Operation**: The riverbed within the realigned section would be rehabilitated using appropriate substrate (e.g. gravel and sediment recovered from the original bed) and is expected to stabilise over time through natural sediment transport processes. Minor artificial sediment aprons may form locally at new SuDS outfalls; however, discharges within the watercourses are expected to disperse sediments, allowing the bed substrate structure to revert to a natural condition. As such, no widespread or long-term degradation of bed condition is anticipated. |
| Structure of the Riparian Zone | Yes – Construction<br>No - Operation | **Construction**: The works will involve the removal and modification of riparian vegetation and riverbank structure, particularly where channel realignment is required (R11), in the vicinity of the clear-span bridge works, and where new infrastructure (e.g. the substation) is located close to the riverbank. These activities would include vegetation clearance, bank regrading, and temporary soil exposure, resulting in short-term effects on riparian habitat.<br>**Operation**: Extensive landscaping and mitigation planting would be undertaken. The new channel's banks and any disturbed areas would be restored with vegetation. Over the operational period, the riparian zone would regenerate; no permanent loss of riparian function is expected (the riparian structure will be reinstated, though full maturity of vegetation will take time). |

## Transitional water bodies

6.1.3 The Welland Transitional (GB530503100400) surface water body is assessed separately in accordance with Clearing the Waters for All, the EA's guidance for transitional waterbodies. The results of this assessment are presented in **Table 6.3** to **Table 6.5** using the EA's scoping template for estuarine and coastal waters. For consistency, the Welland is also assessed using the same WFD scoping tables applied to the Moulton River and Risegate Eau waterbodies (**Table 6.1** and **Table 6.2**), which assess the Scheme's activities against WFD quality elements. The WFD scoping stage defines the need for, and level of detail required in, any further WFD assessment.

### Hydromorphology

6.1.4 **Table 6.3** assesses the potential impact of the Scheme against the WFD hydromorphology receptors for the screened transitional water bodies using the Clearing the Waters for All guidance.

Table 6.3 WFD scoping of the Scheme activities against WFD hydromorphology receptors for screened in transitional water body (Welland Transitional (GB530503100400)).. Full list of watercourses and associated activities for Welland Transitional is presented in Table 2.1.

| Consider if the activity may impact hydromorphology: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| Could the Scheme impact the hydromorphology (e.g., morphology or tidal patterns) of a water body at High Status? | No | The Welland is not at High Status, and the Scheme does not interact with any high-status water bodies. No pathway exists for hydromorphological effects on a high status receptor. |
| Could the Scheme significantly impact the hydromorphology of any water body? | Yes | Although no significant in-channel works are proposed within the River Welland WFD water body that could impact the Hydromorphology. Activities within the adjacent Moulton River WFD water body, including temporary watercourse crossings (e.g. culverts), channel realignment, and access track construction, could result in short-term changes to flow patterns due to runoff. These activities therefore represent potential hydromorphological impact pathways requiring further consideration. However, significant effects on the River Welland from the Moulton River waterbody is considered unlikely, as the hydrological connection via Lord's Drain is controlled by a managed sluice, limiting the potential for alterations in flow regime, bank structure, bed substrate, or riparian condition to be transmitted to the Welland. In addition, the Welland is embanked on both banks, |

| Consider if the activity may impact hydromorphology: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| | | preventing construction-related runoff from directly entering the channel. |
| Is the Scheme in a water body that is heavily modified for the same use as your activity? | No | Although the Welland is modified in places, it is not designated as a Heavily Modified Water Body (HMWB) for the same purpose as the Scheme. The works do not align with the designated modification use (e.g., navigation, flood protection), so this receptor is scoped out. |

### Biology

6.1.5 **Table 6.4** assesses the potential impact of the Scheme against the WFD biological receptors for the screened transitional surface water bodies using the Clearing the Waters for All guidance. Although the Welland Transitional water body is not assessed for biological quality elements it is used as a migratory pathway for various fish species assessed in upstream water bodies including the Moulton River and Risegate Eau. Scoping therefore considers the potential for direct impacts on fish and indirect impacts on fish passage.

6.1.6 The assessment of biological receptors also requires consideration against the presence of higher and lower sensitivity habitats. The Scheme could potentially impact upon:

1) Lower sensitivity habitats within the Welland transitional water body:
    a) Intertidal soft sediment (A2.3) (63.28ha).
2) Higher sensitivity habitats within the Welland transitional water body:
    a) Saltmarsh (A2.5) (516.45ha).

Table 6.4 WFD scoping of the Scheme activities against WFD biological receptors for screened in transitional water body (Welland Transitional (GB530503100400)). Full list of watercourses and associated activities for Welland Transitional is presented in Table 2.1.

| Consider if the footprint of the activity may impact the biological receptors: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| Is the footprint of the Scheme 0.5 $km^2$ or larger? | Yes | The footprint of the Scheme exceeds 0.5 $km^2$ and is approximately 1.54 $km^2$, based on the calculated area within the Scheme Site Boundary. The Scheme does not involve any in-channel works within the Welland Transitional water body; however, overhead lines forming part of the Scheme footprint cross the water body. Bankside construction associated with temporary reconductoring platforms could result in localised effects on the water body, including sediment |

| Consider if the footprint of the activity may impact the biological receptors: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| | | mobilisation, noise, and vibration, with the potential to affect biological receptors.<br>In addition, construction activities within the adjacent Moulton River WFD water body could lead to increased suspended sediment, which may have the potential to affect migratory fish and other aquatic species within the Welland. However, significant effects on the River Welland are considered unlikely, as hydrological connectivity is limited to a managed sluice at Lord's Drain, and the Welland is embanked on both banks, preventing construction-related runoff from directly entering the channel. |
| Is the footprint of the Scheme 1% or more of the water body's area? | No | The footprint of the Scheme (1.54km$^2$) is larger than the Welland Transitional surface area (1.37 km$^2$). The footprint of the Scheme within the boundary of the Welland Transitional water body (0.0037km$^2$) is <1% of the water body area. The footprint of the Scheme within the water body boundary comprises of overhead lines, with construction of reconductoring platforms in close proximity on the banks of the water body. The reconductoring platform could cause impacts to biological receptors through sediment mobilisation that could impact biological receptors within the Welland. |
| Is the footprint of the Scheme within 500m of any higher sensitivity habitat? | Yes | The Scheme involves the construction of temporary reconductoring platforms on the banks of the Welland transitional water body, in close proximity to and within 500m of the higher sensitivity habitat: Saltmarsh (A2.5 / NE_2190_43438 / NE_2190_43453 / NE_2190_43432). This could impact the habitat through sediment mobilisation and run off. Increases in suspended sediment from this activity and those from adjacent bank construction works in Moulton River waterbody (e.g. channel realignment, temporary culverts, access tracks and landscaping, etc.) could impact the habitat. However, significant effects on the River Welland from the adjacent Moulton River water body are considered unlikely given that there is limited hydrological connection (only via Lord's Drain sluice) and the Welland is embanked on both its right and left bank |

| Consider if the footprint of the activity may impact the biological receptors: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| | | preventing any construction related runoff from directly entering the Welland channel. With mitigation relating to sediment run off in place and dilution of any sediment laden water from upstream upon entrance to the Welland water body, it is anticipated there will be no deterioration of the saltmarsh. |
| Is the footprint of the Scheme 1% or more of any lower sensitivity habitat? | No | The footprint of the Scheme is in close proximity to and overlays 270.57m$^2$ of the lower sensitivity habitat: Intertidal soft sediment (A2.3 / D_00378_204314), within the Welland transitional water body. This is <1% of the intertidal soft sediment habitat present within the Welland transitional water body. There are some potential impacts to this habitat relating to sediment mobilisation and suspended sediment, however with embedded mitigation in place it is anticipated there will be no deterioration of the intertidal soft sediment. |
| Biology – Fish | | |
| Is the Scheme in an estuary and could it affect fish in and outside the estuary, could it delay or prevent fish entering it and could affect fish migrating through the estuary? | Yes | The footprint of the Scheme overlaps with an estuarine water body. While no in-channel works are proposed within the estuary, the construction of reconductoring platforms in close proximity to the water body could result in localised effects on migratory fish species, including European smelt, European eel, and brown trout, through sediment runoff and/or noise and vibration.<br>Construction activities within adjacent water bodies, such as the Moulton River water body, which supports migratory European eel, could also affect fish passage. In-channel works within the Moulton River (e.g. channel realignment, installation of temporary culverts, and construction of access tracks near the channel) may result in potential harm or mortality to fish during physical works, displacement from suitable habitats, or dispersal from affected areas due to underwater noise and vibration. These activities could also disrupt migratory pathways or lead to habitat fragmentation, for example through changes in flow continuity or discharge, and may result in temporary deterioration of water or habitat quality due to increased suspended sediments, |

| Consider if the footprint of the activity may impact the biological receptors: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| | | construction-derived pollution, or increased shading. |
| Could the Scheme impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, chemical change or a change in depth or flow)? | Yes | The Scheme involves the construction of reconductoring platforms near the water body which could cause ground disturbance and increased suspended sediment in run off. The Scheme includes realignment works within the Moulton River water body which is upstream/adjacent of the Welland transitional water body. There is the potential for impacts on fish from increased suspended solids, loss of habitat continuity, underwater noise and vibration. There is the potential for impacts on the migratory species such as European smelt, European eel, and brown trout which pass through the Welland water body during migration. |
| Could the Scheme cause entrainment or impingement of fish? | No | No direct in channel works are to occur within the Welland transitional water body and therefore there is no risk of entrainment and impingement of fish. |

### Water quality

6.1.7 **Table 6.5** assesses the potential impact of the Scheme against the WFD water quality receptors using the Clearing the Waters for All guidance for the Welland Transitional (GB530503100400) water body.

Table 6.5 WFD scoping of the Scheme activities against WFD Water Quality receptors for screened transitional water body (Welland Transitional (GB530503100400)). Full list of watercourses and associated activities for Welland Transitional is presented in Table 2.1.

| consider if the footprint of the activity may impact water quality: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| Could the Scheme affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring–neap tidal cycle (≈14 days)? | No | Construction related effects (e.g. sediment mobilisation during temporary works) would be short-term, localised and not sustained beyond the tidal cycle. No long-term discharges or activities capable of altering temperature, salinity, oxygenation, nutrients or microbial conditions are proposed. |
| Is the Scheme in a water body with a history of harmful algae? | No | The Scheme does not introduce nutrient sources or conditions that promote algal blooms, and the Welland is not identified as having a history of harmful algal events relevant to the activity. |

| consider if the footprint of the activity may impact water quality: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| Is the Scheme in a water body with a phytoplankton status of moderate, poor or bad? | No | The Scheme does not influence phytoplankton drivers (nutrients, light, salinity, temperature). No pathway exists for deterioration of phytoplankton status. |
| If your activity uses or releases chemicals (e.g., through sediment disturbance or building works), consider if the chemicals are on the Environment Quality Standards Directive (EQSD) list. | No | The Scheme does not involve the use or release of EQSD-listed chemicals. Construction materials are controlled, and no chemical inputs to the water environment are anticipated. |
| If your activity uses or releases chemicals (e.g., through sediment disturbance or building works), consider if it disturbs sediment with contaminants above CEFAS Action Level 1. | No | No dredging or deep sediment disturbance is proposed. Temporary in-channel works are shallow and localised, with no evidence of contaminated sediments requiring CEFAS Action Level assessment. |
| If your activity has a mixing zone (e.g., discharge pipeline or outfall), consider whether the chemicals released are on the EQSD list. | No | The Scheme does not include any discharges, outfalls or mixing zones to this water body. Therefore, no EQSD-listed substances will be released. |

### WFD quality elements

6.1.8 **Table 6.6** assesses the potential impact of the Scheme against each of the WFD quality elements for the Welland Transitional water body.

Table 6.6 WFD scoping of the Scheme's activities against WFD quality elements for the screened in transitional water body (Welland Transitional (GB530503100400)). Full list of watercourses and associated activities for Wellend Transitional is presented in Table 2.1.

| WFD quality elements: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| Biological Quality Elements | | |
| Fish | Yes – Construction<br>No – Operation | **Construction:** Works adjacent to the channel (e.g. reconductoring of existing pylons) may cause fish to abandon suitable habitats or lead to dispersal from affected areas (e.g. through noise and vibration); disrupt migratory pathways/cause habitat fragmentation (e.g. through noise/vibration) or cause deterioration in water/habitat quality (e.g. through suspended sediments/construction-derived pollution). Works in adjacent water bodies (e.g. Moulten River water body: channel realignment, installing temporary culverts, and access tracks near the channel) may result in harm/mortality to fish during any physical in channel works; cause fish to abandon suitable habitats or lead to dispersal from effected areas (e.g. through noise and vibration); disrupt migratory pathways/cause habitat fragmentation (e.g. through noise/vibration or in channel works resulting in changes flow continuity/discharge) or cause deterioration in water/habitat quality (e.g. through suspended sediments/construction derived pollution/increases in shading). However, there is limited hydrological connectivity of the Moulton River waterbodies and the Welland due to the large embankments on the right and left bank of the River Welland, therefore impacts from construction run-off would be negligible.<br>**Operation:** Once construction works (e.g. reconductoring of existing pylons in addition to works upstream/adjacent waterbodies) are completed and the realigned channel has stabilised its new configuration (within the Moulton River waterbody), no significant ongoing impacts are expected on fish populations. It is anticipated there is the possibility of some increased noise and vibration and potential increase in run off from the use of maintenance tracks however this is expected to be minimal. |

| WFD quality elements: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| Benthic Invertebrates | Yes – Construction<br>No – Operation | **Construction:** Works adjacent to the channel (e.g. reconductoring of existing pylons) in addition to works within adjacent water bodies (Moulton River), may cause deterioration in water/habitat quality (e.g. through suspended sediments/construction derived pollution). Any increases in suspended sediment can also directly impact aquatic macroinvertebrate communities through smothering. However, there is limited hydrological connectivity between the adjacent Moulton River waterbodies and the River Welland due to the large embankments on the right and left bank of the River Welland, therefore impacts from construction run-off from the Moulton River water body would be negligible.<br>**Operation:** Once construction works (e.g. reconductoring of existing pylons) are completed, no significant ongoing impacts are expected on benthic invertebrate populations. It is anticipated there is the possibility of some increase suspended sediment in run off from tracks used for maintaining infrastructure. However, there is limited hydrological connectivity between the adjacent Moulton River waterbodies and the River Welland due to the large embankments on the right and left bank of the River Welland, therefore impacts from construction run-off from the Moulton River water body would be negligible. |
| Phytoplankton | Yes – Construction<br>No – Operation | **Construction:** Works adjacent to the channel (i.e. reconductoring of existing pylons) in addition to works adjacent to and within the channel within adjacent water bodies (i.e. Moulton River waterbody), may cause deterioration in water/habitat quality (e.g. through suspended sediments/construction derived pollution). Additionally increased suspended sediment could reduce light penetration impacting the ability of phytoplankton to photosynthesise. There is limited hydrological connectivity between the adjacent Moulton River waterbodies and the River Welland due to the large embankments on the right and left bank of the River Welland, therefore impacts from construction run-off from the Moulton River water body would be negligible.<br>**Operation:** Once construction works are completed (i.e. reconductoring of existing pylons), no significant ongoing impacts are expected on phytoplankton populations. It is anticipated there is the possibility of some increase in run off from the use of maintenance tracks however this is expected to be minimal. However, there is limited |

| WFD quality elements: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| | | hydrological connectivity between the adjacent Moulton River waterbodies and the River Welland due to the large embankments on the right and left bank of the River Welland, therefore impacts from construction run-off from the Moulton River water body would be negligible. |
| Macroalgae | Yes – Construction<br>No – Operation | **Construction:** Works adjacent to the channel (i.e. reconductoring of existing pylons) in addition to works within adjacent water bodies (i.e. Moulton River waterbody), cause deterioration in water/habitat quality (e.g. through suspended sediments/construction derived pollution) and/or mortality of macrophyte species. Additionally increased suspended sediment could reduce light penetration impacting the ability of macroalgae to photosynthesise. There is limited hydrological connectivity between the adjacent Moulton River waterbodies and the River Welland due to the large embankments on the right and left bank of the River Welland, therefore impacts from construction run-off from the Moulton River water body would be negligible.<br>**Operation:** Once construction works (i.e. reconductoring of existing pylon) are completed, no significant ongoing impacts are expected on macroalgae. It is anticipated that there is the possibility of some increase in runoff from the use of environmental mitigation and maintenance tracks; however, this is expected to be minimal. |
| Chemical/Physico-Chemical Quality Elements | | |
| Turbidity | Yes - Construction<br>No - Operation | **Construction**: Upstream/adjacent groundworks and any in-channel activities may cause short-term increases in turbidity (suspended sediment in the water column). This is expected during, for example, during the instillation of temporary reconductoring scaffolding and site runoff, but effects will be temporary and localised, dissipating once construction stops and erosion controls take effect. The River Welland is also embanked on both its left and right bank – limiting its hydraulic connectivity to adjacent banks, therefore run-off from adjacent bank construction activities is limited/negligible.<br>**Operation**: No ongoing turbidity impacts – after construction, the river's turbidity levels return to baseline, and the Scheme does not generate suspended sediment. |

| WFD quality elements: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| Water Temperature | No – Construction/Operation | **Construction**: No pathway for thermal change – the works do not involve heat discharges or significant removal of shading such that water temperature would change.<br>**Operation**: The finished project does not emit heat to the water or alter temperature regimes, so water temperature remains unaffected in both phases. |
| Oxygenation Conditions | No - Construction/Operation | **Construction**: Slight, localised reductions in dissolved oxygen may occur if organic rich sediment is stirred up (as microbes consume oxygen to decompose it), but these would be very short-lived and not significant enough to harm aquatic life.<br>**Operation**: There are no activities or discharges during the operational phase that would deplete oxygen in the water, so oxygen levels remain at natural background. |
| Nutrient Conditions | No - Construction/Operation | **Construction**: The Scheme does not introduce nutrient-rich effluents (no fertilisers, manure, or wastewater discharge). Any runoff is managed by SuDS to filter sediments without adding nutrients. Therefore, no increase in nitrogen or phosphorus levels is expected.<br>**Operation**: Similarly, the Scheme itself does not generate nutrient inputs, so no eutrophication risk or change in trophic status will occur. |
| Tributyltin compounds | No - Construction/Operation | **Construction**: No risk – tributyltin (TBT) is typically associated with marine anti-fouling paints and contaminated sediments. The Scheme does not use or disturb materials containing TBT (and no extensive dredging of any historically contaminated estuarine sediment is planned).<br>**Operation**: The Scheme has no marine vessels or TBT sources; hence, there is no impact regarding TBT in either phase. |
| Hydromorphological Quality Elements | | |
| Depth Variation | Yes – Construction<br>No - Operation | **Construction**: Some construction activities can cause temporary changes in local water depth profiles. For instance, if a temporary scaffolding work platform is installed at the river's edge for the reconductoring, the water depth in that immediate area may shallow slightly, and flow might divert around it. These modifications are strictly short-term and reversible – they will be removed once construction is done. |

| WFD quality elements: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| | | **Operation**: The river's depth and tidal range revert to natural conditions after works; the Scheme does not include any in-channel structures, so no permanent alteration of depth variation in the estuary occurs. |
| Quality, Structure and Substrate of the bed | Yes – Construction<br>No - Operation | **Construction**: There is potential for localised disturbance of the riverbed substrate during temporary scaffolding installation/construction (e.g. if any sediment is dislodged by machinery/personnel). Such disturbance is confined to the construction footprint and might slightly alter bed composition (by deposition of fine sediment or removal of small amounts of material). These effects are temporary, and the bed will naturally re-settle or can be restored once work is complete.<br>**Operation**: No physical changes to the bed persist into operation – the bed's structure and composition will return to baseline conditions as sediments redistribute with normal flow and tidal action. |
| Structure of the intertidal zone | Yes – Construction<br>No - Operation | **Construction**: Works extend into the intertidal zone of the transitional water body (reconductoring platform), potentially impacting the freshwater portion of the channel such as so mudflats, saltmarsh, and other intertidal habitats. Consequently, the structure and ecology of the intertidal zone (e.g. mudflat surfaces, foreshore features) could be impacted during platform construction.<br>**Operation**: Once construction activities have been completed the platform will be removed. |
| Freshwater Zone | Yes – Construction<br>No - Operation s | **Construction**: The interface where the river's freshwater meets the estuarine water (the freshwater zone of the transitional water) could experience minor, temporary changes during construction. For example, an increase in sediment load from upstream/adjacent works might create a larger turbidity plume at the river mouth, or slight alterations in flow as water is managed around works may affect how freshwater flows into the estuary. These changes are short-lived and do not permanently alter the mixing characteristics. However, the River Welland is embanked on both its left and right bank – limiting its hydraulic connectivity to adjacent banks, therefore run-off from adjacent bank construction activities is limited/negligible. |

| WFD quality elements: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| | | **Operation**: Once construction ends, the freshwater–estuarine interaction returns to normal – no ongoing changes to flow patterns or salinity distribution at the interface are anticipated. |
| Wave Exposure | No – Construction/Operation | **Construction**: No impact pathway – the Scheme is inland/riverine and does not involve structures that protrude into the estuary or coast. It will not affect coastal processes or the exposure of the shoreline to wave action.<br>**Operation**: The Scheme does not alter the estuary's morphology or any coastal feature, so wave exposure and tidal dynamics remain unchanged in both construction and operation. |

### Protected areas and INNS

6.1.9 Table 6.7 assesses the potential impact of the Scheme against the WFD Protected Areas and INNS receptors.

Table 6.7 WFD scoping of the Scheme activities against WFD Protected Areas and INNS receptors.

| Consider if the activity may impact protected areas or INNS: | Risk to receptor (Yes/No) | Scoping outcome reasoning |
|---|---|---|
| Is the Scheme within 2km of any WFD protected area? | No | The Scheme is not within 2 km of any WFD protected area. |
| Could the Scheme introduce or spread INNS? | Yes | The Scheme could introduce or spread INNS. |

## Scoping summary

6.1.10 The summary of the WFD scoping stage is provided in **Table 6.8**. No operational impacts have been identified in the scoping phase of the WFD assessment, the below summary therefore summarises the identified construction impacts following the scoping stage of the assessment.

Table 6.8 Scoping summary against WFD receptors.

| Receptor: | Potential risk to receptor without mitigation | Scoping outcome reasoning |
|---|---|---|
| **Risegate Eau (GB205031055525): Exempt Overhead Line Works; and Moulton River (GB205031050755): Exempt Overhead Line Works, 2WS Overhead Line Works , 4ZM Overhead Line Works and Substation Works.** | | |
| Hydromorphology | Yes | Temporary culverts and channel realignment may alter local flow patterns, riverbed/substrate, and riparian structure; potential temporary effects on continuity (sediment/biota). (See **Table 6.1** and **Table 6.2** Quantity and Dynamics of Water Flow, River Continuity, River Depth and Width Variation, Structure and Substrate of the Riverbed, Structure of the Riparian Zone – all "Yes") |
| Biology Habitats | Yes | Works within and adjacent to the channel may result in harm/mortality to aquatic macroinvertebrates and macrophytes during any physical in-channel works; cause habitat fragmentation and cause deterioration in water/habitat quality and changes to habitat characteristics. (See **Table 6.1**(See **Table 6.1** and **Table 6.2:** Invertebrates; Macrophytes and Phytobenthos Combined – both "Yes") |
| Biology Fish | Yes | Works within and adjacent to the channel may result in harm/mortality to fish (including European eel) during any physical in channel works; cause fish to abandon suitable habitats or lead to dispersal from affected areas; disrupt migratory pathways/cause habitat fragmentation or cause deterioration in water/habitat quality. Some longer-term impact in relation to noise and vibration from the substation is expected. (See **Table 6.1**(See **Table 6.1** and **Table 6.2**: Fish – "Yes") |
| Water Quality | No | No sustained changes to temperature, oxygenation, salinity, acidification, or nutrients are expected; any sediment release would be localised and short-term. (**Table 6.1**and **Table 6.2**: All Physico-chemical Quality Elements – "No") |
| Protected Areas | No | Not within 2 km of a WFD protected area. (**Table 6.7)** |
| Invasive Non-native Species | Yes | Construction activities present a pathway for transfer/spread (**Table 6.7**) |

| Receptor: | Potential risk to receptor without mitigation | Scoping outcome reasoning |
|---|---|---|
| **Welland (GB530503100400): Exempt Overhead Line Works** | | |
| Hydromorphology | Yes | While not at High Status nor designated as HMWB for the same use, construction activities in adjacent waterbody (Moulton River) (e.g. temporary culvert works, channel realignment, and access track construction) may temporarily affect flow patterns, bed, banks and riparian condition. (See **Table 6.3** Hydromorphological Quality Elements – Depth Variation, Bed Substrate, Freshwater Zone – "Yes") |
| Biology Habitats | Yes | Construction phase sediment mobilisation and bed disturbance from works taking place on the banks of the Welland, may temporarily affect benthic invertebrates and aquatic vegetation (e.g. reduced light penetration, smothering) in addition to the higher and lower sensitivity habitats in close proximity to the Scheme. (See **Table 6.4**: Benthic Invertebrates, Macroalgae – "Yes") |
| Biology Fish | Yes | Construction phase sediment mobilisation and noise/vibration disturbance from works taking place on the banks of the Welland, in addition to impacts from upstream/adjacent water bodies, may temporarily affect fish behaviour, migration and habitat use. (See **Table 6.4**: Fish – "Yes") |
| Water Quality | Yes | Short-term increases in turbidity and minor reductions in oxygenation may occur during construction; no long-term discharges or EQSD substances are involved. (See **Table 6.5:** Turbidity – "Yes"; Oxygenation Conditions – "No") |
| Protected Areas | No | Not within 2 km of a WFD protected area. (**Table 6.7**) |
| Invasive Non-native Species | Yes | Construction activities present a pathway for transfer/spread (**Table 6.7**) |

# 7. Detailed Impact Assessment

## 7.1 Construction impacts

### Potential generic construction impacts of the Scheme on Water Framework Directive quality elements

7.1.1 Construction is currently programmed to commence in 2028 and be completed by 2031. As such, the Scheme has the potential to result in short-to medium-term effects on the water environment during this period. While construction activities will occur over approximately three years, recovery processes, such as riparian vegetation regrowth and channel adjustment following culvert removal and channel realignment, are expected to continue beyond 2031. It is therefore important to consider construction-related impacts on WFD quality elements, mitigation measures, and overall WFD status.

7.1.2 Mitigation measures set out in the CEMP should be implemented to avoid or minimise potential impacts on identified water bodies during construction. Potential effects may extend beyond the immediate site to upstream and downstream water bodies, and these pathways should be considered within the assessment to reduce risks to WFD receptors.

7.1.3 Construction activities may also adversely affect fluvial geomorphological processes, with consequent effects on Hydromorphological, Biological and Physico-chemical quality elements. Specific geomorphological impacts associated with the construction phase are therefore considered below.

### Assessment of the Scheme against Water Framework Directive quality elements

7.1.4 The objectives of the mitigation measures outlined in this section are to avoid/ prevent, reduce or offset potential impacts.

7.1.5 Mitigation during the construction phase is essential to avoid, prevent or reduce potential impacts on WFD Hydromorphological, Biological and Physico-chemical quality elements.

7.1.6 These measures address all identified construction risks, including fine sediment release, pollution incidents (fuel, chemicals, concrete washout), disturbance to banks and bed, alterations to flow pathways, loss of continuity, impacts on riparian habitat, and risks associated with INNS. The measures will be fully incorporated into the final outline CEMP.

7.1.7 The mitigation measures used for the Scheme comprise those presented in **Table 7.1**, with the full text provided in the outline CEMP. These mitigation measures include, but are not limited to:

1) Fine sediment and pollution prevention (W02, W05, W09, AQ01, GG04, GG13, GG14, GG20, GH04, GH06);

2) Bed and bank protection (W02, W03, W04);

3) Flow and water quality protection (W04, W06, W11, W12, GG14);

4) Riparian and bankside protection (W02, W03, W04, H04, LV01, GG05);

5) Continuity and connectivity (fish passage) (B01, B09, B10, B11, B12, B14);

6) Sediment transport and scour management (W02, W04, W06, W11, GG14);

7) Noise and vibration control for fish (B10, B14, NV01, NV03, GG09); and

8) Biosecurity for INNS (B04).

7.1.8 In addition, the outline CEMP also includes the following general mitigation measures which are also relevant to the management of impacts upon the water environment:

1) Regulatory compliance and stand-off distances from watercourses and flood defences (W02, W04);

2) Good practice for open cut crossings and vehicle access points (e.g. pollution booms, silt fencing, refuelling restrictions) (W02, W05, W09, AQ01, GG04, GG13, GG14, GG20, GH04, GH06);

3) Retention of riverbank and in-channel vegetation and provision of natural substrate in temporary culverts (W02, W03, GG05, LV01);

4) Temporary culvert and bridge design for safe plant and equipment crossing, with appropriate hydraulic capacity (W04);

5) Compliance with discharge consent conditions, including water quality and volume limits (GG14, W05, W06);

6) Surface water drainage design for haul roads and compounds to minimise flood risk and preserve floodplain function (W06, W11);

7) Flood risk preparedness and emergency response planning (e.g. Floodline and Met Office alerts) (W07, GG04);

8) Protection of private water supplies during construction, with contingency for alternative supply if affected (W09);

9) Spill response and notification procedures for incidents affecting private water supplies (W09, GG20);

10) Management and reinstatement of severed land drainage systems (W02, W04); and

11) Implementation of a Drainage Management Plan (DrMP) using SuDS principles for runoff control, treatment and attenuation (W11).

7.1.9 Together, these measures ensure that construction activities are undertaken in a manner consistent with WFD objectives and do not cause deterioration to any water body or compromise its ability to reach GEP/Status.

7.1.10 For the assessment of construction impacts, fluvial geomorphology has been separated into three elements, the sediment regime, channel morphology and fluvial processes. An ecology element is also included to outline potential impacts on habitats and species. **Table 7.1** outlines the potential impacts on these elements during the construction of the Scheme. The main potential impacts relate to an increase in fine sediment delivery, a change in natural fluvial processes, and degradation of downstream water quality and potential smothering of habitats.

7.1.11 In addition, weather conditions would also influence the severity of impacts. Many of these impacts would worsen with intense or prolonged rainfall events during the construction phase. This is however accounted for within the measures included within the outline CEMP (W07).

Table 7.1 Potential construction impacts on the WFD quality elements and their associated mitigation measures.

| WFD Quality Element | Potential impacts | Relevant mitigation |
|---|---|---|
| | **Risegate Eau** (GB205031055525): Exempt Overhead Line Works; **Moulton River** (GB205031050755): Exempt Overhead Line Works, 2WS Overhead Line Works, 4ZM Overhead Line Works, and Substation; and **Welland Transitional** (GB530503100400): Exempt Overhead Line Works. | |
| Biological Quality Elements | | |
| Composition and Abundance of Aquatic Flora | Land take, sedimentation and water quality: Construction works (culverts for watercourse crossings causing loss of habitat areas, runoff from bare ground, etc.) may result in the direct loss of macrophytes and introduce fine sediment to watercourses, which can smother aquatic plants and reduce light penetration. Accidental releases of fuel or cement raise pH or pollutants, stressing or killing sensitive macrophytes. Removal of bankside vegetation and in-channel vegetation during installation of temporary culverts in addition to redirected flows in new channels can temporarily reduce composition, abundance and habitat for aquatic flora until vegetation regrows. Introduction of invasive non-native plant species (INNS) via equipment or soil can out-compete native aquatic plants and destabilise habitats.<br><br>**Site specific detail:** Three IUCN Red List macrophyte species occur within water bodies impacted by the Scheme: *Callitriche obtusangula* (Risegate Eau and Moulton River) and *Potamogeton compressus* (Risegate Eau). *Callitriche obtusangula* and *Potamogeton compressus* may be impacted by works in and adjacent to the channel(s), through the installation of temporary culverts, channel realignment and run off, causing smothering and reduction in water quality. | • W02, W03, GG05, LV01: Re-establish riparian vegetation promptly after works to restore habitat and stability.<br>• W02, GG13, GG14, GG20: Follow pollution prevention guidelines (e.g. designated refuelling areas, spill kits) to avoid fuel, oil or concrete entering water.<br>• W02, W04, W12, GG14: Construct watercourse diversions “offline” and only divert flow once the new channel is stable to minimise sediment release.<br>• B01, W02, GG05, H04, LV01: Prevent loss of aquatic, marginal and riparian habitats.<br>• W02, GG13, GG14, GG20: Install silt fences, cutoff drains, and settling ponds around works to trap sediment runoff; phase vegetation clearance to limit exposed soil at any one time.<br>• GG14: Maintain buffer zones and implement wheel washes to prevent dirt tracking into water. |
| Composition and Abundance of Macroinvertebrate Fauna | Habitat Disturbance and Sediment: Clearing riparian vegetation and in-channel works (culvert installation, channel realignment) can destabilise natural riffles and gravel beds, directly removing or disturbing benthic habitats used by macroinvertebrates. Fine sediment runoff can clog interstitial spaces in stream bed gravels, depriving macroinvertebrates of habitat and oxygen. Pollution events (spills of chemicals, concrete wash, etc.) may be toxic to aquatic invertebrates. Introduction of INNS (e.g. invasive mussels or crustaceans) during construction could alter community composition and predate or out-compete native invertebrates.<br><br>**Site specific detail:** The Nationally Scare water beetle (*Agabus conspersus*) was recorded on the Moulton Mere Drain (North), 700 m from the proposed Scheme. Works within and adjacent to the channel, in particular the channel realignment and installation of culverts within channels of the Moulton River water body could impact this species through habitat deterioration, toxicity and increased suspended sediment. | • W02, W05, W09, AQ01, GG04, GG13, GG14, GG20, GH04, GH06: Fine sediment and pollution prevention.<br>• W02, W12: Design and construct any realigned channels with diverse morphology (pools, riffles, bends) to provide varied habitats for invertebrates and avoid overly uniform, simplified streams where practical This is constrained by the fact that watercourses in the region are IDB maintained and must continue to function for that purpose.<br>• W02, W03, LV01, H04, GG05: Avoid unnecessary clearance of bankside vegetation; retain trees and shrubs where feasible to preserve bank stability and organic inputs (leaf litter, woody debris) that support macroinvertebrate habitat.<br>• W02, W03, W04, H04, LV01, B04: Immediately stabilise and rehabilitate cleared areas (use erosion control mats, rapid seeding/planting) so |

| WFD Quality Element | Potential impacts | Relevant mitigation |
|---|---|---|
| | | that exposed soils do not erode into water; this protects water quality and benthic habitats.<br>• B04: Implement strict biosecurity measures to prevent introducing or spreading invasive non-native species (INNS) – for example, Check, Clean, Dry all equipment and machinery before entering/leaving water bodies, and train workers to recognise and report any invasive plants or animals. |
| Composition, Abundance and Age Structure of Fish Fauna | Turbidity, Noise and Barriers: Elevated suspended sediment from construction runoff can reduce water clarity and clog fish gills, impairing feeding and respiration. This can be lethal to eggs and fry and cause adult fish to avoid the area. Accidental fuel or chemical spills can acutely poison fish or alter water chemistry (e.g. high alkalinity from cement) beyond fish tolerance. In-channel construction (e.g. installing culverts, temporary coffer-dams or diversions) may create physical barriers to fish movement or migration, fragmenting habitat and preventing access to spawning or feeding areas. Additionally, construction-related noise and vibration (pile driving, heavy machinery) can stress or displace fish; sensitive species may abandon spawning grounds or suffer hearing damage, and migratory species (e.g. salmon, eel) might delay or avoid passage near the site.<br><br>**Site specific detail:** European eel, European smelt, and brown trout were identified within the wider Welland catchment, and European eel were also identified within Lord's Drain (WM_WM_69) (Moulton River water body) through site surveys. Within the Moulton River waterbody the European eel is particularly susceptible to impacts from works within and adjacent to the channel, through channel realignment; temporary culvert installation; run off causing elevated suspended sediment; habitat fragmentation; and underwater noise and vibration. Additionally works adjacent to the Welland Transitional water body can impact the migratory European eel and brown trout through noise, vibration and run off, in addition to works on upstream waterbodies further impacting migration. | • W02, W05, W09, AQ01, GG04, GG13, GG14, GG20, GH04, GH06: Fine sediment and pollution prevention.<br>• W02, W03, W04, H04, LV01, B04: Immediately stabilise and rehabilitate cleared areas (use erosion control mats, rapid seeding/planting) so that exposed soils do not erode into water; this protects water quality.<br>• B11: Before dewatering or working in a channel, conduct a fish rescue to safely capture and relocate fish (and other mobile fauna) from the work area to suitable nearby habitats, thereby preventing direct harm.<br>• B12: Maintain aquatic connectivity during works – for instance, install temporary bypass channels or culverts that allow fish to move past construction sites, and avoid blocking the entire channel at any one time. Remove any temporary barriers as soon as possible.<br>• B10, B14, NV03, GG09: Mitigate construction noise and vibration impacts on fish by using quieter techniques and timing noisy activities to avoid sensitive periods (e.g. refrain from impact piling during fish spawning/migration seasons). If impact piling is necessary, use methods like soft-start procedures or noise dampening (e.g. bubble curtains) to reduce harm to fish. |
| Structure and composition of WFD higher and lower sensitivity habitats (Saltmarsh and intertidal habitats within transitional waterbodies) | Land take, sedimentation and Water Quality: Construction works (earthworks for new infrastructure causing loss of habitat areas, runoff from bare ground, etc.) may result in the direct loss of habitats and introduce fine sediment, which can smother vegetation, reducing light penetration and causing change to habitat composition. Accidental releases of fuel or cement raise pH or pollutants, stressing or killing sensitive vegetation. Removal of vegetation during installation of temporary infrastructure can temporarily reduce habitat area until vegetation regrows. Introduction of invasive non-native plant species (INNS) via equipment or soil can out-compete native plant species and destabilise habitats.<br><br>Higher sensitivity habitat (saltmarsh) occurs immediately adjacent to the Welland River in the Welland transitional water body. Installation of scaffolding and nets during conductor stringing on the north bank of the river have the potential to result in the loss of saltmarsh habitat. | • W02, W05, W09, AQ01, GG04, GG13, GG14, GG20, GH04, GH06: Fine sediment and pollution prevention.<br>• B04: Provide wheel wash facilities and clean machinery, tools, and PPE when moving between sites or water bodies. This reduces transfer of sediments and INNS. |

| WFD Quality Element | Potential impacts | Relevant mitigation |
|---|---|---|
| Hydromorphological Quality Elements | | |
| Quantity and Dynamics of Water Flow | Flow Alteration: Construction can temporarily alter flow patterns and volumes in watercourses. For example, installing or diverting a channel through a culvert/new realigned channel may require pumping or damming that reduces flows downstream or causes sudden surges. If not managed, this can lead to unnatural low-flow conditions or, conversely, scouring high flows when water is released. Earthworks and sediment deposition in the channel can change flow velocity distribution, potentially causing localised pooling or increased flood risk (e.g. if sediment partially blocks the channel, reducing its capacity). Overall, construction activities might upset the natural flow regime temporarily, especially during diversion of a watercourse or if culverts are undersized during works. | • W02, W04, W12: Plan and manage construction phasing to maintain natural flow as much as possible. For example, in channel realignment use temporary bypass pipes/pumps to keep water flowing around work sites and reintroduce flow gradually to new channels to prevent erosion from sudden inundation.<br>• W02, W05, W09, AQ01, GG04, GG13, GG14, GG20, GH04, GH06: Fine sediment and pollution prevention. |
| River Continuity (Longitudinal Connectivity) | Obstruction to Movement: Temporary works in the channel (coffer dams, causeways, pipes) and the construction of new culverts can interrupt longitudinal continuity of the river. This can impede migratory aquatic species and movement of sediment. Fish moving upstream or downstream might be blocked or delayed by a temporary dam or poorly designed diversion, leading to missed spawning opportunities. Similarly, sediment transport is disrupted – material might accumulate upstream of a blockage and starve downstream reaches of sediment, altering habitat. Even short-term disruptions can have outsize effects in sensitive periods (e.g. fish migration seasons). | • B01, B09, B10, B11, B12, B14: (see Fish Fauna above for fish rescue and temporary bypass measures).<br>• W02, W04, W12: After construction, fully restore longitudinal connectivity by removing all temporary in-stream structures and rehabilitating the channel. If the works caused sediment deficits (e.g. trapped gravels/silt upstream of a cofferdam), redistribute or replenish bed material to re-establish natural sediment transport.<br>• B11, B12, W12: Deploy an Ecological Clerk of Works (ECoW) or equivalent on site to oversee in-river construction. The ECoW ensures compliance with fish passage measures (e.g., checks that bypass channels are functioning and free of blockages) and can advise to temporarily halt or adjust works if unexpected obstructions or environmental issues arise. |
| River Depth and Width Variation | Morphological Simplification: Construction can lead to short-term homogenization of channel form. For instance, heavy machinery or temporary cofferdams may inadvertently reshape the channel cross-section, infilling pools or chiselling through bars. The creation of a straight, uniform diversion channel or placement of bank protection can eliminate natural variation (riffles, pools, meanders) in the affected reach. Sediment deposits from runoff might locally reduce depth (raising the bed) and narrow the channel. Such changes can alter hydraulic diversity – e.g. a wider, shallower channel in construction areas might have slower flow and less habitat for depth-preferring species, whereas an over-deepened trench could create an unnaturally uniform glide. | • W02, W05, W09, AQ01, GG04, GG13, GG14, GG20, GH04, GH06: Fine sediment and pollution prevention.<br>• W12: Schedule and execute channel realignments in stages to preserve habitat complexity – for example, construct and connect new sections sequentially rather than all at once. This staged approach allows aquatic organisms to gradually colonize new habitats and maintains a mix of depths and widths more similar to natural conditions during the transition. |
| Structure and Substrate of the River Bed | Bed Disturbance and Scour: In-channel construction often disrupts the riverbed. Installation of temporary culverts and channel realignment can remove or compact natural substrates (gravel, cobble), eliminating spawning gravels or benthic habitat in those spots. Machinery moving in-stream may also crush or dislodge substrate structure. Additionally, altering flows can cause downstream scour – e.g. pumping high flows or sudden releases from a cofferdam might erode the bed and banks, creating unnaturally deep scour holes. Fine sediment deposition, as noted, can cover coarse bed materials with silt, reducing substrate quality. | • W02, W05, W09, AQ01, GG04, GG13, GG14, GG20, GH04, GH06: Fine sediment and pollution prevention. Measures like isolating work areas, preventing pollution, and restoring original bed materials post-works will protect the riverbed's natural structure. |

| WFD Quality Element | Potential impacts | Relevant mitigation |
|---|---|---|
| | Construction of outfalls or energy dissipation pads can result in artificial materials on the bed (rip-rap, concrete aprons), changing the natural substrate composition. | • W06, W11: Surface water drainage design for haul roads and compounds to minimise impacts from outfalls and runoff. |
| Structure of the Riparian Zone | Bank Erosion and Habitat Loss: Clearing vegetation for access tracks, site compounds, or along the channel removes root systems that stabilise banks. This can lead to increased bank erosion, undercutting, and even bank collapse, altering the riparian structure. Loss of riparian cover also means loss of shading and inputs (leaf litter, woody debris) to the river, which can degrade aquatic habitat. Heavy machinery on banks or in floodplain soils may compact them, reducing their porosity and altering floodplain connectivity (water may run off quickly rather than soaking in). The introduction or spread of INNS in the riparian zone (e.g. Japanese knotweed on exposed soils) can further degrade bank structure – invasive plants often die back in winter or have shallow roots, leaving banks more vulnerable to erosion. During construction, storage of materials or fill on the floodplain can block flow paths and reduce the floodplain's capacity to convey floodwater, effectively disconnecting it until removed. Overall, these activities can simplify and destabilise the riparian corridor. | • W02, W03, LV01, GG05: Minimize the permanent loss of floodplain habitat. Where floodplain or wetland areas are unavoidably affected, implement habitat restoration or offsetting (e.g., create or enhance equivalent wetland areas nearby) to maintain overall ecological function.<br>• W02, W06, W11: Apply targeted runoff controls in construction areas to protect the riparian zone. For example, use slope stabilization (geo-textiles, mulch) on exposed banks, install cut-off drains or swales by access roads to intercept muddy water, and schedule earthworks to avoid wet seasons.<br>• W02, W06, W11: Keep the floodplain free of long-term obstructions. Avoid storing materials or equipment in flood-prone areas, or use pallets/raised platforms as needed, so as not to impede flood water or wildlife movement. Ensure any temporary fills or structures on the floodplain are removed promptly to restore natural connectivity and storage capacity.<br>• W11: Implementation of a Drainage Management Plan (DrMP) using SuDS principles for runoff control, treatment and attenuation.<br>• B04: Provide wheel wash facilities and clean machinery, tools, and PPE when moving between sites or water bodies. This reduces transfer of sediments and INNS. |

## 7.2 Operational impacts

### Potential generic operational impacts of the Scheme on Water Framework Directive quality elements

Based on UKTAG guidance (Annex IV: Flood Risk Management, UKTAG, 2008), potential pressures and impacts of the Scheme have been identified along with options for mitigation measures for consideration in design; these are presented in Table 7.2**.** Where practicable, these mitigation measures suggested by the UKTAG guidance have been considered within the embedded design to offset potential impacts for WFD compliance.

Table 7.2 Pressures, potential impacts and associated mitigation for works to the impacted watercourses and downstream water bodies (Source: Annex IV: Flood Risk Management, UKTAG, 2008).

| Pressure | Sub-pressures | Potential impacts | Mitigation measures |
|---|---|---|---|
| Channel alteration | Tidal river alteration (e.g. reconductoring/restringing platform). | Disruption of tidal flow and interaction; Alteration of estuarine processes; Alteration of natural sediment dynamics; Alteration of bathymetry; Loss of morphological diversity and habitat (Salt Marsh). | • Restore / create / enhance aquatic and marginal habitats.<br>• Increase in-channel morphological diversity. |
| Channel alteration | Realignment/ re-profiling/ regrading | Loss of morphological diversity and habitat. | • Retain marginal aquatic and riparian habitats.<br>• Increase in-channel morphological diversity, e.g. install instream features.<br>• Two stage channels. |
| Operations and maintenance | Pipes, inlets, outlets/SuDs and offtakes | Hydromorphological alterations of water and sediment inputs through artificial means. | • Appropriate techniques to align and attenuate flow to limit detrimental effects of these features |

### Assessment of the Scheme against Water Framework Directive quality elements

7.2.1 The objectives of the operational phase measures outlined in this section are to avoid, prevent, reduce or offset potential long-term impacts on WFD quality elements arising from the functioning of the Scheme.

7.2.2 Good practise during the operational phase is essential to ensure that the Scheme does not result in deterioration of WFD Hydromorphological, Biological or Physico-chemical quality elements, and to support the achievement of GES or Potential.

7.2.3 These measures address identified generic operational risks, including long-term changes to flow regime and sediment transport, maintenance of outfalls and SuDS, riparian habitat degradation, pollution from operational discharges or runoff, continuity and connectivity for aquatic species, and the introduction or spread of INNS.

7.2.4 These include, but are not limited to:

1) SuDS and outfall pollution and sediment control;
2) Flow regime and sediment continuity protection;
3) Morphological diversity and channel habitat enhancement;
4) Bankside erosion and riparian stability;
5) Water quality monitoring and discharge control;
6) Noise and vibration mitigation near aquatic habitats;
7) Habitat restoration and ecological enhancement;
8) Riparian shading and thermal regulation;
9) Fish passage and aquatic connectivity; and
10) INNS biosecurity and management.

7.2.5 Together, these measures ensure that the operational activities of the Scheme are consistent with the objectives of the WFD and do not compromise the status of any water body or its ability to achieve or maintain GES or Potential.

7.2.6 The generic operational site-specific impacts of the Scheme on the Biological, Physico-chemical and Hydromorphological quality elements of the surface water WFD water bodies are provided in Table 7.3.

Table 7.3 Generic operational impacts on the WFD quality elements and their associated mitigation measures. Activities that are not expected to have an adverse impact on each quality element receptor are omitted.

| WFD Quality Element | Potential impacts | Mitigation |
|---|---|---|
| Water body name and consenting boundaries | Risegate Eau (GB205031055525): Exempt Overhead Line Works and Moulton River (GB205031050755): Exempt Overhead Line Works, 2WS Overhead Line Works, 4ZM Overhead Line Works, and Substation Works; and Welland Transitional (GB530503100400): Exempt Overhead Line Works. | |
| **Biological Quality Elements** | | |
| Composition and Abundance of Aquatic Flora | Changes in flow and water quality relating to outfall/SuDs discharges, in addition to simplified in channel and riparian habitat, and changes in flow within the realigned section of watercourse, could reduce habitat availability and continuity.<br>**Site specific detail:** The Moulton River supports the IUCN Red List macrophyte species *Callitriche obtusangula*. Changes in flow pattern and water quality have the potential to affect this species.<br>Introduction or spread of INNS though maintenance and monitoring. | • SuDS and outfall management to attenuate flows.<br>• Water quality monitoring to ensure outflows meet environmental standards.<br>• Preserving natural flow characteristics through channel design.<br>• Aquatic, marginal and riparian habitat restoration.<br>• Bankside erosion or instability of restored banks.<br>• Loss or degradation of aquatic, marginal, or riparian habitats.<br>• Biosecurity and INNS management. |
| Composition and Abundance of Macroinvertebrate Fauna | Changes in flow and water quality relating to outfall/SuDs discharges, in addition to simplified in channel habitat and changes in flow within the realigned section of watercourse, could reduce habitat availability and continuity as well as increased sedimentation.<br>**Site specific detail:** Although the watercourses scoped into the assessment were found to support macroinvertebrate assemblages indicative of heavily sedimented conditions, the Nationally Scarce water | • SuDS and outfall management to attenuate flows.<br>• WWater quality monitoring to ensure outflows meet environmental standards.<br>• Preserving of natural flow characteristics through channel detailed design.<br>• Aquatic, marginal and riparian habitat restoration.<br>• Biosecurity and INNS management during operational management activities. |

| WFD Quality Element | Potential impacts | Mitigation |
|---|---|---|
| | beetle, *Agabus conspersus* was recorded on the Moulton River within 700m of the scheme.<br>Introduction or spread of INNS though maintenance and monitoring. | |
| Composition, Abundance and Age Structure of Fish Fauna | Changes in flow and water quality reduction from outfall/SuDs discharges, in addition to simplified in channel habitat and changes in flow within realigned section of watercourse, could reduce habitat availability and continuity as well as impact fish behaviour and movement. Potential noise and vibration from the new substation could impact fish behaviour and movement.<br>**Site specific detail:** European eel was recorded during surveys on the Lord's Drain (WC_WM_69), a tributary of the Molton River. Changes in habitat connectivity have the potential to impact on migratory pathways for eel.<br>Introduction or spread of INNS though maintenance and monitoring. | • SuDS and outfall management to attenuate flows.<br>• Water quality monitoring to ensure outflows meet environmental standards.<br>• Preserving of natural flow characteristics through channel design.<br>• Noise and vibration management of operational activities. |
| **Hydromorphological Quality Elements** | | |
| Quantity and Dynamics of Water Flow | Alteration due to operational drainage discharges, SuDS outflows, and potential blockage or underperformance of culverts. | • Implement SuDS and outfall structures designed to attenuate peak flows, slow runoff, and reduce erosion risk at discharge points. This includes features like detention basins, swales, and energy dissipation structures.<br>• Establish a routine inspection and maintenance schedule for culverts and outfalls to ensure they remain free of debris and function as designed, preserving natural flow variability and avoiding blockages. |

| WFD Quality Element | Potential impacts | Mitigation |
|---|---|---|
| River Continuity | Long-term obstruction to aquatic species movement or sediment transport due to culvert design or blockage. | • Design culverts to maintain longitudinal connectivity by embedding them below bed level, incorporating natural substrate, and ensuring they are passable to aquatic organisms under a range of flow conditions. Include debris clearance protocols to prevent obstruction.<br>• Maintenance of culverts and outfalls also supports sediment continuity and prevents artificial barriers to flow and sediment transport. |
| River Depth and Width Variation | Morphological simplification from fixed channel geometry or sediment accumulation. | • Implement a monitoring program to detect sediment build-up or erosion over time, and apply adaptive management (e.g. sediment removal, reshaping) to maintain channel form and function. |
| Structure and Substrate of the River Bed | Long-term bed degradation or scour at outfalls/SuDs, and culverts. | • Install scour protection measures at outfalls and culverts, such as rip-rap, energy dissipation blocks, or embedded structures, to prevent erosion and maintain bed stability.<br>• Periodic inspection of bed conditions allows early detection of degradation or excessive scour, enabling timely intervention to restore substrate integrity. |
| Structure of the Riparian Zone | Riparian habitat degradation, shading loss, and INNS establishment. | • Restore and enhance riparian habitats through native planting, buffer zone creation, and bank stabilisation measures to support biodiversity and reduce erosion.<br>• Manage shading through strategic riparian planting to regulate water temperature and light availability, benefiting aquatic flora and fauna.<br>• Implement biosecurity protocols and regular monitoring to prevent the introduction or spread of |

| WFD Quality Element | Potential impacts | Mitigation |
|---|---|---|
| | | INNS and manage existing infestations through appropriate control measures. |

## 7.3 Water Framework Directive Compliance

### Review of mitigation measures to deliver WFD objectives

7.3.1 The high-level WFD mitigation measures set out in the 2022 Anglian RBMP that are relevant to the Scheme are considered below. Mitigation measures provided by the EA are also taken into account to ensure that the Scheme does not hinder the achievement of these measures and, where applicable, contributes to their delivery.

7.3.2 Overall, operational activities can include habitat restoration, sediment and flow management, and INNS monitoring/biosecurity, contributing to the WFD mitigation measures (as defined in the RBMP) and long-term ecological resilience.

#### Measures required to address physical modifications

7.3.3 The following descriptions are proposed to address physical modifications:

1) habitat restoration or creation;
2) river restoration and fish pass improvements;
3) removal of barriers to fish passage; and
4) riparian tree planting and fencing.

#### Measures required to manage changes to natural flow and levels of water

7.3.4 The following measures are proposed to manage changes to natural flow and levels of water:

1) control pattern/timing of abstraction;
2) water demand management;
3) improvement to condition of channel/bed and/or banks/shoreline; and
4) use an alternative source/relocate abstraction or discharge.

#### Measures required to manage invasive non-native species

7.3.5 The following measures are proposed to address negative effects of non-native invasive species:

1) mitigation, control and eradication (to reduce the extent);
2) building awareness and understanding (to slow the spread);
3) early detection, monitoring and rapid response (to reduce the risk of establishment); and
4) prevent introduction.

7.3.6 The embedded CEMP measures within the Scheme contribute to the management of INNS, including prevention of introduction through measure B04.The Scheme does not otherwise contribute directly to the delivery of the remaining WFD

mitigation measures for the water bodies; however, it does not prevent their achievement.

## Biodiversity Net Gain

7.3.7 The Environment Act 2021 requires new developments in England to deliver Biodiversity Net Gain (BNG). This mandates that planning applicants demonstrate a minimum 10% increase in biodiversity (measured in biodiversity units) post-development compared to the pre-development baseline. This requirement came into force on 12 February 2024 through the insertion of Schedule 7A into the Town and Country Planning Act 1990. As such, achieving at least 10% BNG is now a statutory requirement for developments requiring planning permission, unless exemptions apply.

7.3.8 The Biodiversity Net Gain Report submitted as part of the TCPA application refers to the following figures in respect of the Substation Works:

- **Pre-development baseline:** 21.32 watercourse units.
- **Post-development:** 18.92 watercourse units (inclusive of onsite 2.32 watercourse units).
- **Net change**: -2.40 units (-11.27%).

7.3.9 A 1.57 km stretch of watercourse (WC_WM_63) has been included within the BNG metric as enhanced. This reflects proposed woodland planting along the bank top, which is expected to reduce riparian encroachment from adjacent agricultural land. A precautionary assumption has been applied whereby planting is completed at the end of the construction period (i.e. a worst-case scenario for temporal risk).

7.3.10 This enhancement is calculated to deliver 2.32 watercourse units.

7.3.11 Despite this, an overall deficit of -2.40 watercourse units (-11.27%) remains, and therefore the Substation Works do not achieve the required 10% BNG for watercourses.

7.3.12 To address this shortfall and meet the statutory requirement for 10% BNG across habitat, hedgerow and watercourse units—while complying with the biodiversity trading rules, the following off-site provision is proposed:

- 52.42 habitat units (low distinctiveness or above); and
- 4.53 watercourse units (medium to high distinctiveness).

7.3.13 National Grid has engaged with local off-site unit providers, including GIGL, which has confirmed the availability of suitable units. Off-site biodiversity units will be procured via National Grid's Qualifying Utilities Dynamic Market (QUDM), with a preference for units located in proximity to Weston Marsh. National Grid is seeking to work with off-site BNG unit providers who develop biodiversity driven projects that provide wider environmental and social benefits. Accordingly, National Grid is committed to delivering BNG for the Substation Works in a way that provides measurable benefits for local biodiversity, alongside broader environmental and social value.

## Assessment of the Scheme against Water Framework Directive objectives

7.3.14 The compliance of the Scheme is determined based upon an assessment against the objectives relating to the Biological, Physico-chemical and Hydromorphological quality elements. The WFD compliance assessment for the Scheme is summarised in **Table 7.4.**

Table 7.4 Summary of the WFD compliance assessment.

| **Water body ID** | **GB205031055525** | **GB205031050755** | **GB530503100400** |
|---|---|---|---|
| **Water body name** | **Risegate Eau** | **Moulton River** | **Welland Transitional** |
| **Relevant component boundary** | **Exempt Overhead Line Works** | **Exempt Overhead Line Works, 2WS Overhead Line Works, 4ZM Overhead Line Works and Substation Works** | **Exempt Overhead Line Works** |
| Deterioration in the status/ potential of the water body | **Biological:** Construction and operational impacts for the Risegate Eau are detailed in **Table 6.1**. and **Table 6.7**. With the implementation of the mitigation measures set out in **Table 7.1**, there will be no deterioration in the biological quality element.<br><br>**Physico-chemical:** Construction and operational impacts for the Risegate Eau are detailed in **Table 6.1** and **Table 6.7**. With the implementation of the mitigation measures set out in **Table 7.1**, there will be no deterioration in the Physio-chemical quality element.<br><br>**Hydromorphological:** Construction and operational impacts for the | **Biological:** Construction and operational impacts for the Moulton River are detailed in Table 6.2 and Table 6.8. With the implementation of the mitigation measures set out in **Table 7.1**, there will be no deterioration in the biological quality element.<br><br>**Physico-chemical:** Construction and operational impacts for the Moulton River are detailed in **Table 6.2**. With the implementation of the mitigation measures set out in **Table 7.1**, there will be no deterioration in the Physio-chemical quality element.<br><br>**Hydromorphological:** Construction and operational impacts for the | **Biological:** Construction and operational impacts for the Welland Transitional are detailed in **Table 6.3**, **Table 6.4** and **Table 6.5**. With the implementation of the mitigation measures set out in **Table 7.1** there will be no deterioration in the biological quality element. In addition, the River Welland is embanked on both banks preventing any potential impacts from adjacent waterbodies (i.e. Risegate Eau and the Moulton River) such as bank-runoff.<br><br>**Physico-chemical:** Construction and operational impacts for the Welland Transitional are detailed in **Table 6.3**,**Table 6.4** and **Table 6.5**. With the implementation of the mitigation measures set out in **Table 7.1**, there |

| Water body ID | GB205031055525 | GB205031050755 | GB530503100400 |
|---|---|---|---|
| **Water body name** | **Risegate Eau** | **Moulton River** | **Welland Transitional** |
| **Relevant component boundary** | **Exempt Overhead Line Works** | **Exempt Overhead Line Works, 2WS Overhead Line Works, 4ZM Overhead Line Works and Substation Works** | **Exempt Overhead Line Works** |
| | Risegate Eau are detailed in **Table 6.1**. With the implementation of the mitigation measures set out in **Table 7.1** there will be no deterioration in the Hydromorphological quality element. | Moulton River are detailed in **Table 6.2**. With the implementation of the mitigation measures set out in **Table 7.1,** there will be no deterioration in the Hydromorphological quality element. | will be no deterioration in the biological quality element. In addition, the River Welland is embanked on both banks preventing any potential impacts from adjacent waterbodies (i.e. Risegate Eau and the Moulton River) such as bank-runoff.<br>**Hydromorphological:** Construction and operational impacts for the Welland Transitional are detailed in **Table 6.3**, **Table 6.4** and **Table 6.5**. With the implementation of the mitigation measures set out in **Table 7.1**, there will be no deterioration in the biological quality element. |
| Ability of the water body to achieve GEP/GES | The Scheme will not result in long-term effects on morphology, connectivity, water quality, or ecological functioning. Operational measures will support the water body's ability to achieve Good Status. | The Scheme will not result in long-term effects on morphology, connectivity, water quality, or ecological functioning. Operational measures will support the water body's ability to achieve Good Status. | Achieving Good Potential is not constrained. Operational design avoids tidal process disruption and supports RBMP objectives through INNS control and habitat protection. |

| Water body ID | GB205031055525 | GB205031050755 | GB530503100400 |
|---|---|---|---|
| **Water body name** | **Risegate Eau** | **Moulton River** | **Welland Transitional** |
| **Relevant component boundary** | **Exempt Overhead Line Works** | **Exempt Overhead Line Works, 2WS Overhead Line Works, 4ZM Overhead Line Works and Substation Works** | **Exempt Overhead Line Works** |
| Impact on the WFD objectives of other water bodies within the same RBD | No cross-boundary effects. The Scheme will not result in downstream deterioration, continuity barriers, pollution pathways, or long-term sediment loading that could compromise objectives in connected water bodies. | No cross-boundary effects. The Scheme will not result in downstream deterioration, continuity barriers, pollution pathways, or long-term sediment loading that could compromise objectives in connected water bodies. | No effects on adjacent transitional or coastal WFD water bodies; no impacts on protected areas; and no significant hydromorphological pressures exported across boundaries. |
| Ability to contribute to the delivery of the WFD objectives | **Yes.** Operational measures (e.g. INNS biosecurity) align with RBMP mitigation measures and support long-term ecological resilience by preventing the spread of INNS (B04). | **Yes.** Operational measures (e.g. INNS biosecurity) align with RBMP mitigation measures and support long-term ecological resilience, by preventing the spread of INNS (B04). | **Yes.** Operational biosecurity and habitat stabilisation measures contribute to RBMP mitigation for transitional water bodies and support estuarine ecological function. |

# 8. Conclusion

8.1.1 The WFD compliance assessment has considered the potential impacts of both the construction and operational phases of the Scheme on the Hydromorphological, Biological and Physico-chemical quality elements of the Risegate Eau (GB205031055525: : Exempt Overhead Line Works), Moulton River (GB205031050755: Exempt Overhead Line Works, S37 2WS Overhead Line Works, S37 4ZM Overhead Line Works and Substation Works), and the Welland Transitional (GB530503100400: Exempt Overhead Line Works).

8.1.2 Baseline macrophyte and macroinvertebrate data were not available for some sampled watercourses within the screened-in water bodies. However, it is considered unlikely that this limitation will result in a change to the assessment of impacts at the WFD water body scale, as appropriate mitigation measures are in place to protect both macrophytes and macroinvertebrates.

8.1.3 During the construction phase, a range of potential impacts were identified, including increased fine sediment delivery, disturbance to riverbed and banks, temporary alterations to flow pathways, loss of habitat continuity, and risks associated with pollution and INNS. These impacts have been addressed through a comprehensive suite of mitigation measures, which are included within the Outline CEMP. Measures such as sediment and pollution control, bed and bank protection, flow and water quality safeguards, and biosecurity protocols are designed to avoid or minimise adverse effects and ensure that construction activities do not result in deterioration of WFD status or compromise the ability of any water body to achieve GES or Potential.

8.1.4 In the operational phase, the assessment has identified that, with the implementation of embedded and additional mitigation measures, the Scheme will not result in deterioration of WFD status or potential. Operational risks such as long-term changes to flow regime, sediment transport, habitat degradation, and the spread of INNS have been addressed through a robust set of measures. These include the design and maintenance of SuDS and ongoing monitoring and maintenance protocols, all of which are incorporated into the Operational measures.

8.1.5 The mitigation measures outlined for both phases are consistent with the objectives of the RBMP and support the delivery of relevant WFD mitigation actions. The Scheme does not compromise the ability of any water body to achieve or maintain GES or Potential, nor does it hinder the achievement of WFD objectives in adjacent or downstream water bodies.

8.1.6 In conclusion, the Scheme, as designed and with the construction and operational measures in place, is compliant with the objectives of the WFD. It represents a Scheme that not only avoids adverse impacts on the water environment but also contributes positively to the long-term ecological resilience and hydromorphological integrity of the affected water bodies.

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# Figures

# Figure 1 Scheme Site Boundary

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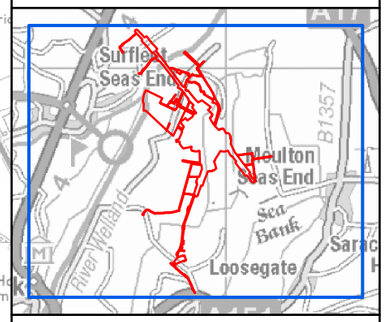


Legend

- Scheme Site Boundary
- Substation Works Site Boundary
- S37 OHL Works Site Boundary
- Exempt Overhead Line Works Site Boundary
- S37 - 2WS - OHL Works Site Boundary
- S37 - 4ZM - OHL Works Site Boundary

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Purpose: WATER ENVIRONMENT

Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

Document Title: FIGURE 1 SCHEME SITE BOUNDARY

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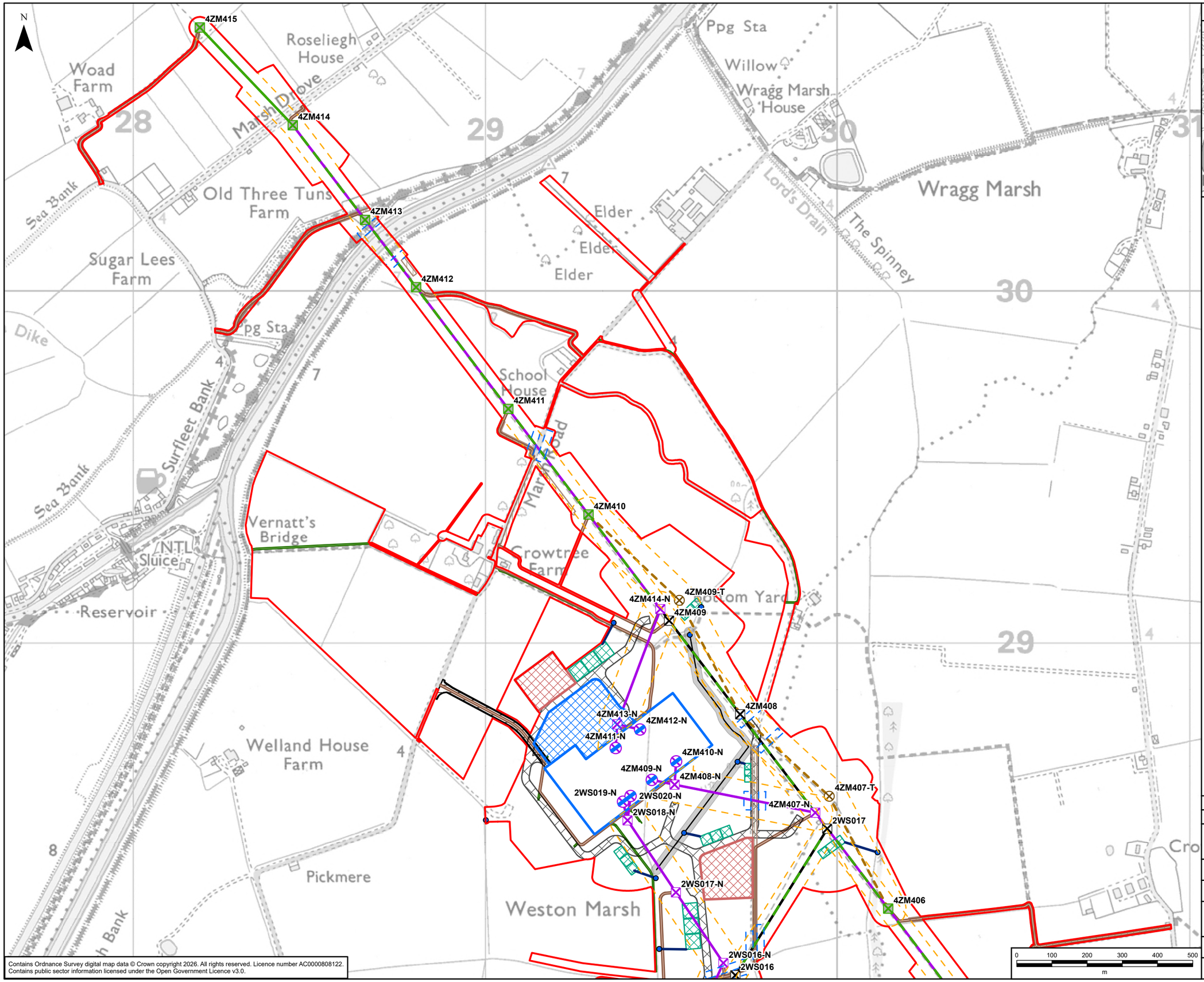
# Figure 2 Key Permanent Design Features and Temporary Works

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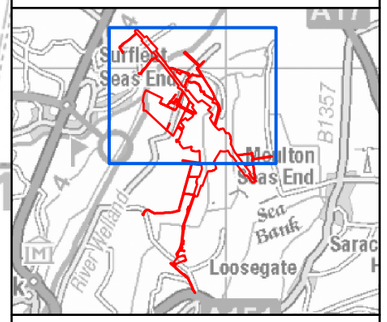


Legend

- Scheme Site Boundary
- LoD
- Substation,Permanent
- Substation Construction Compound,Temporary
- Construction Compounds,Temporary
- Dismantled NG OHL
- Existing NG OHL
- Modified NG OHL
- New NG OHL
- Temporary OHL
- Existing Pylon
- Existing Pylon to be Dismantled
- New Gantry
- New Pylon
- Indicative Temporary Structure
- Indicative Permanent Substation Access Route
- Indicative Maintenance Access
- Indicative Access Route - Stone
- Indicative Access Route - Trackway
- Indicative Crossing Protection Work Area
- Indicative Environmental Mitigation Access
- Indicative Outfall
- Indicative Outfall Pipes
- Permanent Drainage Diversion
- Permanent Drainage Diversion Area
- Indicative Sustainable Drainage System Basin

| Rev | Date | Description | GIS | Chk | App |
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Purpose: WATER ENVIRONMENT

Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

Document Title: FIGURE 2 KEY PERMANENT DESIGN FEATURES AND TEMPORARY WORKS

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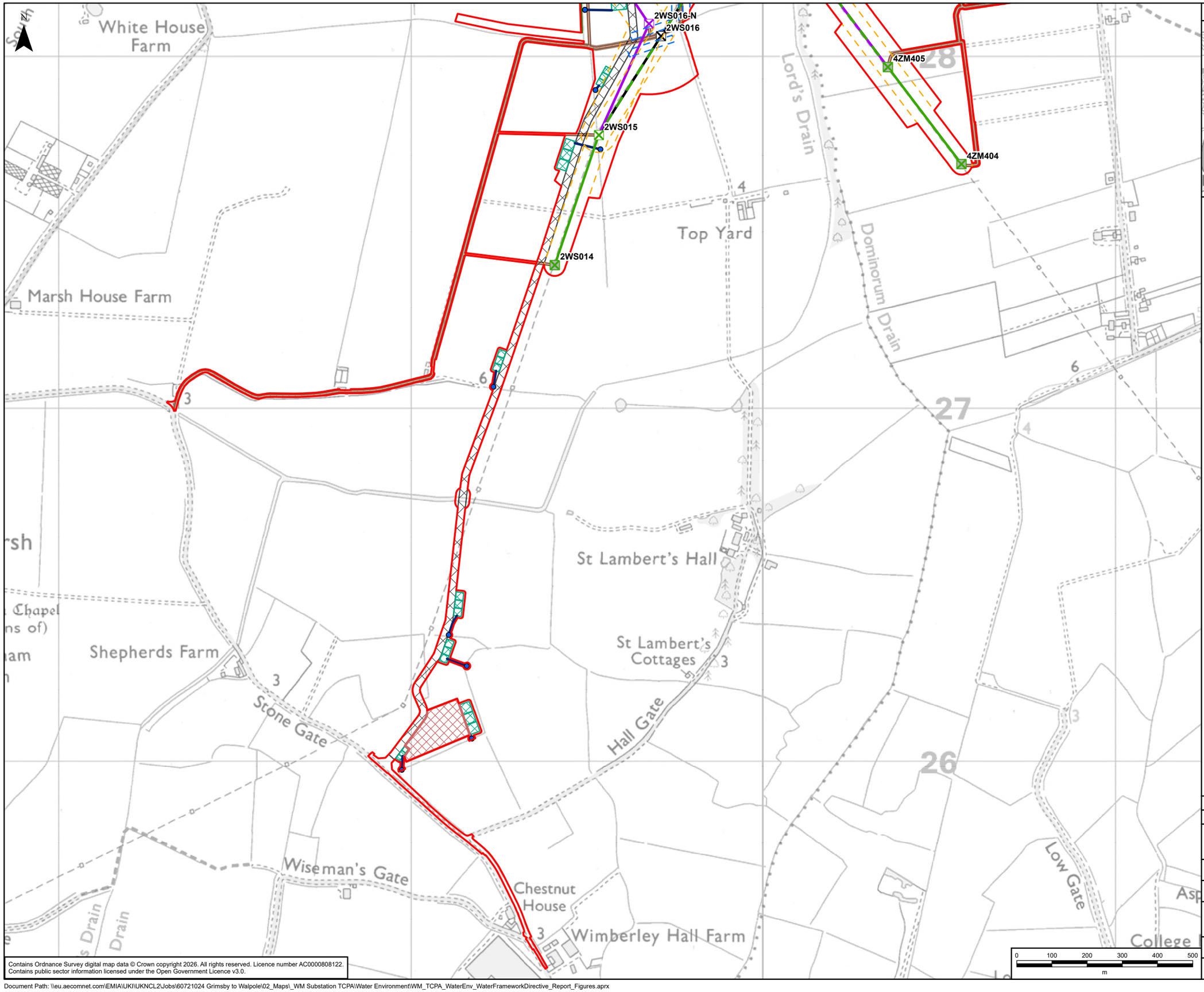




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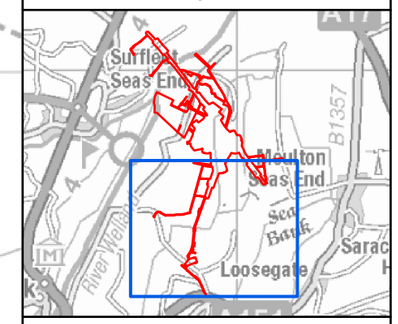


Legend

- Scheme Site Boundary
- LoD
- Construction Compounds,Temporary
- Dismantled NG OHL
- Existing NG OHL
- Modified NG OHL
- New NG OHL
- Existing Pylon
- Existing Pylon to be Modified
- Existing Pylon to be Dismantled
- New Pylon
- Indicative Maintenance Access
- Indicative Access Route - Stone
- Indicative Access Route - Trackway
- Indicative Crossing Protection Work Area
- Indicative Environmental Mitigation Access
- Indicative Outfall
- Indicative Outfall Pipes
- Indicative Sustainable Drainage System Basin

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Purpose: WATER ENVIRONMENT

Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

Document Title: FIGURE 2 KEY PERMANENT DESIGN FEATURES AND TEMPORARY WORKS

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# Figure 3.1 WFD Waterbodies Cycle 3 S37 Substation Consenting Boundary

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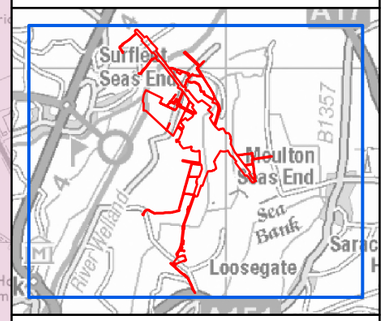


Legend

- Scheme Site Boundary
- Substation Works Site Boundary

Water Framework Directive (WFD) - Cycle 3

- Welland Transitional
- Risegate Eau
- Moulton Drain
- Vernatt's Drain
- Glen
- Whaplode River

| Rev | Date | Description | GIS | Chk | App |
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| Purpose: | WATER ENVIRONMENT |
| Scheme: | PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH |
| Document Title: | FIGURE 3.1 WFD WATERBODIES CYCLE 3 SUBSTATION WORKS SITE BOUNDARY |

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# Figure 3.2 WFD Waterbodies Cycle 3 S37 2WS

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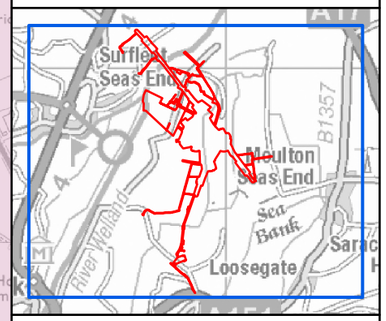


Legend

- Scheme Site Boundary
- S37 - 2WS - OHL Works Site Boundary

Water Framework Directive (WFD) - Cycle 3

- Welland Transitional
- Risegate Eau
- Moulton Drain
- Vernatt's Drain
- Glen
- Whaplode River

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Purpose: WATER ENVIRONMENT

Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

Document Title: FIGURE 3.2 WFD WATERBODIES CYCLE 3 S37 2WS OHL WORKS SITE BOUNDARY

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# Figure 3.3 WFD Waterbodies Cycle 3 S37 4ZM

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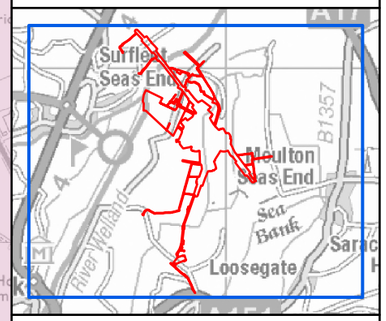


Legend

- Scheme Site Boundary
- S37 - 4ZM - OHL Works Site Boundary

Water Framework Directive (WFD) - Cycle 3

- Welland Transitional
- Risegate Eau
- Moulton Drain
- Vernatt's Drain
- Glen
- Whaplode River

| Rev | Date | Description | GIS | Chk | App |
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Purpose: WATER ENVIRONMENT

Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

Document Title: FIGURE 3.3 WFD WATERBODIES CYCLE 3 S37 4ZM OHL WORKS SITE BOUNDARY

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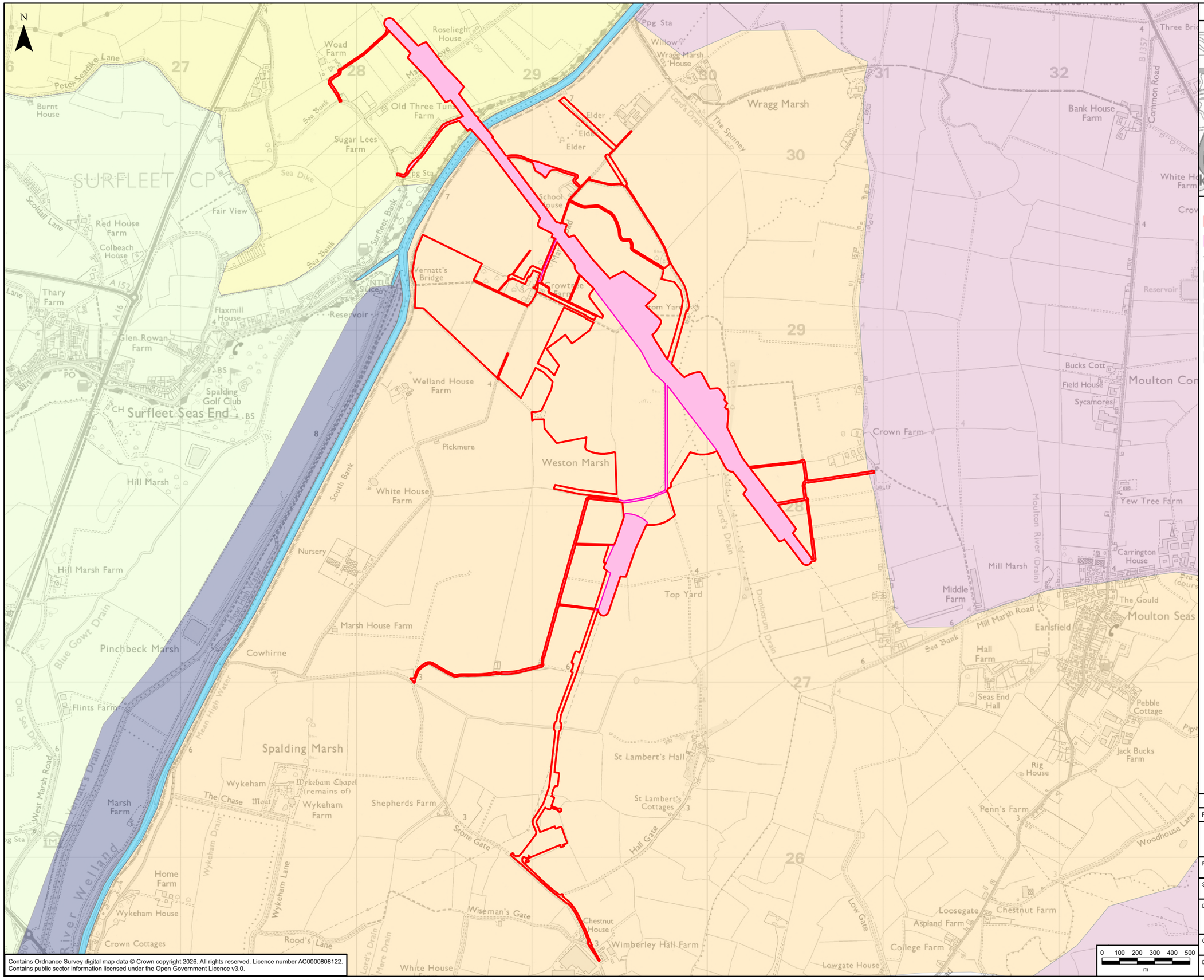
# Figure 3.4 WFD Waterbodies Cycle 3 S37 Exemptions

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Purpose: WATER ENVIRONMENT

Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

Document Title: FIGURE 3.4 WFD WATERBODIES CYCLE 3 EXEMPT OHL WORKS SITE BOUNDARY

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# Figure 4 Survey Locations

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TCPA-OHL-WCX-15;
TCPA-OHL-WCX-16

WM-WCX-19

RJ-WCX-18

Moulton River

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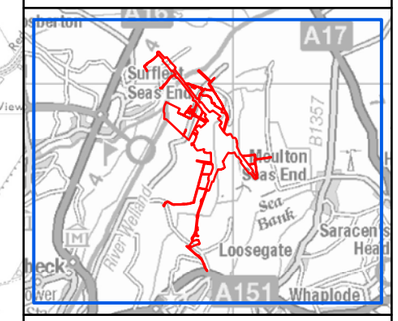


Legend

- Scheme Site Boundary
- Moulton River
- Fish Survey Location
- Macroinvertebrate Survey Locations



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| Rev | Date | Description | GIS | Chk | App |
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Purpose: WATER ENVIRONMENT

Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

Document Title: FIGURE 4 SURVEY LOCATIONS

| Creator: | Date: | Checker: | Date: | Approver: | Date: |
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# Appendices

# Appendix A Characteristics of the WFD water bodies

A.1.1. A list of WFD water bodies and their latest monitoring cycle (2022) data is provided below.

Table A.1 WFD data for Risegate Eau (GB205031055525) surface water body potentially impacted by the Scheme.

| Water Body ID | GB205031055525 |
|---|---|
| Water Body Name | Risegate Eau |
| Water Body Type | River |
| Water Body Area | 38.667 km2 (3866.667 ha) |
| Hydromorphological Designation | Artificial |
| Current Overall Status / Potential | Poor |
| Status Objective (overall) | Moderate by 2015 (disproportionate burdens; technically infeasible) |
| Justification for not Achieving Good Status by 2015 | Disproportionately expensive; unfavourable cost-benefit; technically infeasible |
| Protected Area Designation | West Wash – Shellfish Water; Risegate Eau NVZ |
| Overall Ecological Status / Potential | Poor |
| Overall Ecological Status Objective | Moderate (2015) |
| Overall Biological Status | Poor (Invertebrates Poor; Macrophytes Moderate) |
| Fish | |
| Invertebrates | Poor |
| Macrophytes | Moderate |
| Phytobenthos | |
| Physico-chemical Quality Elements | Moderate (Ammonia Good; DO Poor; Phosphate Poor) |
| Ammonia (Phys-Chem) | Good |
| Dissolved oxygen | Poor |
| pH | High |
| Phosphate | Poor |
| Temperature | High |
| Specific pollutants | Not assessed |
| Triclosan | |

| Water Body ID | GB205031055525 |
|---|---|
| Manganese | |
| Copper | |
| Iron | |
| Zinc | |
| Overall Chemical Status | Fail (Mercury, PBDE) |
| Overall Chemical Quality Element Status Objective | Good by 2063 (natural recovery) |
| Priority substances | Good |
| Priority hazardous substances | Fail |
| Hydromorphology Supporting Elements Status | Not high |
| Hydrological regime | Does not support good |
| Supporting Elements (Surface Water) | Good |
| Mitigation Measures Assessment | Good |

Table A.2 WFD data for Moulton River (GB205031050755) surface water body potentially impacted by the Scheme.

| Water Body ID | GB205031050755 |
|---|---|
| Water Body Name | Moulton River |
| Water Body Type | River |
| Water Body Area | 24.278 km2 (2427.838 ha) |
| Hydromorphological Designation | Artificial |
| Current Overall Status / Potential | Moderate |
| Status Objective (overall) | Good by 2027 (low confidence) |
| Justification for not Achieving Good Status by 2015 | Technically infeasible; cause of adverse impact unknown |
| Protected Area Designation | West Wash – Shellfish Water |
| Overall Ecological Status / Potential | Moderate |
| Overall Ecological Status Objective | Good by 2027 (low confidence) |
| Overall Biological Status | Not assessed (no biological QE shown) |
| Fish | |
| Invertebrates | |
| Macrophytes | |
| Phytobenthos | |
| Physico-chemical Quality Elements | Moderate (Ammonia Bad; DO Bad; Phosphate Poor) |
| Ammonia (Phys-Chem) | Bad |

| Water Body ID | GB205031050755 |
|---|---|
| Dissolved oxygen | Bad |
| pH | High |
| Phosphate | Poor |
| Temperature | Moderate |
| Specific pollutants | Not assessed |
| Triclosan | |
| Manganese | |
| Copper | |
| Iron | |
| Zinc | |
| Overall Chemical Status | Fail (Mercury, PBDE) |
| Overall Chemical Quality Element Status Objective | Good by 2063 (natural recovery) |
| Priority substances | Good |
| Priority hazardous substances | Fail |
| Hydromorphology Supporting Elements Status | Not high |
| Hydrological regime | High |
| Supporting Elements (Surface Water) | Good |
| Mitigation Measures Assessment | Good |

Table A.3 WFD data for Welland Transitional (GB530503100400) surface water body potentially impacted by the Scheme.

| Water Body ID | GB530503100400 |
|---|---|
| Water Body Name | Welland |
| Water Body Type | Transitional Water |
| Water Body Area | 1.367 km2 (136.718 ha) |
| Hydromorphological Designation | Heavily modified |
| Current Overall Status / Potential | Moderate (Ecological) |
| Status Objective (overall) | Ecological: Moderate (2015) |
| Justification for not Achieving Good Status by 2015 | Disproportionately expensive (disproportionate burdens; unfavourable balance of costs and benefits) |
| Protected Area Designation | West Wash – Shellfish Water, The Wash & North Norfolk Coast – SAC, The Wash – SPA, Ramsar |
| Overall Ecological Status / Potential | Moderate |

| Water Body ID | GB530503100400 |
|---|---|
| Overall Ecological Status Objective | Supporting elements (Surface Water): Good by 2021 |
| Overall Biological Status | Not assessed (Cycle 3) |
| Fish | |
| Invertebrates | |
| Macrophytes | |
| Phytobenthos | |
| Physico-chemical Quality Elements | Physico-chemical Quality Elements |
| Ammonia (Phys-Chem) | |
| Dissolved oxygen | High |
| pH | |
| Phosphate | |
| Temperature | |
| Specific pollutants | Not assessed (Cycle 3) |
| Triclosan | |
| Manganese | |
| Copper | |
| Iron | |
| Zinc | |
| Overall Chemical Status | Fail (drivers: Mercury, PBDE) |
| Overall Chemical Quality Element Status Objective | Good by 2063 (natural conditions recovery) |
| Priority substances | Good |
| Priority hazardous substances | Fail |
| Hydromorphology Supporting Elements Status | Not high |
| Hydrological regime | Supports good |
| Supporting Elements (Surface Water) | Good |
| Mitigation Measures Assessment | Good |

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